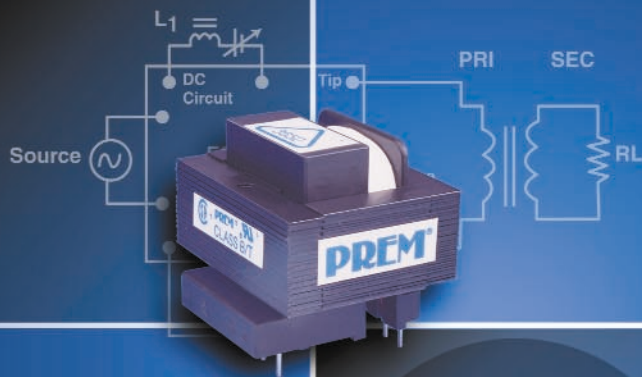
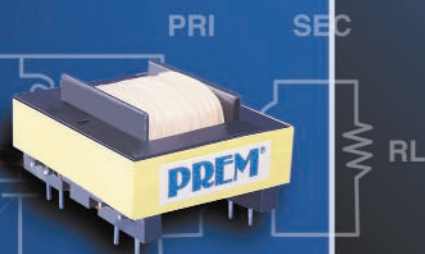
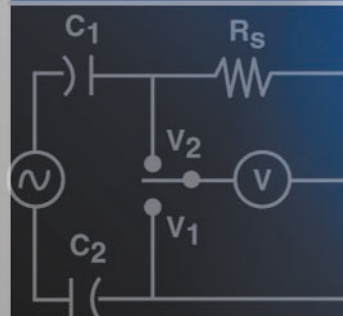


PREM[®]
MAGNETICS, INC.



Powers
Telephony
CRT Display
Inductors
Custom
International Approvals

ENGINEERS' GUIDE TO INDUCTIVE COMPONENTS

FULL SPECTRUM OF COMPONENTS IN STOCK

One of the most comprehensive selections of inductive components available anywhere:

- Power and telephony transformers, inductors, and CRT magnetics are stocked for fast delivery.
- Samples of standard products are usually shipped within 24 hours of request.
- See pages 4 and 5 for quick cross-referencing to competitor's part numbers on power transformers.
- A quick reference to our telephone components is found on page 13.

Superior Design and Construction

Prem never compromises on power transformer design details that could cause you problems down the road:

- Power transformers feature three flange design—no electrostatic shield is required.
- Anchor, insulating and crossover tapes are standard.
- Two distinct, separate windings for each primary and secondary assure excellent HIPOT capability between these dual windings.
- Prem power transformers are immersed in 100% solids epoxy resin to withstand most aqueous and solvent cleaning systems. Leads are re-tinned to ensure excellent contact.
- **Every Prem component is 100% final tested prior to shipment.**

Safety Agency Approvals

Prem has numerous products with international approvals, saving our customers the time, headaches and expense of going through the approval process:

- Prem's International Series of power transformers may be the most approved magnetic components in the world. They are usable just about everywhere.
- Our SPW-2100, 2300, 2400, 3050, 3100, 3150 and 3600 Series power transformers provide VDE or TUV approvals without changing pin dimensions from standard non-internationally approved units with the same VA ratings.
- Our line of BSI approved telephone interconnect transformers also meet FCC and DOC requirements.
- Virtually all of Prem's products are UL Recognized. Nearly every line of power transformers is also CSA approved.

Technical Assistance

Prem gives you instant access to the top professionals in the magnetic component industry. Our technical services and engineering staff are just a phone call away.

Telephone: 815-385-2700 Fax: 815-385-8578
E-mail: tech@premmag.com

The Industry's Most Comprehensive, Interactive Website: <http://www.premmag.com>

Visit our interactive, online inductive component selection guide. It features:

- Complete electrical and mechanical data on our 750+ standard products.
- The latest new product information.
- An online quotation request form.
- No registration or password required.

CUSTOM PRODUCTS

If we don't have the perfect component to meet your application, we'll design one. We also modify standard components to meet your specific applications.

ORDERING INFORMATION

Quotations

We work hard to keep our prices the lowest in the industry. Fax your requirements to our sales department at (815) 385-8578 or email them to sales@premmag.com or visit our website: <http://www.premmag.com/quote.htm>.

Lead Times

Multiple production facilities enable us to meet deadlines efficiently—from one part to one million. Call Prem customer service for delivery information on larger orders.

Delivery Scheduling

We ship small quantities immediately. Depending on order quantity, shipments can be scheduled up to 12 months from your order date. We ship as often as you wish.

Ordering

There is no minimum. On standard product orders you can cancel or decrease an order without penalty and will be billed only for the normal price at the smaller quantity you receive. You can add to any open order within a year and get the price break for the total quantity on the units remaining to be shipped from your original order.

MasterCard and VISA

Use your credit card on small orders and save any credit - check delays.

Terms and Conditions

- Net 30, FOB Warehouse in Johnsbury, IL

About Prem Magnetics

Prem Magnetics serves over 3,000 customers worldwide. Prem has multiple production facilities and offers hundreds of standard components. In addition Prem is a major supplier of custom magnetic components. All Prem products are sold factory direct with no middleman mark-ups.

PREM®

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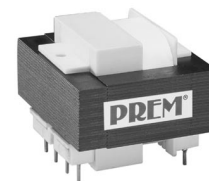
E-Mail: sales@premmag.com

Website: <http://www.premmag.com>

▲ Power Transformer Cross-Reference Guide . . Pg 4,5

▲ International Series Power Transformers . . Pg 6,7,8

Prem's International Series of power transformers are usable virtually anywhere in the world. With Prem, there is no extra charge for international approvals. Units range from 2.5 VA to 24.0 VA.



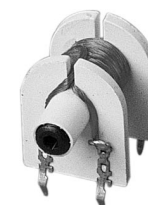
▲ Domestic Series Power Transformers Pg 9,10

Our full range of printed circuit board power transformers include low profile units from 2.5 VA up to 12 VA. Non low-profile units range from 1.1 VA up to 36 VA. All feature three flange bobbin design, no electric-static shield is required.



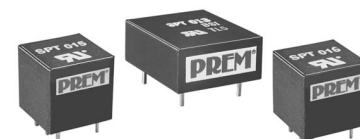
▲ 24V Primary SeriesPg 11,12

Our new SPL Series are perfect for the heating, ventilation and air conditioning (HVAC) industry.



▲ Telephony Magnetics IndexPg 13-24

Prem has one of the world's most comprehensive selections of coupling transformers, low profile coupling transformers, small board area usage, voice and data, data only, xDLS, wet units, dry units and hybrids, high crosstalk attenuation and international market magnetics.



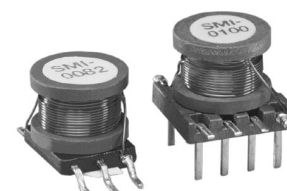
▲ CRT Display MagneticsPg 25

We offer a full line of CRT Display magnetics, including standard product dynamic and adjustable linearity coils. We also custom design a wide range of coils for CRT display applications.



▲ InductorsPg 26-30

Economy high current inductors with optional base mounting and shielded construction; ferrite power inductors – drum core type, slug core pc mounting and bobbin core, wide band shield bead ferrite chokes and surface mount inductors are all available from stock.



▲ Power Transformers Specification Formulae . .Pg 31

▲ Telcom/Audio Transformer Formulae Pg 32

I² (Int'l & Interchangable) Cross-Reference Chart

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CE Mark/LVD Capable Parts	Non-International Part(s)				
PREM	PREM	Signal	Magnetek/Triad	Stancor	Microtran/Tamura
SPW-3050	SPW-050	LP10-250	FP10-250	NA	PF2.5-10 / 3FL10-250
SPW-3051	SPW-051	LP12-200	FP12-200	NA	PF2.5-12 / 3FL12-200
SPW-3052	SPW-052	LP16-150	FP16-150	NA	PF2.5-16 / 3FL16-150
SPW-3053	SPW-053	LP20-125	FP20-125	NA	PF2.5-20 / 3FL20-125
SPW-3054	SPW-054	LP24-100	FP24-100	NA	PF2.5-24 / 3FL24-100
SPW-3061	see SPW-061	LP30-85	FP30-85	NA	PF2.5-30 / 3FL30-85
SPW-3055	SPW-055	LP34-75	FP34-75	NA	PF2.5-34 / 3FL34-75
SPW-3056	SPW-056	LP40-60	FP40-60	LB240	NA / 3FL40-60
SPW-3057	SPW-057	LP56-45	FP56-45	LB256	NA / 3FL56-45
SPW-3058	SPW-058	LP88-28	FP88-28	LB288	NA / 3FL88-28
SPW-3059	SPW-059	LP120-20	FP120-20	LB2120	NA / 3FL120-20
SPW-3060	SPW-060	LP230-10	FP230-10	LB2230	NA / 3FL230-10
SPW-3061	SPW-061	LP30-85	FP30-85	NA	PF2.5-30 / 3FL30-85
SPW-2100 or SPW-3100	SPW-100	LP10-600	FP10-600	LB610	PF6-10 / 3FL10-600
SPW-2101 or SPW-3101	SPW-101	LP12-450	FP12-450	LB612	PF6-12 / 3FL12-475
SPW-2102 or SPW-3102	SPW-102	LP16-350	FP16-350	LB616	PF6-16 / 3FL16-350
SPW-2103 or SPW-3103	SPW-103	LP20-300	FP20-300	LB620	PF6-20 / 3FL20-300
SPW-2104 or SPW-3104	SPW-104	LP24-250	FP24-250	LB624	PF6-24 / 3FL24-250
SPW-2111 or SPW-3111	see SPW-111	LP30-200	FP30-200	NA	PF6-30 / 3FL30-200
SPW-2105 or SPW-3105	SPW-105	LP34-170	FP34-170	LB634	PF6-34 / 3FL34-170
SPW-2106 or SPW-3106	SPW-106	LP40-150	FP40-150	LB640	PF6-40 / 3FL40-150
SPW-2107 or SPW-3107	SPW-107	LP56-100	FP56-100	LB656	PF6-56 / 3FL56-100
SPW-2108 or SPW-3108	SPW-108	LP88-65	FP88-65	LB688	NA / 3FL88-28
SPW-2109 or SPW-3109	SPW-109	LP120-50	FP120-50	LB6120	NA / 3FL120-50
SPW-2110 or SPW-3110	SPW-110	LP230-25	FP230-25	LB6230	NA / 3FL230-10
SPW-2111 or SPW-3111	SPW-111	LP30-200	FP30-200	NA	PF6-30 / 3FL30-200
SPW-3150	SPW-150	NA	NA	NA	NA / NA
SPW-3151	SPW-151	NA	NA	NA	NA / NA
SPW-3152	SPW-152	NA	NA	NA	NA / NA
SPW-3153	SPW-153	NA	NA	NA	NA / NA
SPW-3154	SPW-154	NA	NA	NA	NA / NA
SPW-3155	SPW-155	NA	NA	NA	NA / NA
SPW-3156	SPW-156	NA	NA	NA	NA / NA
SPW-3157	SPW-157	NA	NA	NA	NA / NA
SPW-3158	SPW-158	NA	NA	NA	NA / NA
SPW-3159	SPW-159	NA	NA	NA	NA / NA
SPW-3160	SPW-160	NA	NA	NA	NA / NA
SPW-3161	SPW-161	NA	NA	NA	NA / NA
SPW-2300	SPW-300	LP10-1200	FP10-1200	LB1210	PF12-10 / 3FL10-1200
SPW-2301	SPW-301	LP12-900	FP12-900	LB1212	PF12-12 / 3FL12-950
SPW-2302	SPW-302	LP16-700	FP16-700	LB1216	PF12-16 / 3FL16-700
SPW-2303	SPW-303	LP20-600	FP20-600	LB1220	PF12-20 / 3FL20-600
SPW-2304	SPW-304	LP24-500	FP24-500	LB1224	PF12-24 / 3FL24-500
SPW-2311	see SPW-311	LP30-400	FP30-400	NA	PF12-30 / 3FL30-400
SPW-2305	SPW-305	LP34-340	FP34-340	LB1234	PF12-34 / 3FL34-340
SPW-2306	SPW-306	LP40-300	FP40-300	LB1240	NA / 3FL40-300
SPW-2307	SPW-307	LP56-200	FP56-200	LB1256	PF12-56 / 3FL56-200
SPW-2308	SPW-308	LP88-130	FP88-130	LB1288	NA / 3FL88-130
SPW-2309	SPW-309	LP120-100	FP120-100	LB12120	NA / 3FL120-100
SPW-2310	SPW-310	LP230-50	FP230-50	LB12230	NA / 3FL230-50
SPW-2311	SPW-311	LP30-400	FP30-400	NA	PF12-30 / 3FL30-400
SPW-2400	NA	LP10-2400	NA	NA	PF24-10 / NA
SPW-2401	NA	LP12-1900	NA	NA	PF24-12 / NA
SPW-2402	NA	LP16-1500	NA	NA	PF24-16 / NA
SPW-2403	NA	LP20-1200	NA	NA	PF24-20 / NA
SPW-2404	NA	LP24-1000	NA	NA	PF24-24 / NA
SPW-2411	NA	LP30-800	NA	NA	PF24-30 / NA
SPW-2405	NA	LP34-700	NA	NA	PF24-34 / NA
SPW-2406	NA	LP40-600	NA	NA	NA / NA
SPW-2407	NA	LP56-425	NA	NA	PF24-56 / NA
SPW-3600	SPW-600-D	DST-5-10	FS10-1200	DSW510	PSD5-10 / 3FD-510
SPW-3601	SPW-601-D	DST-5-12	FS12-1000	DSW512	PSD5-12 / 3FD-512
SPW-3602	SPW-602-D	DST-5-16	FS16-800	DSW516	PSD5-16 / 3FD-516
SPW-3603	SPW-603-D	DST-5-20	FS20-600	DSW520	PSD5-20 / 3FD-520
SPW-3604	SPW-604-D	DST-5-24	FS24-500	DSW524	PSD5-24 / 3FD-524
SPW-3605	SPW-605-D	DST-5-28	FS28-420	DSW528	PSD5-28 / 3FD-528
SPW-3606	SPW-606-D	DST-5-36	FS36-350	DSW536	PSD5-36 / 3FD-536
SPW-3607	SPW-607-D	DST-5-48	FS48-250	DSW548	PSD5-48 / 3FD-548
SPW-3608	SPW-608-D	DST-5-56	FS56-220	DSW556	PSD5-56 / 3FD-556
SPW-3609	SPW-609-D	DST-5-120	FS120-100	DSW5120	PSD5-120 / 3FD-5120

N/A - To the best of our knowledge, these items are unavailable.

Power Transformers Cross Reference Chart

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PREM	Standard El		
	Stancor	Triad	Signal
SPW-350-S/D	SW/DSW 210	F/FS 10-110	ST/DST 2-10
SPW-351-S/D	SW/DSW 212	F/FS 12-090	ST/DST 2-12
SPW-352-S/D	SW/DSW 216	F/FS 16-070	ST/DST 2-16
SPW-353-S/D	SW/DSW 220	F/FS 20-055	ST/DST 2-20
SPW-354-S/D	SW/DSW 224	F/FS 24-045	ST/DST 2-24
SPW-355-S/D	SW/DSW 228	F/FS 28-040	ST/DST 2-28
SPW-356-S/D	SW/DSW 236	F/FS 36-030	ST/DST 2-36
SPW-357-S/D	SW/DSW 248	F/FS 48-023	ST/DST 2-48
SPW-358-S/D	SW/DSW 256	F/FS 56-020	ST/DST 2-56
SPW-359-S/D	SW/DSW 2120	F/FS 120-010	ST/DST 2-120
SPW-400-S/D	SW/DSW 310	F/FS 10-250	ST/DST 3-10
SPW-401-S/D	SW/DSW 312	F/FS 12-200	ST/DST 3-12
SPW-402-S/D	SW/DSW 316	F/FS 16-150	ST/DST 3-16
SPW-403-S/D	SW/DSW 320	F/FS 20-120	ST/DST 3-20
SPW-404-S/D	SW/DSW 324	F/FS 24-100	ST/DST 3-24
SPW-405-S/D	SW/DSW 328	F/FS 28-85	ST/DST 3-28
SPW-406-S/D	SW/DSW 336	F/FS 36-65	ST/DST 3-36
SPW-407-S/D	SW/DSW 348	F/FS 48-050	ST/DST 3-48
SPW-408-S/D	SW/DSW 356	F/FS 56-045	ST/DST 3-56
SPW-409-S/D	SW/DSW 3120	F/FS 120-020	ST/DST 3-120
SPW-500-S/D	SW/DSW 410	F/FS 10-600	ST/DST 4-10
SPW-501-S/D	SW/DSW 412	F/FS 12-500	ST/DST 4-12
SPW-502-S/D	SW/DSW 416	F/FS 16-400	ST/DST 4-16
SPW-503-S/D	SW/DSW 420	F/FS 20-300	ST/DST 4-20
SPW-504-S/D	SW/DSW 424	F/FS 24-250	ST/DST 4-24
SPW-505-S/D	SW/DSW 428	F/FS 28-200	ST/DST 4-28
SPW-506-S/D	SW/DSW 436	F/FS 36-170	ST/DST 4-36
SPW-507-S/D	SW/DSW 448	F/FS 48-125	ST/DST 4-48
SPW-508-S/D	SW/DSW 456	F/FS 56-110	ST/DST 4-56
SPW-509-S/D	SW/DSW 4120	F/FS 120-050	ST/DST 4-120
SPW-600-S/D	SW/DSW 510	F/FS 10-1200	ST/DST 5-10
SPW-601-S/D	SW/DSW 512	F/FS 12-1000	ST/DST 5-12
SPW-602-S/D	SW/DSW 516	F/FS 16-800	ST/DST 5-16
SPW-603-S/D	SW/DSW 520	F/FS 20-600	ST/DST 5-20
SPW-604-S/D	SW/DSW 524	F/FS 24-500	ST/DST 5-24
SPW-605-S/D	SW/DSW 528	F/FS 28-420	ST/DST 5-28
SPW-606-S/D	SW/DSW 536	F/FS 36-350	ST/DST 5-36
SPW-607-S/D	SW/DSW 548	F/FS 48-250	ST/DST 5-48
SPW-608-S/D	SW/DSW 556	F/FS 56-220	ST/DST 5-56
SPW-609-S/D	SW/DSW 5120	F/FS 120-100	ST/DST 5-120
SPW-610-S/D	SW/DSW 610	F/FS 10-2000	ST/DST 6-10
SPW-611-S/D	SW/DSW 612	F/FS 12-1600	ST/DST 6-12
SPW-612-S/D	SW/DSW 616	F/FS 16-1250	ST/DST 6-16
SPW-613-S/D	SW/DSW 620	F/FS 20-1000	ST/DST 6-20
SPW-614-S/D	SW/DSW 624	F/FS 24-800	ST/DST 6-24
SPW-615-S/D	SW/DSW 628	F/FS 28-700	ST/DST 6-28
SPW-616-S/D	SW/DSW 636	F/FS 36-550	ST/DST 6-36
SPW-617-S/D	SW/DSW 648	F/FS 48-400	ST/DST 6-48
SPW-618-S/D	SW/DSW 656	F/FS 56-350	ST/DST 6-56
SPW-619-S/D	SW/DSW 6120	F/FS 120-160	ST/DST 6-120
SPW-620-S/D	N/A	F/FS 10-3600	ST/DST 7-10
SPW-621-S/D	N/A	F/FS 12-2850	ST/DST 7-12
SPW-622-S/D	N/A	F/FS 16-2250	ST/DST 7-16
SPW-623-S/D	N/A	F/FS 20-1800	ST/DST 7-20
SPW-624-S/D	N/A	F/FS 24-1500	ST/DST 7-24
SPW-625-S/D	N/A	F/FS 28-1300	ST/DST 7-28
SPW-626-S/D	N/A	F/FS 36-1000	ST/DST 7-36
SPW-627-S/D	N/A	F/FS 48-750	ST/DST 7-48
SPW-628-S/D	N/A	F/FS 56-650	ST/DST 7-56
SPW-629-S/D	N/A	F/FS 120-300	ST/DST 7-120

PREM	Low Profile		
	Stancor	Triad	Signal
SPW-050	N/A	FP 10-250	LP 10-250
SPW-051	N/A	FP 12-200	LP 12-200
SPW-052	N/A	FP 16-150	LP 16-150
SPW-053	N/A	FP 20-125	LP 20-125
SPW-054	N/A	FP 24-100	LP 24-100
SPW-055	N/A	FP 34-75	LP 34-75
SPW-056	LBZ xx	FP 40-60	LP 40-60
SPW-057	LBZ xx	FP 56-45	LP 56-45
SPW-058	LBZ xx	FP 88-28	LP 88-28
SPW-059	LBZ xx	FP 120-20	LP 120-20
SPW-060	LBZ xx	FP 230-10	LP 230-10
SPW-061	N/A	FP 30-85	LP 30-85
SPW-100	LB 610	FP 10-600	LP 10-600
SPW-101	LB 612	FP 12-475	LP 12-450
SPW-102	LB 616	FP 16-375	LP 16-350
SPW-103	LB 620	FP 20-300	LP 20-300
SPW-104	LB 624	FP 24-250	LP 24-250
SPW-105	LB 634	FP 34-170	LP 34-170
SPW-106	LB 640	FP 40-150	LP 40-150
SPW-107	LB 656	FP 56-100	LP 56-100
SPW-108	LB 688	FP 88-65	LP 88-65
SPW-109	LB 6120	FP 120-50	LP 120-50
SPW-110	LB 6230	FP 230-25	LP 230-25
SPW-111	N/A	FP 30-200	LP 30-200
SPW-300	LB 1210	FP 10-1200	LP 10-1200
SPW-301	LB 1212	FP 12-950	LP 12-900
SPW-302	LB 1216	FP 16-750	LP 16-700
SPW-303	LB 1220	FP 20-600	LP 20-600
SPW-304	LB 1224	FP 24-500	LP 24-500
SPW-305	LB 1234	FP 34-340	LP 34-340
SPW-306	LB 1240	FP 40-300	LP 40-300
SPW-307	LB 1256	FP 56-200	LP 56-200
SPW-308	LB 1288	FP 88-130	LP 88-130
SPW-309	LB 12120	FP 120-100	LP 120-100
SPW-310	LB 12230	FP 230-50	LP 230-50
SPW-311	N/A	FP 30-400	LP 30-400

N/A - To the best of our knowledge, these items are unavailable.

PREM	International Series	
	PC Transformer Corp.	Signal
SPW-1000	VPC3-10	14A-2.5R-10
SPW-1001	VPC3-12	14A-2.5R-12
SPW-1002	VPC3-16	14A-2.5R-16
SPW-1003	VPC3-20	14A-2.5R-20
SPW-1004	VPC3-24	14A-2.5R-24
SPW-1005	VPC3-28	14A-2.5R-28
SPW-1006	VPC3-36	14A-2.5R-36
SPW-1100	VPC4-10	14A-5.0R-10
SPW-1101	VPC4-12	14A-5.0R-12
SPW-1102	VPC4-16	14A-5.0R-16
SPW-1103	VPC4-20	14A-5.0R-20
SPW-1104	VPC4-24	14A-5.0R-24
SPW-1105	VPC4-28	14A-5.0R-28
SPW-1106	VPC4-36	14A-5.0R-36
SPW-1200	VPC5-10	14A-10R-10
SPW-1201	VPC5-12	14A-10R-12
SPW-1202	VPC5-16	14A-10R-16
SPW-1203	VPC5-20	14A-10R-20
SPW-1204	VPC5-24	14A-10R-24
SPW-1205	VPC5-28	14A-10R-28
SPW-1206	VPC5-36	14A-10R-36
SPW-1300	VPC6-10	14A-20-10
SPW-1301	VPC6-12	14A-20-12
SPW-1302	VPC6-16	14A-20-16
SPW-1303	VPC6-20	14A-20-20
SPW-1304	VPC6-24	14A-20-24
SPW-1305	VPC6-28	14A-20-28
SPW-1306	VPC6-36	14A-20-36

N/A - To the best of our knowledge, these items are unavailable.

International Series-Low Profile (Economy)

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SPW-3050/SPW-3100/SPW-3150 Series Power Transformers

EN 60950 Certified

2.5VA, 6.0VA, & 9.0VA Low Profile Transformers Are Interchangeable with Non-European Units

▲ Superior Design

- Interchangeable with non-VDE units such as Prem's SPW-050, SPW-100 and SPW-150 series.
- Shrouded primaries/three flange bobbin
- No electrostatic shield required.
- Immersed in 100% solids epoxy to withstand most aqueous and solvent cleaning systems.
- Anchor, insulating and crossover tapes.
- Two distinct, separate windings for each primary and secondary assure excellent HIPOT capability between these dual windings.
- Bobbin and shroud material - UL94V0.

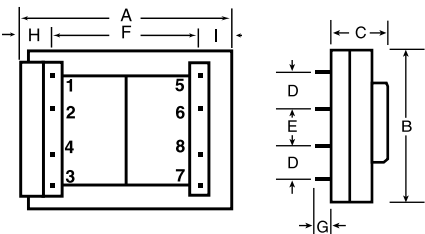
▲ 100% Final Tested

- Every transformer is tested on automated panels for induced voltage (shorted turns), exciting current, open circuit voltage (turns ratio), polarity (phasing) and dielectric strength.
- 4500 VRMS dielectric strength (HIPOT) pri - sec



**SPW-3050
THRU
SPW-3161**
2.5, 6.0, 9.0 VA

C Dimension:
SPW-3050 .720"
(18.28)
SPW-3100 .895"



External connections:
Parallel
1-3, 2-4, 5-7, 6-8
Series
2-3, 6-7

Pin Dimension:
.025" Sq. (.635)

Primary Voltages:
115/230 Volts
50/60 Hz

Note: Primary and secondary windings are designed to be used as one primary and one secondary winding with either parallel or series connection

UL - #1950, #1585 Class II, III, #1446
CSA - #22.2 No. 950
IEC - #950
VDE - #0805 (EN 60950)
TUV - EN 60950
UL - #1585 Class II, III, #1446

SPW-3050 and SPW-3100 series
SPW-3150 series

VA	Part No.	Secondary RMS Rating	
		Parallel	Series
2.5	SPW-3050	5V @ 500 mA	10V CT @ 250 mA
	SPW-3051	6.3V @ 400 mA	12.6V CT @ 200 mA
	SPW-3052	8V @ 300 mA	16V CT @ 150 mA
	SPW-3053	10V @ 250 mA	20V CT @ 125 mA
	SPW-3054	12V @ 200 mA	24V CT @ 100 mA
	SPW-3055	17V @ 150 mA	34V CT @ 75 mA
	SPW-3056	20V @ 120 mA	40V CT @ 60 mA
	SPW-3057	28V @ 90 mA	56V CT @ 45 mA
	SPW-3058*	44V @ 56 mA	88V CT @ 28 mA
	SPW-3059*	60V @ 40 mA	120V CT @ 20 mA
	SPW-3060*	115V @ 20 mA	230V CT @ 10 mA
	SPW-3061	15V @ 170 mA	30V CT @ 85 mA
	SPW-3100	5V @ 1.2 A	10V CT @ 600 mA
	SPW-3101	6.3V @ 900 mA	12.6V CT @ 450 mA
6.0	SPW-3102	8V @ 700 mA	16V CT @ 350 mA
	SPW-3103	10V @ 600 mA	20V CT @ 300 mA
	SPW-3104	12V @ 500 mA	24V CT @ 250 mA
	SPW-3105	17V @ 340 mA	34V CT @ 170 mA
	SPW-3106	20V @ 300 mA	40V CT @ 150 mA
	SPW-3107	28V @ 200 mA	56V CT @ 100 mA
	SPW-3108*	44V @ 130 mA	88V CT @ 65 mA
	SPW-3109*	60V @ 100 mA	120V CT @ 50 mA
	SPW-3110*	115V @ 50 mA	230V CT @ 25 mA
	SPW-3111	15V @ 400 mA	30V CT @ 200 mA
	SPW-3150	5V @ 1.8 A	10V CT @ 900 mA
9.0	SPW-3151	6.3V @ 1.43 A	12.6V CT @ 715 mA
	SPW-3152	8V @ 1.125 A	16V CT @ 562 mA
	SPW-3153	10V @ 900 mA	20V CT @ 450 mA
	SPW-3154	12V @ 750 mA	24V CT @ 375 mA
	SPW-3155	17V @ 530 mA	34V CT @ 265 mA
	SPW-3156	20V @ 450 mA	40V CT @ 225 mA
	SPW-3157	28V @ 322 mA	56V CT @ 161 mA
	SPW-3158*	44V @ 204 mA	88V CT @ 102 mA
	SPW-3159*	60V @ 150 mA	120V CT @ 75 mA
	SPW-3160*	115V @ 78 mA	230V CT @ 39 mA
	SPW-3161	15V @ 600 mA	30V CT @ 300 mA

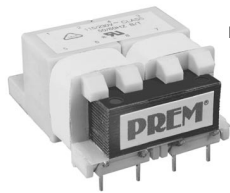
* Voltage rating cannot be approved under UL 1585

PREM Dimensions		Fuse Types/Values Used to Gain Safety Agency Component Recognition(s)				
A	2.030" (51.56)	SPW Series	3050	3100	3150	
B	1.510" (38.35)	Circuit Location		Primary	Primary	
C	See Drawing	Fuse P/N	115Vin	218.040	313.125	
D	0.375" (9.53)					230Vin
E	0.375" (9.53)		Fuse Manufacturer		L	
F	1.600" (40.64)		L = Littlefuse, Inc.; Des Plaines, Illinois			
G	0.200" (5.08)					
H	0.230" (5.84)					
I	0.200" (5.08)					

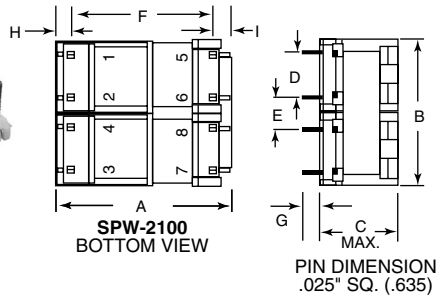
() = mm

International Series-Low Profile PC

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SPW-2100
6.0 VA

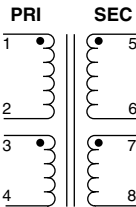


Note: Primary and secondary windings are designed to be used as one primary and one secondary winding with either parallel or series connection only.

• Indicates like polarity

() = mm

External connections:
Parallel 1-3, 2-4, 5-7,
6-8



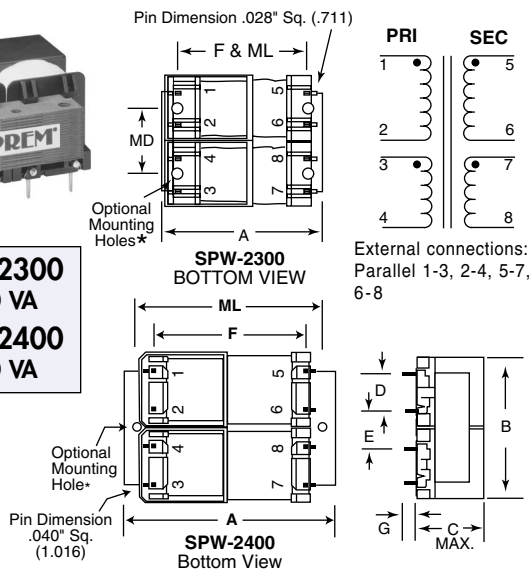
HIPOT rating: 4500 VRMS from primaries to secondaries



UL - #1950, #1585 (Class II, III), #1446
CSA - #22.2 No. 234M90
IEC - #950
VDE - #0805 (EN 60950)



SPW-2300
12.0 VA
SPW-2400
24.0 VA



External connections:
Parallel 1-3, 2-4, 5-7,
6-8

Note: Primary and secondary windings are designed to be used as one primary and one secondary winding with either parallel or series connection only.

* Refer to Technical Bulletin #214 • Indicates like polarity
HIPOT rating: 4500 VRMS from primaries to secondaries.

Safety Agency Approvals SPW-2300

UL - #1950, #1585 (Class II, III), #1446
IEC - #950
VDE - #0805 (EN 60950)

Safety Agency Approvals SPW-2400

UL - #1950, #1585 (Class II, III), #1446
CSA - #22.2 No. 234M90
IEC - #950
VDE - #0805 (EN 60950)

() = mm

PREM	SPW-2100	SPW-2300	SPW-2400
VA	6.0	12.0	24.0
A	1.950" (49.53)	2.500" (63.50)	2.870" (72.90)
B	1.562" (39.69)	2.000" (50.80)	2.250" (57.15)
C	.890" (22.61)	1.065" (27.05)	1.300" (33.02)
D	.375" (9.53)	.500" (12.70)	0.600" (15.24)
E	.375" (9.53)	.500" (12.70)	0.530" (13.46)
F	1.600" (40.64)	2.00" (50.80)	1.900" (48.26)
G	.200" (5.08)	.200" (5.08)	0.200" (5.08)
H	.210" (5.33)	•	•
I	.140" (3.56)	•	•
MD	•	1.000" (25.4)	•
ML	•	2.000" (50.80)	2.410" (61.21)
Screw Size	•	#4	#4

() = mm

Fuse Types/Values Used to Gain Safety Agency Component Recognition(s)

SPW-Part	2100-2111	2300-2311	2401-2411 ¹
Circuit Location	Primary	Primary	Primary ¹
Fuse P/N	115Vin 218.100 230Vin 218.050	218.200 218.100	218.400 ¹ 218.200 ¹
Fuse Mfr	L ²	L ²	L ²

Notes: ¹- SPW-2400 Req's Sec. Fusing - Contact Factory; ²- Littlefuse, Inc.; Des Plaines, IL

VA	PART NUMBERS 115V/230 Dual Primaries	Secondary	
		PARALLEL	SERIES
6.0	SPW-2100	5V @ 1.2A	10V CT @ 600 mA
	SPW-2101	6.3V @ 900 mA	12.6V CT @ 450 mA
	SPW-2102	8V @ 700 mA	16V CT @ 350 mA
	SPW-2103	10V @ 600 mA	20V CT @ 300 mA
	SPW-2104	12V @ 500 mA	24V CT @ 250 mA
	SPW-2105	17V @ 340 mA	34V CT @ 170 mA
	SPW-2106	20V @ 300 mA	40 V CT @ 150 mA
	SPW-2107	28V @ 200 mA	56V CT @ 100 mA
	SPW-2108*	44V @ 130 mA	88V CT @ 65 mA
	SPW-2109*	60V @ 100 mA	120V CT @ 50 mA
	SPW-2110*	115V @ 50 mA	230V CT @ 25 mA
12.0	SPW-2111	15V @ 400 mA	30V CT @ 200 mA
	SPW-2300	5V @ 2.4A	10V CT @ 1.2A
	SPW-2301	6.3V @ 1.8A	12.6V CT @ 900 mA
	SPW-2302	8V @ 1.4A	16V CT @ 700 mA
	SPW-2303	10V @ 1.2A	20V CT @ 600 mA
	SPW-2304	12V @ 1.0A	24V CT @ 500 mA
	SPW-2305	17V @ 680 mA	34V CT @ 340 mA
	SPW-2306	20V @ 600 mA	40V CT @ 300 mA
	SPW-2307	28V @ 400 mA	56V CT @ 200 mA
	SPW-2308*	44V @ 260 mA	88V CT @ 130 mA
	SPW-2309*	60V @ 200 mA	120V CT @ 100 mA
24.0	SPW-2310*	115V @ 100 mA	230V CT @ 50 mA
	SPW-2311	15V @ 800 mA	30V CT @ 400 mA
	SPW-2400	5V @ 4.80A	10V CT @ 2.4 A
	SPW-2401	6.3V @ 3.80A	12.6V CT @ 1.9A
	SPW-2402	8V @ 3.0A	16V CT @ 1.5A
	SPW-2403	10V @ 2.4A	20V CT @ 1.2A
	SPW-2404	12V @ 2.0A	24V CT @ 1.0A
	SPW-2405	17V @ 1.40A	34V CT @ 700 mA
	SPW-2406	20V @ 1.2A	40V CT @ 600 mA
	SPW-2407	28V @ 850 mA	56V CT @ 425 mA
	SPW-2408*	44V @ 540 mA	88V CT @ 270 mA
	SPW-2409*	60V @ 400 mA	120V CT @ 200 mA
	SPW-2410*	115V @ 200 mA	230V CT @ 100 mA
	SPW-2411	15V @ 1.6 A	30V CT @ 800 mA

*Voltage ratings cannot be approved under UL

International Series-Standard Profile

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- Shrouded primaries/three flange bobbins
- No electrostatic shield required.
- Immersed in 100% solids epoxy to withstand most aqueous and solvent cleaning systems.
- Anchor, insulating and crossover tapes, and shrouded primaries.
- Two distinct, separate windings for each primary and secondary assure excellent HIPOT capability between these dual windings.
- Bobbin and shroud material - UL94V0.
- SPW-3600 Series interchangeable with non-VDE units such as Prem's SPW-600-D Series.

▲ 100% Final Tested

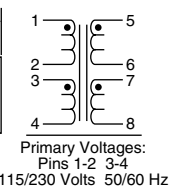
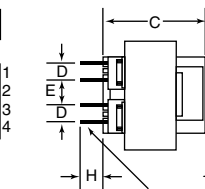
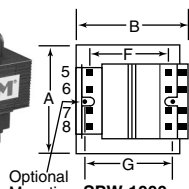
- Every transformer is tested on automated panels for induced voltage (shorted turns), exciting current, open circuit voltage (turns ratio), polarity (phasing) and dielectric strength.
- 4500 VRMS dielectric strength (HIPOT) pri - sec

(1) Does not apply to SPW-3600 Series (2) Applies only to SPW-3600 Series

Fuse Types/Values Used to Gain Safety Agency Component Recognition(s)

SPW-Part		1000-1006	1100-1106	1200-1206	1301-1306 ¹	3600-3609
Circuit Location		Primary	Primary	Primary	Primary ¹	Primary
Fuse P/N	115Vin	218.063	MDL-1/8	MDL-2/10	MDL-3/10 ¹	218.200
	230Vin	218.032	MDL-1/16	MDL-1/10	MDL-15/100 ¹	218.100
Fuse Mfr		L ²	B ³	B ³	B ³	L ²

Notes: ¹ SPW-1300 Req's Sec. Fusing - Contact Factory; ² L=Littlefuse, Inc.; Des Plaines, IL; ³ Bussmann/Cooper; St.Louis, MO



SPW-1000
2.5 VA
SPW-1100
5.0 VA
SPW-1200
10.0 VA
SPW-1300
20.0 VA
SPW-3600
12.0 VA

- * Refer to Technical Bulletin #214
- Indicates like polarity

Note: Primary and secondary windings are designed to be used as one primary and one secondary winding with either parallel or series connection.



UL - #1950, #1585 Class II, III, #1446

⁽¹⁾CSA - #22.2 No. 66 - 1988 General Purpose

IEC - #950

VDE - #0805, EN 60950

⁽²⁾UL/C-UL - tested to CSA 22.2 No. 234M90

(1) Does not apply to SPW-3600 Series (2) Applies only to SPW-3600 Series

VA	Part No.	Secondary RMS Rating	
		Parallel	Series
2.5	SPW-1000	5V @ 500 mA	10V CT @ 250 mA
	SPW-1001	6.3V @ 400 mA	12.6V CT @ 200 mA
	SPW-1002	8V @ 300 mA	16V CT @ 150 mA
	SPW-1003	10V @ 240 mA	20V CT @ 120 mA
	SPW-1004	12V @ 200 mA	24V CT @ 100 mA
	SPW-1005	14V @ 180 mA	28V CT @ 90 mA
5.0	SPW-1006	18V @ 140 mA	36V CT @ 70 mA
	SPW-1100	5V @ 1.0A	10V CT @ 500 mA
	SPW-1101	6.3V @ 800 mA	12.6V CT @ 400 mA
	SPW-1102	8V @ 620 mA	16V CT @ 310 mA
	SPW-1103	10V @ 500 mA	20V CT @ 250 mA
	SPW-1104	12V @ 420 mA	24V CT @ 210 mA
10.0	SPW-1105	14V @ 360 mA	28V CT @ 180 mA
	SPW-1106	18V @ 280 mA	36V CT @ 140 mA
	SPW-1200	5V @ 2.0A	10V CT @ 1.0A
	SPW-1201	6.3V @ 1.6A	12.6V CT @ 800 mA
	SPW-1202	8V @ 1.25A	16V CT @ 620 mA
	SPW-1203	10V @ 1.0A	20V CT @ 500 mA
12.0	SPW-1204	12V @ 840 mA	24V CT @ 420 mA
	SPW-1205	14V @ 720 mA	28V CT @ 360 mA
	SPW-1206	18V @ 560 mA	36V CT @ 280 mA
	SPW-3600	5V @ 2.4A	10V CT @ 1.2A
	SPW-3601	6.3V @ 2.0A	12.6V CT @ 1.0A
	SPW-3602	8V @ 1.6A	16V CT @ 800 mA
20.0	SPW-3603	10V @ 1.2A	20V CT @ 600 mA
	SPW-3604	12V @ 1.0A	24V CT @ 500 mA
	SPW-3605	14V @ 850 mA	28V CT @ 425 mA
	SPW-3606	18V @ 700 mA	36V CT @ 350 mA
	SPW-3607	24V @ 500A	48V CT @ 250 mA
	SPW-3608	28V @ 440 mA	56V CT @ 220 mA
20.0	SPW-3609*	60V @ 200 mA	120V CT @ 100 mA
	SPW-1300	5V @ 4.0A	10V CT @ 2.0A
	SPW-1301	6.3V @ 3.2A	12.6V CT @ 1.6A
	SPW-1302	8V @ 2.5A	16V CT @ 1.25A
	SPW-1303	10V @ 2.0A	20V CT @ 1.0A
	SPW-1304	12V @ 1.66A	24V CT @ 830mA
20.0	SPW-1305	14V @ 1.44A	28V CT @ 720 mA
	SPW-1306	18V @ 1.12A	36V CT @ 560 mA

PREM	SPW-1000	SPW-1100	SPW-1200	SPW-1300	SPW-3600
VA	2.5	5.0	10.0	20.0	12.0
A	1.625" (41.28)	1.625" (41.28)	1.875" (47.63)	2.250" (57.15)	1.875" (47.63)
B	1.440" (36.58)	1.440" (36.58)	1.585" (40.26)	1.875" (47.63)	1.600" (40.64)
C	1.125" (28.58)	1.375" (34.93)	1.375" (34.93)	1.625" (41.28)	1.630" (41.40)
D	0.200" (5.08)	0.200" (5.08)	0.200" (5.08)	0.400" (10.16)	0.300" (7.62)
E	0.250" (6.35)	0.400" (10.16)	0.400" (10.16)	0.400" (10.16)	0.400" (10.16)
F	1.000" (25.40)	1.000" (25.40)	1.140" (28.96)	1.460" (37.08)	1.410" (35.81)
G	1.062" (26.97)	1.062" (26.97)	1.250" (31.75)	1.500" (38.10)	1.250" (31.75)
Screw Size	#4	#4	#4	#4	#4
H	0.187"min. (4.75)	0.187"min. (4.75)	0.187"min. (4.75)	0.187"min (4.75)	0.250"min (6.35)
Pin Size	0.025"sq. (.635 sq.)	0.025"sq. (.635 sq.)	0.036"sq. (.914 sq.)	0.036"sq. (.914 sq.)	.020 x .041" (0.508 x 1.04)

() = mm * Voltage rating cannot be approved under UL 1585

Industry Standard/U.S. Domestic Series-Low Profile

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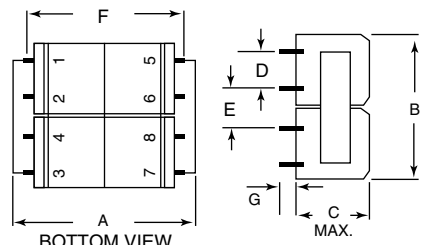
- Three flange bobbin design.
- No electrostatic shield required.
- Anchor, insulating and crossover tapes.
- Two distinct, separate windings for each primary and secondary assure excellent HIPOT capability between these dual winding.
- Immersed in 100% solids epoxy resin to withstand most aqueous and solvent cleaning systems.

▲ 100% Final Tested

- Every single transformer is tested on automated panels for induced voltage (shorted turns), exciting current, open circuit voltage (turns ratio), polarity (phasing) and dielectric strength.

Note: Other primary and secondary voltages may be custom designed to your specifications. Since 12 terminals are available,





BOTTOM VIEW

PIN DIMENSION
.020" X .041"
(.508 X 1.041)

SPW-050
2.5 VA

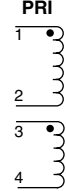
SPW-100
6.0 VA

SPW-150
9.0 VA

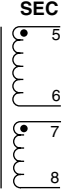
SPW-300
12.0 VA

External connections:
Parallel 1-3, 2-4, 5-7,
6-8

PRI



SEC



• Indicates like polarity () = mm

HIPOT rating: 1500 VRMS from primaries to secondaries




UL - #506, #1446

CSA - #22.2 No. 66 - 1956 General Purpose

PREM	SPW-050	SPW-100	SPW-150	SPW-300
VA	2.5	6.0	9.0	12.0
A	1.875" (47.63)	1.875" (47.63)	1.875" (47.63)	2.500" (63.50)
B	1.562" (39.69)	1.562" (39.69)	1.562" (39.69)	2.000" (50.80)
C	.660" (16.76)	.850" (21.59)	1.080" (27.43)	1.065" (27.05)
D	.375" (9.53)	.375" (9.53)	.375" (9.53)	.500" (12.70)
E	.375" (9.53)	.375" (9.53)	.375" (9.53)	.500" (12.70)
F	1.600" (40.64)	1.600" (40.64)	1.600" (40.64)	2.00" (50.80)
G	.200" (5.08)	.200" (5.08)	.200" (5.08)	.200" (5.08)

() = mm

VA	PART NUMBERS 115V/230 Dual Primaries	Secondary	
	DOMESTIC-U.S./CANADA	PARALLEL	SERIES
2.5	SPW-050	5V @ 500 mA	10V CT @ 250 mA
	SPW-051	6.3V @ 400 mA	12.6V CT @ 200 mA
	SPW-052	8V @ 300 mA	16V CT @ 150mA
	SPW-053	10V @ 250 mA	20V CT @ 125 mA
	SPW-054	12V @ 200 mA	24V CT @ 100 mA
	SPW-055	17V @ 150 mA	34V CT @ 75 mA
	SPW-056	20V @ 120 mA	40V CT @ 60 mA
	SPW-057	28V @ 90 mA	56V CT @ 45 mA
	SPW-058	44V @ 56 mA	88V CT @ 28 mA
	SPW-059	60V @ 40 mA	120V CT @ 20 mA
	SPW-060	115V @ 20 mA	230V CT @ 10 mA
	SPW-061	15V @ 170 mA	30V CT @ 85 mA
6.0	SPW-100	5V @ 1.2A	10V CT @ 600 mA
	SPW-101	6.3V @ 900 mA	12.6V CT @ 450 mA
	SPW-102	8V @ 700 mA	16V CT @ 350 mA
	SPW-103	10V @ 600 mA	20V CT @ 300 mA
	SPW-104	12V @ 500 mA	24V CT @ 250 mA
	SPW-105	17V @ 340 mA	34V CT @ 170 mA
	SPW-106	20V @ 300 mA	40 V CT @ 150 mA
	SPW-107	28V @ 200 mA	56V CT @ 100 mA
	SPW-108	44V @ 130 mA	88V CT @ 65 mA
	SPW-109	60V @ 100 mA	120V CT @ 50 mA
	SPW-110	115V @ 50 mA	230V CT @ 25 mA
	SPW-111	15V @ 400 mA	30V CT @ 200 mA
9.0	SPW-150	5V @ 1.80A	10V CT @ 900 mA
	SPW-151	6.3V @ 1.43A	12.6V CT @ 715 mA
	SPW-152	8V @ 1.125A	16V CT @ 562 mA
	SPW-153	10V @ 900 mA	20V CT @ 450 mA
	SPW-154	12V @ 750 mA	24V CT @ 375 mA
	SPW-155	17V @ 530 mA	34V CT @ 265 mA
	SPW-156	20V @ 450 mA	40V CT @ 225 mA
	SPW-157	28V @ 322 mA	56V CT @ 161 mA
	SPW-158	44V @ 204 mA	88V CT @ 102 mA
	SPW-159	60V @ 150 mA	120V CT @ 75 mA
	SPW-160	115V @ 78 mA	230V CT @ 39 mA
	SPW-161	15V @ 600 mA	30V CT @ 300 mA
12.0	SPW-300	5V @ 2.4A	10V CT @ 1.2A
	SPW-301	6.3V @ 1.8A	12.6V CT @ 900 mA
	SPW-302	8V @ 1.4A	16V CT @ 700 mA
	SPW-303	10V @ 1.2A	20V CT @ 600 mA
	SPW-304	12V @ 1.0A	24V CT @ 500 mA
	SPW-305	17V @ 680 mA	34V CT @ 340 mA
	SPW-306	20V @ 600 mA	40V CT @ 300 mA
	SPW-307	28V @ 400 mA	56V CT @ 200 mA
	SPW-308	44V @ 260 mA	88V CT @ 130 mA
	SPW-309	60V @ 200 mA	120V CT @ 100 mA
	SPW-310	115V @ 100 mA	230V CT @ 50 mA
	SPW-311	15V @ 800 mA	30V CT @ 400 mA

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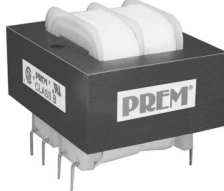
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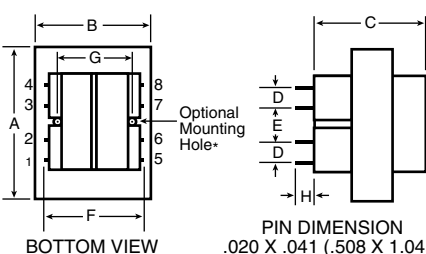
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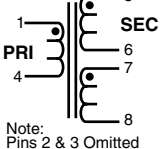


BOTTOM VIEW

PIN DIMENSION
.020 X .041 (.508 X 1.041)

SPW-350 to SPW-620 Series
1.1 to 36 VA

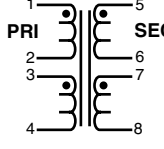
Single Primary (-S)



1 5
PRI SEC
4 7
8

Note: Pins 2 & 3 Omitted

Dual Primary (-D)



1 5
PRI SEC
2 7
3 8
4

• Indicates like polarity () = mm

* Refer to Technical Bulletin #214
HIPOT rating: 2500 VRMS from primaries to secondaries




UL - #506, #1446
CSA - #22.2 No. 66 - 1956 General Purpose

Note: Other primary and secondary voltages may be custom-designed to your specifications.

PREM	SPW-350	SPW-400	SPW-500	SPW-600	SPW-610	SPW-620
VA	1.1	2.4	6.0	12.0	20.0	36.0
A	1.375" (34.93)	1.375" (34.93)	1.625" (41.28)	1.875" (47.63)	2.250" (57.15)	2.625" (66.68)
B	1.125" (28.58)	1.125" (28.58)	1.312" (33.32)	1.562" (39.69)	1.875" (47.63)	2.187" (55.55)
C	.9370" (23.81)	1.187" (30.15)	1.290" (32.77)	1.437" (36.51)	1.410" (35.81)	1.562" (39.69)
D	.2500" (6.35)	.2500" (6.35)	.2500" (6.35)	.3000" (7.62)	.3000" (7.62)	.4000" (10.16)
E	.2500" (6.35)	.2500" (6.35)	.3500" (8.89)	.4000" (10.16)	.4000" (10.16)	.4000" (10.16)
F	1.200" (30.48)	1.200" (30.48)	1.280" (32.51)	1.410" (35.81)	1.600" (40.64)	1.850" (46.99)
G	N/A	N/A	1.062" (26.99)	1.250" (31.75)	1.500" (38.10)	NOTE
Screw Size	N/A	N/A	#4	#4	#4	#6
H	.2000" (5.08)	.2000" (5.08)	.2000" (5.08)	.2000" (5.08)	.2000" (5.08)	.1870" (4.75)

*Primary Voltage - S (115V) - D (115/230V)
() = mm

Note: 4 corner mounting holes on 2.187" (55.55mm)
x 1.750" (44.45mm) centers. For additional information,

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VA	Single 115V 6 pin	Dual 115/230V 8 pin	Parallel	Series
1.1	SPW-350-S	SPW-350-D	5V @ 220 mA	10V CT @ 110 mA
	SPW-351-S	SPW-351-D	6.3V @ 180 mA	12.6V CT @ 90 mA
	SPW-352-S	SPW-352-D	8V @ 140 mA	16V CT @ 70 mA
	SPW-353-S	SPW-353-D	10V @ 110 mA	20V CT @ 55 mA
	SPW-354-S	SPW-354-D	12V @ 90 mA	24V CT @ 45 mA
	SPW-355-S	SPW-355-D	14V @ 80 mA	28V CT @ 40 mA
	SPW-356-S	SPW-356-D	18V @ 60 mA	36V CT @ 30 mA
	SPW-357-S	SPW-357-D	24V @ 46 mA	48V CT @ 23 mA
	SPW-358-S	SPW-358-D	28V @ 40 mA	56V CT @ 20 mA
	SPW-359-S	SPW-359-D	60V @ 20 mA	120V CT @ 10 mA
2.4	SPW-400-S	SPW-400-D	5V @ 500 mA	10V CT @ 250 mA
	SPW-401-S	SPW-401-D	6.3V @ 400 mA	12.6V CT @ 200 mA
	SPW-402-S	SPW-402-D	8V @ 300 mA	16V CT @ 150 mA
	SPW-403-S	SPW-403-D	10V @ 240 mA	20V CT @ 120 mA
	SPW-404-S	SPW-404-D	12V @ 200 mA	24V CT @ 100 mA
	SPW-405-S	SPW-405-D	14V @ 170 mA	28V CT @ 85 mA
	SPW-406-S	SPW-406-D	18V @ 130 mA	36V CT @ 65 mA
	SPW-407-S	SPW-407-D	24V @ 100 mA	48V CT @ 50 mA
	SPW-408-S	SPW-408-D	28V @ 90 mA	56V CT @ 45 mA
	SPW-409-S	SPW-409-D	60V @ 40 mA	120V CT @ 20 mA
6.0	SPW-500-S	SPW-500-D	5V @ 1.2A	10V CT @ 600 mA
	SPW-501-S	SPW-501-D	6.3V @ 1.0A	12.6V CT @ 500 mA
	SPW-502-S	SPW-502-D	8V @ 800 mA	16V CT @ 400 mA
	SPW-503-S	SPW-503-D	10V @ 600 mA	20V CT @ 300 mA
	SPW-504-S	SPW-504-D	12V @ 500 mA	24V CT @ 250 mA
	SPW-505-S	SPW-505-D	14V @ 400 mA	28V CT @ 200 mA
	SPW-506-S	SPW-506-D	18V @ 340 mA	36V CT @ 170 mA
	SPW-507-S	SPW-507-D	24V @ 250 mA	48V CT @ 125 mA
	SPW-508-S	SPW-508-D	28V @ 220 mA	56V CT @ 110 mA
	SPW-509-S	SPW-509-D	60V @ 100 mA	120V CT @ 50 mA
12.0	SPW-600-S	SPW-600-D	5V @ 2.4A	10V CT @ 1.2A
	SPW-601-S	SPW-601-D	6.3V @ 2.0A	12.6V CT @ 1.0A
	SPW-602-S	SPW-602-D	8V @ 1.6A	16V CT @ 800 mA
	SPW-603-S	SPW-603-D	10V @ 1.2A	20V CT @ 600 mA
	SPW-604-S	SPW-604-D	12V @ 1.0A	24V CT @ 500 mA
	SPW-605-S	SPW-605-D	14V @ 840 mA	28V CT @ 420 mA
	SPW-606-S	SPW-606-D	18V @ 700 mA	36V CT @ 350 mA
	SPW-607-S	SPW-607-D	24V @ 500 mA	48V CT @ 250 mA
	SPW-608-S	SPW-608-D	28V @ 440 mA	56V CT @ 220 mA
	SPW-609-S	SPW-609-D	60V @ 200 mA	120V CT @ 100 mA
20.0	SPW-610-S	SPW-610-D	5V @ 4.0A	10V CT @ 2.0A
	SPW-611-S	SPW-611-D	6.3V @ 3.2A	12.6V CT @ 1.6A
	SPW-612-S	SPW-612-D	8V @ 2.5A	16V CT @ 1.25A
	SPW-613-S	SPW-613-D	10V @ 2.0A	20V CT @ 1.0A
	SPW-614-S	SPW-614-D	12V @ 1.6A	24V CT @ 800 mA
	SPW-615-S	SPW-615-D	14V @ 1.4A	28V CT @ 700 mA
	SPW-616-S	SPW-616-D	18V @ 1.1A	36V CT @ 550 mA
	SPW-617-S	SPW-617-D	24V @ 800 mA	48V CT @ 400 mA
	SPW-618-S	SPW-618-D	28V @ 700 mA	56V CT @ 350 mA
	SPW-619-S	SPW-619-D	60V @ 320 mA	120V CT @ 160 mA
36.0	SPW-620-S	SPW-620-D	5V @ 7.2A	10V CT @ 3.6A
	SPW-621-S	SPW-621-D	6.3V @ 5.7A	12.6V CT @ 2.85A
	SPW-622-S	SPW-622-D	8V @ 4.5A	16V CT @ 2.25A
	SPW-623-S	SPW-623-D	10V @ 3.6A	20V CT @ 1.8A
	SPW-624-S	SPW-624-D	12V @ 3.0A	24V CT @ 1.5A
	SPW-625-S	SPW-625-D	14V @ 2.6A	28V CT @ 1.3A
	SPW-626-S	SPW-626-D	18V @ 2.0A	36V CT @ 1.0A
	SPW-627-S	SPW-627-D	24V @ 1.5A	48V CT @ 750 mA
	SPW-628-S	SPW-628-D	28V @ 1.3A	56V CT @ 650 mA
	SPW-629-S	SPW-629-D	60V @ 600 mA	120V CT @ 300 mA

24V Primary Series-Standard Profile

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▲ Superior Design

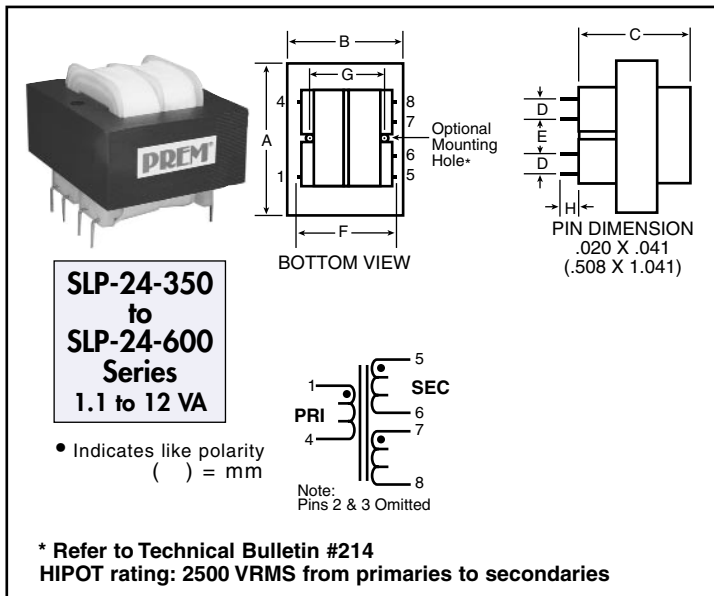
- 24 VAC primary winding
- Three flange bobbin design.
- No electrostatic shield required.
- Immersed in 100% solids epoxy resin to withstand most aqueous and solvent cleaning systems.
- 2,500 VAC HIPOT rating primary to secondaries.
- Pin-out compatible with 115V SPW series.
- Class B insulation system.

▲ 100% Final Tested

- Every single transformer is tested for exciting current, open circuit voltage (turns ratio), polarity (phasing) and dielectric strength.

PREM	SLP-24-350	SLP-24-400	SLP-24-500	SLP-24-600
VA	1.1	2.4	6.0	12.0
A	1.375" (34.93)	1.375" (34.93)	1.625" (41.28)	1.875" (47.63)
B	1.125" (28.58)	1.125" (28.58)	1.312" (33.32)	1.562" (39.69)
C	.9370" (23.81)	1.187" (30.15)	1.290" (32.77)	1.437" (36.51)
D	.2500" (6.35)	.2500" (6.35)	.2500" (6.35)	.3000" (7.62)
E	.2500" (6.35)	.2500" (6.35)	.3500" (8.89)	.4000" (10.16)
F	1.200" (30.48)	1.200" (30.48)	1.270" (32.26)	1.410" (35.81)
G	N/A	N/A	1.062" (26.99)	1.250" (31.75)
Screw Size	N/A	N/A	#4	#4
H	.2000" (5.08)	.2000" (5.08)	.2000" (5.08)	.2000" (5.08)

() = mm



VA	Part No. Single 24V 6 pin	Secondary	
		Parallel	Series
1.1	SLP-24-350	5V @ 220 mA	10V CT @ 110 mA
	SLP-24-351	6.3V @ 180 mA	12.6V CT @ 90 mA
	SLP-24-352	8V @ 140 mA	16V CT @ 70 mA
	SLP-24-353	10V @ 110 mA	20V CT @ 55 mA
	SLP-24-354	12V @ 90 mA	24V CT @ 45 mA
	SLP-24-355	14V @ 80 mA	28V CT @ 40 mA
2.4	SLP-24-400	5V @ 500 mA	10V CT @ 250 mA
	SLP-24-401	6.3V @ 400 mA	12.6V CT @ 200 mA
	SLP-24-402	8V @ 300 mA	16V CT @ 150 mA
	SLP-24-403	10V @ 240 mA	20V CT @ 120 mA
	SLP-24-404	12V @ 200 mA	24V CT @ 100 mA
	SLP-24-405	14V @ 170 mA	28V CT @ 85 mA
6.0	SLP-24-500	5V @ 1.2A	10V CT @ 600 mA
	SLP-24-501	6.3V @ 1.0A	12.6V CT @ 500 mA
	SLP-24-502	8V @ 800 mA	16V CT @ 400 mA
	SLP-24-503	10V @ 600 mA	20V CT @ 300 mA
	SLP-24-504	12V @ 500 mA	24V CT @ 250 mA
	SLP-24-505	14V @ 400 mA	28V CT @ 200 mA
12.0	SLP-24-600	5V @ 2.4A	10V CT @ 1.2A
	SLP-24-601	6.3V @ 2.0A	12.6V CT @ 1.0A
	SLP-24-602	8V @ 1.6A	16V CT @ 800 mA
	SLP-24-603	10V @ 1.2A	20V CT @ 600 mA
	SLP-24-604	12V @ 1.0A	24V CT @ 500 mA
	SLP-24-605	14V @ 840 mA	28V CT @ 420 mA

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- No electrostatic shield required.
- Immersed in 100% solids epoxy resin to withstand most aqueous and solvent cleaning systems.
- 1,500 VAC HIPOT rating primaries to secondaries.
- Pin-out compatible with 115V SPW series.
- Class B insulation system.

▲ 100% Final Tested

- Every single transformer is tested for exciting current, open circuit voltage (turns ratio), polarity (phasing) and dielectric strength.

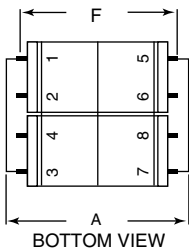
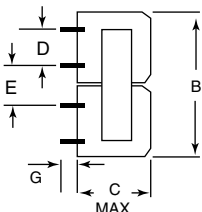
PREM	SLP-24-050	SLP-24-100	SLP-24-150	SLP-24-300
VA	2.5	6.0	9.0	12.0
A	1.875" (47.63)	1.875" (47.63)	1.875" (47.63)	2.500" (63.50)
B	1.562" (39.69)	1.562" (39.69)	1.562" (39.69)	2.000" (50.80)
C	.660" (16.76)	.850" (21.59)	1.080" (27.43)	1.065" (27.05)
D	.375" (9.53)	.375" (9.53)	.375" (9.53)	.500" (12.70)
E	.375" (9.53)	.375" (9.53)	.375" (9.53)	.500" (12.70)
F	1.600" (40.64)	1.600" (40.64)	1.600" (40.64)	2.00" (50.80)
G	.200" (5.08)	.200" (5.08)	.200" (5.08)	.200" (5.08)

() = mm

Note: Dual winding primary units on this page have two (2) 24 volt primaries that must be connected in parallel for

VA	Part No. Dual 24V Primary	Secondary	
		PARALLEL	SERIES
2.5	SLP-24-050	5V @ 500 mA	10V CT @ 250 mA
	SLP-24-051	6.3V @ 400 mA	12.6V CT @ 200 mA
	SLP-24-052	8V @ 300 mA	16V CT @ 150 mA
	SLP-24-053	10V @ 250 mA	20V CT @ 125 mA
	SLP-24-054	12V @ 200 mA	24V CT @ 100 mA
	SLP-24-061	15V @ 170 mA	30V CT @ 85 mA
6.0	SLP-24-100	5V @ 1.2A	10V CT @ 600 mA
	SLP-24-101	6.3V @ 900 mA	12.6V CT @ 450 mA
	SLP-24-102	8V @ 700 mA	16V CT @ 350 mA
	SLP-24-103	10V @ 600 mA	20V CT @ 300 mA
	SLP-24-104	12V @ 500 mA	24V CT @ 250 mA
	SLP-24-111	15V @ 400 mA	30V CT @ 200 mA
9.0	SLP-24-150	5V @ 1.80A	10V CT @ 900 mA
	SLP-24-151	6.3V @ 1.43A	12.6V CT @ 715 mA
	SLP-24-152	8V @ 1.125A	16V CT @ 562 mA
	SLP-24-153	10V @ 900 mA	20V CT @ 450 mA
	SLP-24-154	12V @ 750 mA	24V CT @ 375 mA
	SLP-24-161	15V @ 600 mA	30V CT @ 300 mA
12.0	SLP-24-300	5V @ 2.4A	10V CT @ 1.2A
	SLP-24-301	6.3V @ 1.8A	12.6V CT @ 900 mA
	SLP-24-302	8V @ 1.4A	16V CT @ 700 mA
	SLP-24-303	10V @ 1.2A	20V CT @ 600 mA
	SLP-24-304	12V @ 1.0A	24V CT @ 500 mA
	SLP-24-311	15V @ 800 mA	30V CT @ 400 mA



SLP-24-050
2.5 VA

SLP-24-100
6.0 VA

SLP-24-150
9.0 VA

SLP-24-300
12.0 VA

External connections:
Parallel 1-3, 2-4, 5-7,
6-8

PRI SEC

1 5

2 6

3 7

4 8

• Indicates like polarity () = mm

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Telephony (Coupling Transformers) Index

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Category	SPT-#'S
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Small Board Area Usage (< 1.0"/25.4mm Square)	010, 011, 012, 013, 015, 016, 020, 021, 022, 023, 024, 032, 034, 040, 041, 042, 043, 044, 046, 047, 048, 049, 050, 113, 115, 128, 131, 196, 197, 1103, 1104, 2104, 2105, 2106, 2107,
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"Dry" Units (w/o DC Current)	010, 011, 013, 015, 016, 022, 023, 024, 032, 034, 040, 042, 043, 044, 046, 047, 048, 049, 050, 128, 131, 197, 1103, 1104, 2104, 2106
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xDSL	2000, 2001, 2002, 2003, 2004

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041 - - - 14	192 - - - 18
042 - - - 16	193 - - - 18
043 - - - 16	194 - - - 17
044 - - - 16	195 - - - 17
046 - - - 15	196 - - - 19
047 - - - 15	197 - - - 19
048 - - - 15	198 - - - 20
049 - - - 15	199 - - - 20
050 - - - 15	1103 - - - 18
101 - - - 17	1104 - - - 18
109 - - - 18	1105 - - - 20
110 - - - 18	1106 - - - 20
111 - - - 18	1107 - - - 20
112 - - - 18	1108 - - - 23
113 - - - 19	1109 - - - 23
115 - - - 19	1110 - - - 23
116 - - - 19	1111 - - - 23
117 - - - 19	1112 - - - 23
118 - - - 19	1113 - - - 23
119 - - - 19	1114 - - - 23
123 - - - 17	1115 - - - 23
124 - - - 19	2000 - - - 16
125 - - - 17	2001 - - - 16
126 - - - 17	2002 - - - 16
127 - - - 18	2003 - - - 16
128 - - - 18	2004 - - - 16
131 - - - 19	2104 - - - 19
169 - - - 21	2105 - - - 19
172 - - - 20	2106 - - - 18
175 - - - 21	2107 - - - 23
176 - - - 21	2108 - - - 23
177 - - - 21	2109 - - - 23

Telephony–Voice and Data

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British Standards Institute (BSI) Approved Telephone Transformers for Safety Critical Applications

Other manufacturers may offer to design for BSI, but our new series of telephone interconnect transformers is already approved* by the British Standard Institute (BSI). These high isolation transformers meet safety critical components classifications.

*SPT-041...Pending

Superior Design

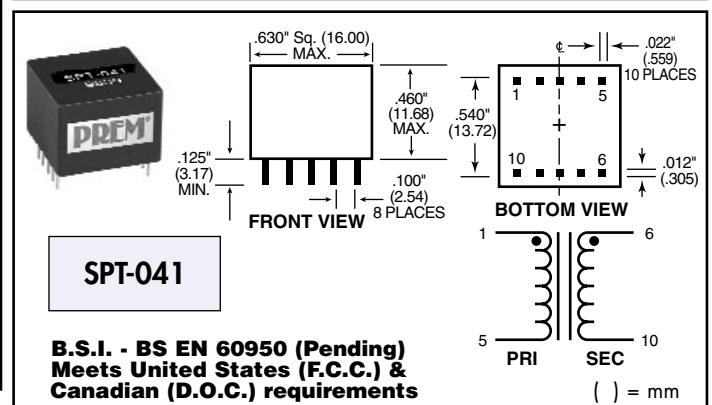
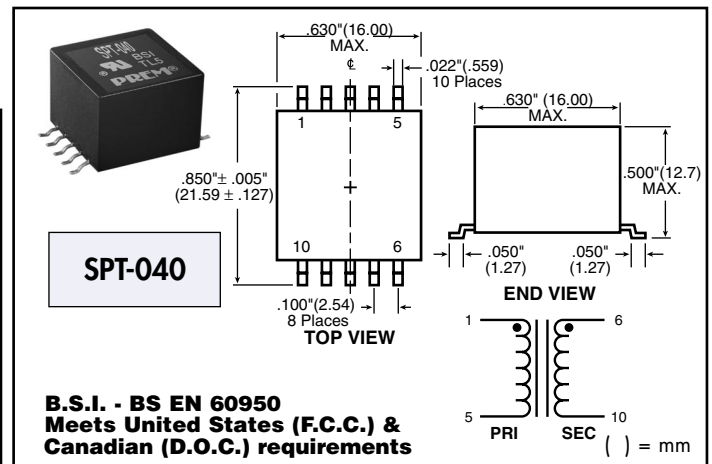
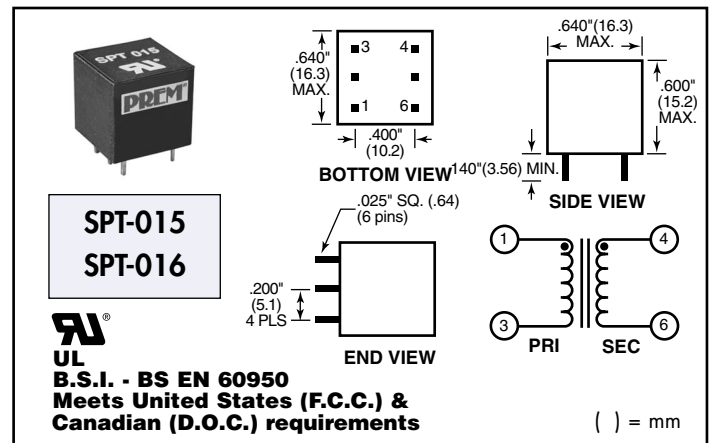
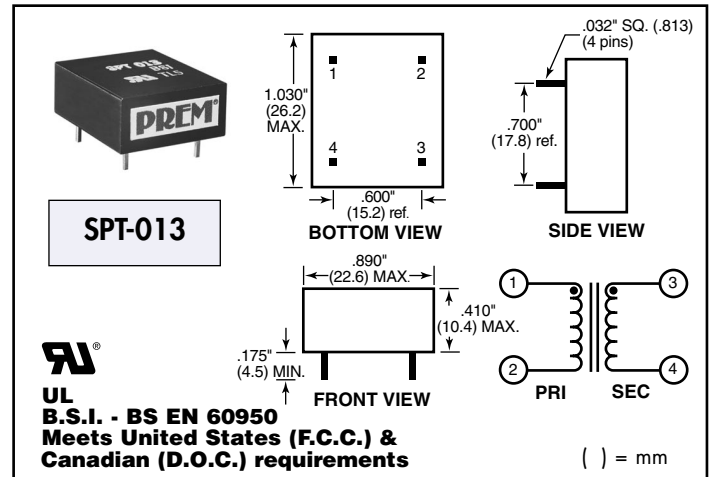
- Designed for voice and data applications in the European market.
- Also meets Canadian (DOC) and United States (FCC) requirements.
- All Prem components are 100% final tested before shipping.

Specifications

- UL 94 V0 Materials
- Designed for dry circuits
- Impedance ratios of 600Ω: 600Ω
- Hipot ratings are 3,750 VRMS
- Designed for safety critical component specifications
- Utilizes reinforced insulation
- Rated for maximum working voltage of 250 volts.
- Pin outs are symmetrical and can be rotated 180° without changing electrical performance.
- Insulation resistance > 100MΩ @ 500 V.D.C.

PREM		SPT-013	SPT-015	SPT-016	SPT-040	SPT-041
IMPEDANCE (Ω)	PRIMARY	600	600	600	600	600
	SECONDARY	600	600	600	600	600
TURNS RATIO ± 2%		1:1	1:1	1:1	1:1	1:1
MAXIMUM DC UNBALANCE		0mA	0mA	0mA	0mA	0mA
INS. LOSS REF @ 1KHz		1.2dB	1.3dB	1.1dB	.8dB	.8dB
RETURN LOSS MIN. 200 Hz. - 4 KHz.		14.0dB	14.0dB	14.0dB	18dB	18dB
T.H.D. @ 0dBm 300Hz (TYP.)		-60dB	-60dB	-70dB	-53dB	-53dB
T.H.D. @ -10dBm 600Hz		-72dB Max.	-72dB Max.	-78dB Max.	-70dB Max.	-70dB Max.
RESISTANCE ± 10%	PRIMARY	58.0Ω	70.0Ω	70.0Ω	35.6Ω	35.6Ω
	SECONDARY	58.0Ω	70.0Ω	70.0Ω	35.6Ω	35.6Ω
FREQUENCY RESPONSE 200-4KHz		±0.25dB	±0.25dB	±0.25dB	±0.3dB	±0.3dB
MEETS LONGITUDINAL BALANCE PART 68 & IEEE 455		YES	YES	YES	YES	YES
DIELECTRIC STRENGTH PRI-SEC- CORE 1 MINUTE MINIMUM		3750 VAC	3750 VAC	3750 VAC	3750 VAC	3750 VAC

All tests performed w/600Ω load on secondary.



British Standard Institute (BSI) Approved Transformers for Voice/Data/PCMCIA Modem Applications

▲ Safety Agency

- SPT-032, SPT-034, SPT-046, SPT-047, SPT-048, SPT-049 and SPT-050 meet United States (FCC) and Canadian (DOC) standards
- Certified to BSI (British Standards Institute) standard BS EN 60950.

▲ Specifications

- Rated for maximum working voltage of 250 Volts.
- Designed for dry (no DC) circuits.
- Impedance ratios of 600Ω to 600Ω.
- Hipot rating is 1500 VRMS for 1 minute minimum.
- Utilizes supplementary insulations.

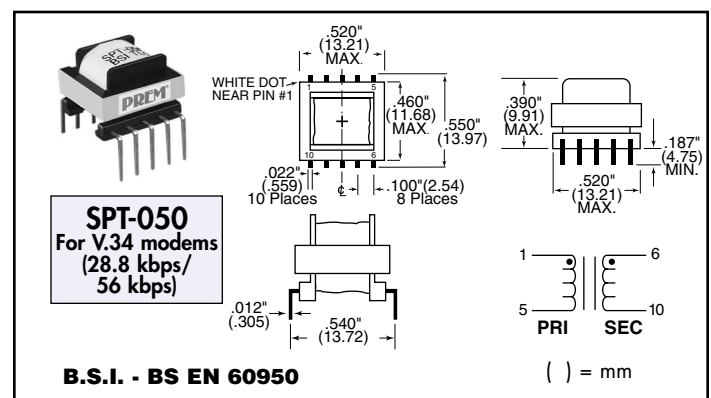
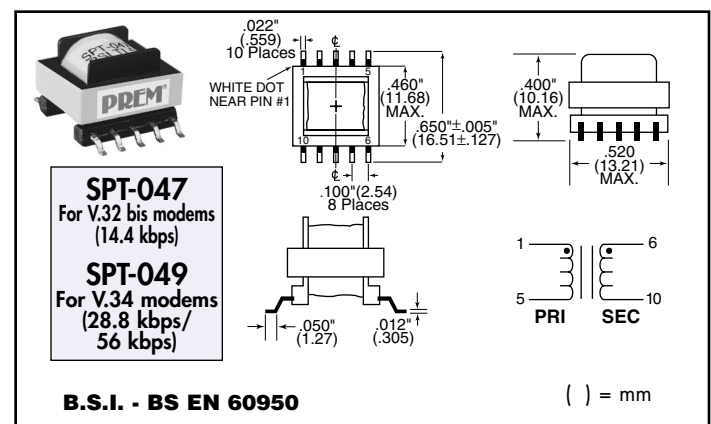
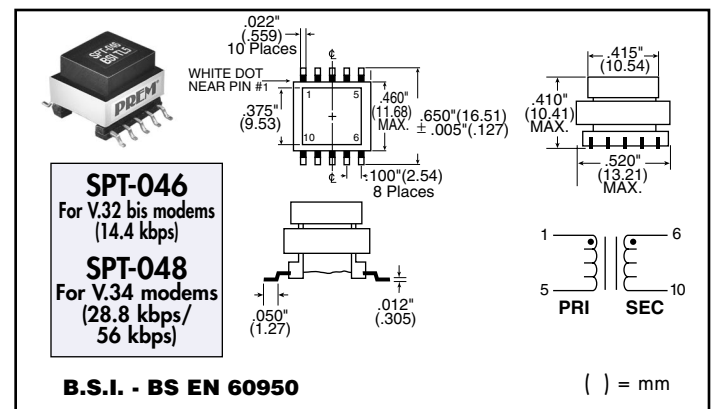
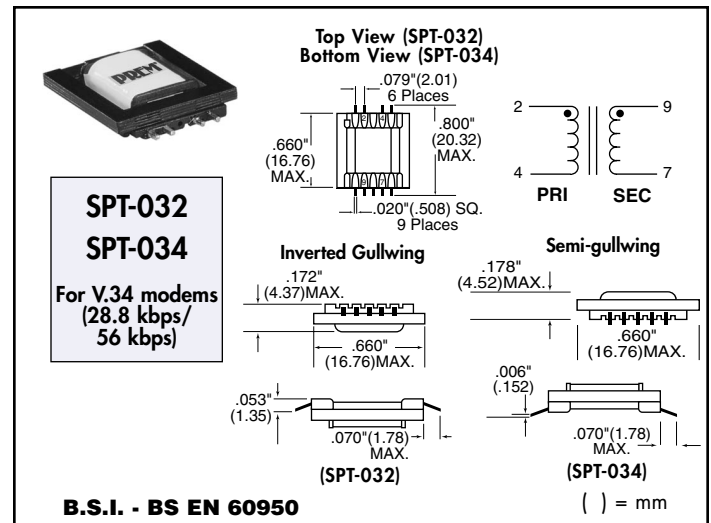
▲ Configuration

- Gull-wing lead style (except SPT-050) and small package dimensions.
- Designed for automated pick and place assembly equipment.
- Shipped in JEDEC style anti-static, non-sloughing trays designed to maintain lead coplanarity.
- SPT-046 and SPT-047 have a cap so they can be placed by a vacuum-tipped pickup head on some automated SMT assembly equipment.
- Two lead styles available: SPT-032 & SPT-034. The extremely low profile SPT-032 has an inverted gull-wing form so it can be placed within a square hole in the printed circuit board for further height savings.

PREM	SPT-032 ¹	SPT-034 ¹	SPT-046 ²	SPT-047 ²	SPT-048 ³	SPT-049 ³	SPT-050 ³
Suitable for Modem Speeds up to and including:	V.34	V.34	V.32bis	V.32bis	V.34	V.34	V.34
IMPEDANCE (Ω)	PRI	600	600	600	600	600	600
	SEC	600	600	600	600	600	600
TURNS RATIO ± 2%	1:1	1:1	1:1	1:1	1:1	1:1	1:1
MAXIMUM DC UNBALANCE	0mA	0mA	0mA	0mA	0mA	0mA	0mA
INS. LOSS REF @ 1KHz	3.3dB	3.3dB	2.0dB	2.0dB	3.15dB	3.15dB	3.15dB
RETURN LOSS MIN. @ 300Hz - 3500Hz	25dB*	25dB*	18dB	18dB	15dB	15dB	15dB
T.H.D. @ 0dBm 300Hz (TYP.)	-60dB	-60dB	-60dB	-60dB	-60dB	-60dB	-60dB
T.H.D. @ -10dBm 600Hz	-82dB Max.	-82dB Max.	-76dB Typ.	-76dB Typ.	-82dB Typ.	-82dB Typ.	-82dB Typ.
DC RESISTANCE ± 10%	PRI	155Ω	155Ω	92.5Ω	92.5Ω	128.6Ω	128.6Ω
	SEC	159Ω	159Ω	126.7Ω	126.7Ω	176.0Ω	176.0Ω
FREQUENCY RESPONSE @ 200-4000Hz	±0.2dB	±0.2dB	±0.3dB	±0.3dB	±0.3dB	±0.3dB	±0.3dB
MEETS LONGITUDINAL BAL. FCC PART 68 & IEEE 455	YES	YES	YES	YES	YES	YES	YES
DIELECTRIC STRENGTH 1 MINUTE MIN.	1500 Vac	1500 Vac	1500 Vac	1500 Vac	1500 Vac	1500 Vac	1500 Vac

1- Resistive load of 294 ohms was used to reflect 600 ohms on all test parameters.

2- Resistive load of 400 ohms was used to reflect 600 ohms on all test parameters.



Telephony–Voice, Data, and xDSL

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PREM		SPT-042	SPT-043	SPT-044	SPT-2000	SPT-2001	SPT-2002	SPT-2003	SPT-2004
IMPEDANCE (Ω)	PRIMARY	600	600	600split	•	135nom.	•	100 $\pm$ 10%	100nom.
	SECONDARY	600	600	600split	•	32	•	400	100
TURNS RATIO		1:1 $\pm$ 2%	1:1 $\pm$ 2%	1:1 $\pm$ 2%	1.8:1 $\pm$ 1%	2:1 $\pm$ 2%	1:1.36 $\pm$ 2%	1:2 $\pm$ 1%	1:1 $\pm$ 1%
MAXIMUM DC UNBALANCE		0mA	0mA	0mA	0mA	160mA	0mA	0mA	0mA
INSERTION LOSS		1.2dB TYP@1KHz	1.0dB TYP@1KHz	1.0dB TYP@1KHz	•	0.5dB MAX@300KHz	•	0.2dB MAX@772KHz	•
RETURN LOSS MINIMUM		20dB 300Hz-3.5KHz	20dB 300Hz-4KHz	20dB 300Hz-4KHz	•	16.5dB 40KHz-300KHz	•	15.0dB 100KHz-4MHz	10.0dB 30KHz-1.1MHz
T.H.D.	@0dBm 300Hz	-50dB TYP	-58dB TYP	-58dB TYP	•	-70dB MIN 40KHz@14dBm	•	•	•
	@-10dBm 600Hz	-64dB MAX	-72dB TYP	-72dB TYP	•	•	•	•	•
TOTAL DCR $\pm$ 10% UNLESS NOTED	PRIMARY	56.0 Ω	56.0 Ω	56.0 Ω	2.35 Ω MAX	2.50 Ω MAX	0.200 Ω MAX	0.600 Ω MAX	2.60 Ω
	SECONDARY	73.0 Ω	73.0 Ω	73.0 Ω	1.0 Ω MAX	1.0 Ω MAX	0.500 Ω MAX	1.20 Ω MAX	2.25 Ω
FREQUENCY RESPONSE		$\pm$ 0.3dB 200-4KHz	$\pm$ 0.3dB 200-4KHz	$\pm$ 0.3dB 200-4KHz	•	$\pm$ 0.2dB 40KHz-300KHz	•	$\pm$ 0.5dB 100K-4.0MHz*	•
MEETS LONGITUDINAL BALANCE PART 68.310		YES	YES	YES	•	•	35dB MIN @1.544MHz	35dB MIN @1.544MHz	40dB MIN @1.1MHz
DIELECTRIC STRENGTH PRI-SEC-CORE		1500VAC	1500VAC	1500VAC	1500VAC	1500VAC	1500VAC	1500VDC	1250VAC
L PRIMARY @ 0.100V		•	•	•	1.94mH $\pm$ 6% @10KHz	2.0mH $\pm$ 6% @10KHz	700 μ H MIN @1.0KHz	•	25.4mH MIN @10KHz
MAX L LEAKAGE @ 0.100V		•	•	•	•	11.0 μ H @100KHz(1-5)	1.3 μ H@10KHz (1-3);100mA AC	•	•

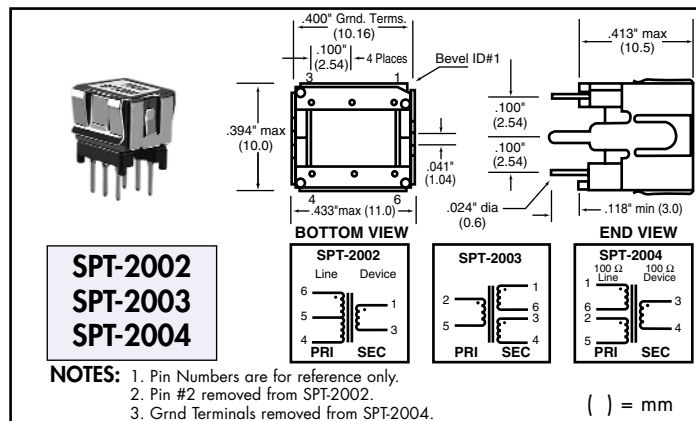
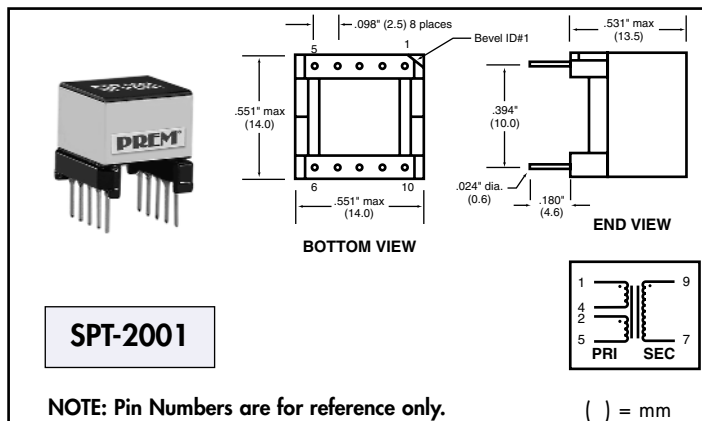
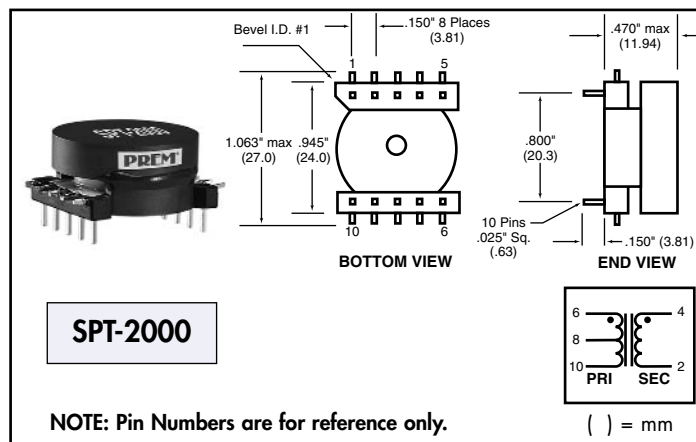
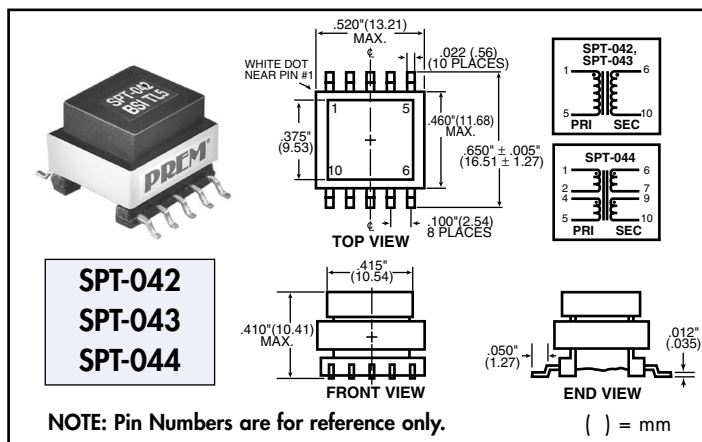
SPT-2000:For Level One SK70704/70707 1168Kbps HDSL Data Pump applications

SPT-2001:For Brooktree NT8921/BT8970 1168 HDSL applications

SPT-2002:For Dallas Semiconductor DS2125Q/DS2153Q T1/E1 applications

SPT-2003:T1/E1 Pulse transformer

SPT-2004:For Analog Devices ADmsh 910 ADSL applications



High Crosstalk Attenuation Voice and Data Telecom Transformers

▲ Safety Agency

- Meets United States (F.C.C.) and Canadian (D.O.C.) requirements.
- UL component recognized

▲ Specifications

- High Crosstalk attenuation
- Low Profile
- Impedance ratios of 600Ω: 600Ω
- Hipot - 1500 VRMS
- Ideal for multiple rack applications

Notes: 1. All units are symmetrical and can be rotated 180° without changing the pin-out or electrical performance.
2. Longitudinal balance connections for SPT-101 and SPT-195: (1A-2B) with 2A-1B and 6A-5B tied and floating, 600 Ω load with any secondary terminal grounded.

PREM		SPT-101	SPT-123	SPT-125	SPT-126	SPT-194	SPT-195
IMPEDANCE (Ω)	PRI	600	600	600	600	600	600
	SEC	600	600	600	600	600	600
TURNS RATIO ± 2%		1:1	1:1	1:1	1:1	1:1	1:1
MAXIMUM DC UNBALANCE		90mA	90mA	90mA	80mA	90mA	80mA
INS. LOSS REF @ 1KHz		1.80dB	1.85dB	1.35dB	2.00dB	1.40dB	2.10dB
RETURN LOSS MIN. @ 300Hz		11.0dB	12.0dB	13.0dB	11.5dB	12.0dB	11.0dB
T.H.D. @ 0dBm 300Hz (TYP.)		-65dB	-65dB	-65dB	-53dB	-53dB	-53dB
RESISTANCE ± 10%	PRI	95Ω	95Ω	80Ω	95Ω	80Ω	95Ω
	SEC	180Ω	180Ω	100Ω	180Ω	100Ω	180Ω
FREQ. RESPONSE @ 300-3.5KHz		±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB
DIELECTRIC STRENGTH PRI-SEC-CORE		1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC
LONGITUDINAL BAL. MEETS FCC PART 68.310 (a)		Yes Note #2	Yes	Yes	Yes	Yes	Yes Note #2
ALTERNATE PART		SPT-195	SPT-126	SPT-194	SPT-123	SPT-125	SPT-101

Transformers in blue shading are economy versions.

All tests performed with 600Ω load on secondary with DC on primary.

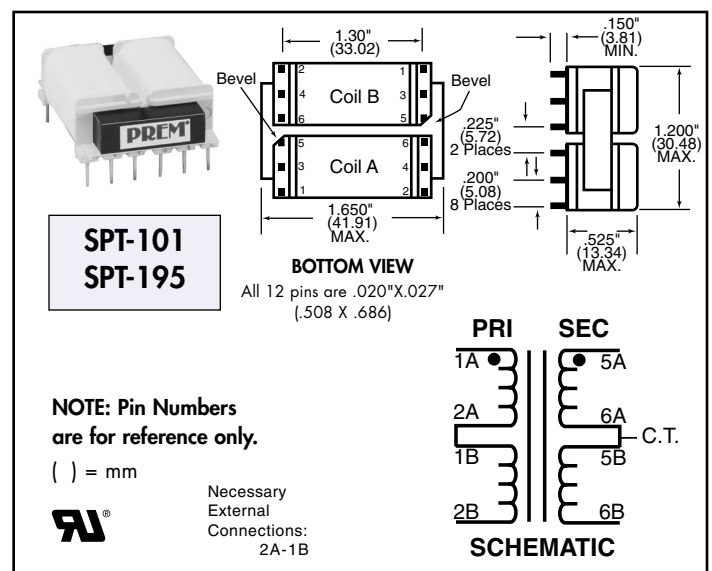
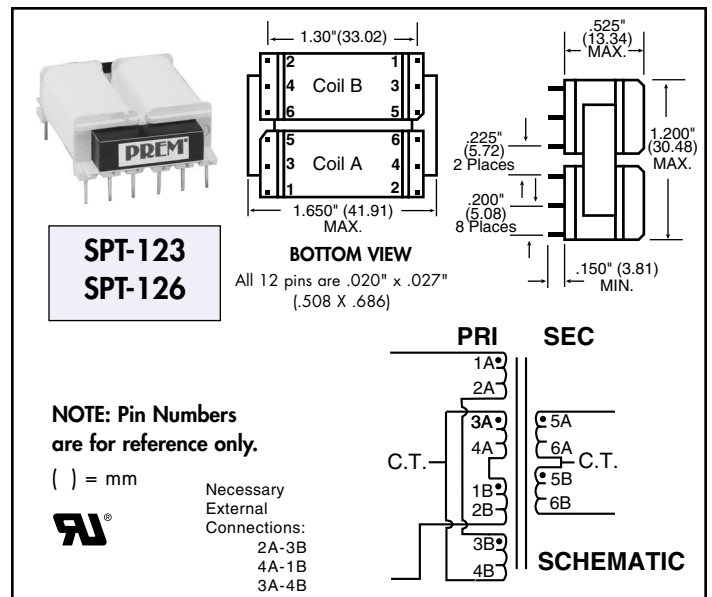
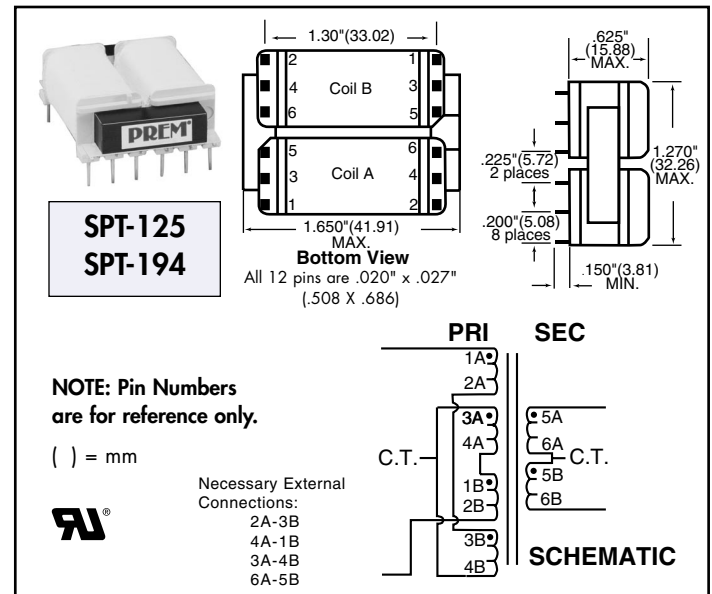
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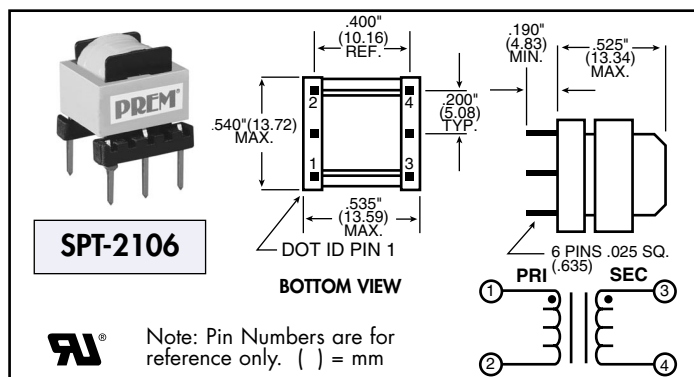
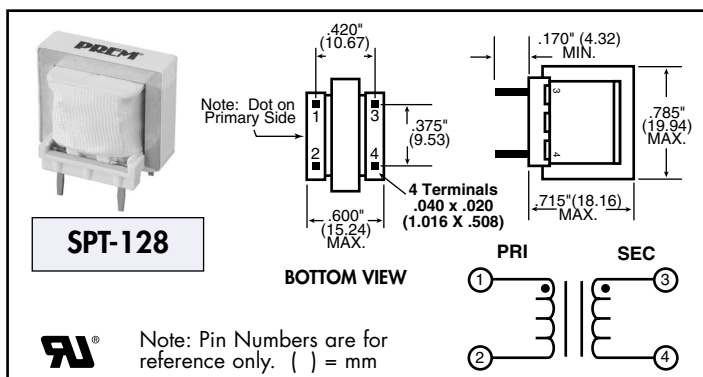
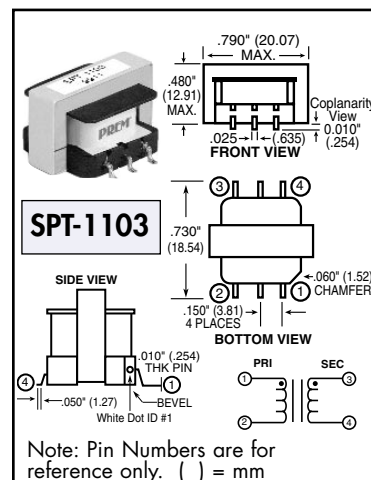
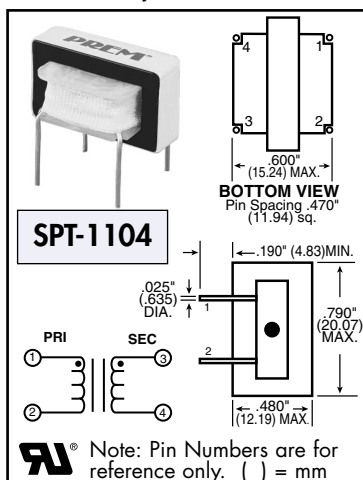
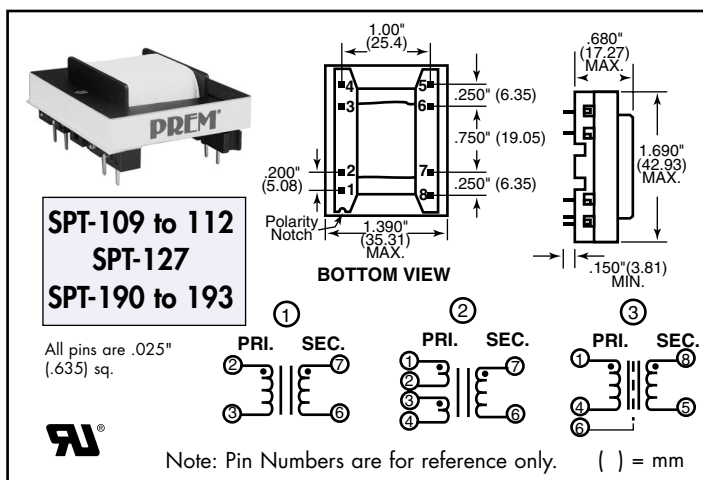
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PREM		SPT-109	SPT-110	SPT-111	SPT-112	SPT-127	SPT-128	SPT-190	SPT-191	SPT-192	SPT-193	SPT-1103 [†]	SPT-1104 [†]	SPT-2106
IMPEDANCE (Ω)	PRIMARY	600	600	900	900	600	600	600	600	900	900	600	600	600
	SECONDARY	600	600	600	600	600	600	600	600	600	600	600	600	600
TURNS RATIO ± 2%		1:1	1:1.127	1:1.8168	1:1.942	1:1	1:1	1:1	1:1.127	1:1.8168	1:1.942	1:1.028	1:1.028	1:1.0523
MAXIMUM DC UNBALANCE		80mA	80mA	80mA	80mA	120mA	0mA	80mA	80mA	80mA	80mA	0mA	0mA	0mA
INS. LOSS REF @ 1KHz		1.15dB	1.15dB	1.55dB	1.20dB	1.30dB	1.00dB	1.20dB	1.30dB	1.60dB	1.30dB	1.00dB	1.00dB	1.25dB
RETURN LOSS MIN. @ 300Hz		11.5dB	14.5dB	11.0dB	12.5dB	11.0dB	14.5dB	11.0dB	12.5dB	10.5dB	11.0dB	23.0dB	23.0dB	21.0dB
T.H.D. @ 0dBm 300Hz (TYP.)		-65dB	-65dB	-65dB	-65dB	-65dB	-55dB	-53dB	-53dB	-53dB	-53dB	-59dB	-59dB	-59dB
RESISTANCE ± 10%	PRIMARY	60Ω	67Ω	76Ω	83Ω	62Ω	35Ω	60Ω	67Ω	76Ω	83Ω	39Ω	39Ω	49Ω
	SECONDARY	72Ω	75.5Ω	92Ω	126Ω	100Ω	35Ω	72Ω	75.5Ω	92Ω	126Ω	50Ω	50Ω	65Ω
FREQUENCY RESPONSE 300-3.5KHz		±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.25dB
DIELECTRIC STRENGTH PRI-SEC-CORE		1500 VAC	1500 VAC	1500 VAC	1500 VAC	2400 VDC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC
LONGITUDINAL BALANCE MEETS FCC PART 68.310 (a)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
REFER TO SCHEMATIC NUMBER		1	2	1	2	3	•	1	2	1	2	•	•	•
ECHO RETURN LOSS MINIMUM		•	•	•	•	•	20.5dB	•	•	•	•	26.0dB	26.0dB	25.0dB
ALTERNATE PART		SPT-190	SPT-191	SPT-192	SPT-193	•	•	SPT-109	SPT-110	SPT-111	SPT-112	•	•	•

[†] impedance matching: ±10% over entire frequency

All tests performed with 600Ω on secondary with DC on primary



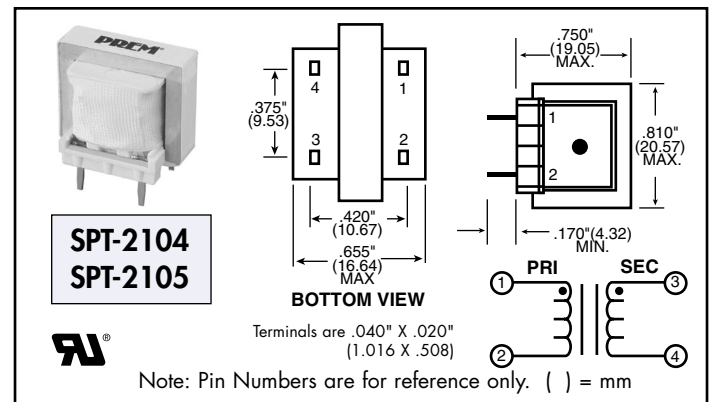
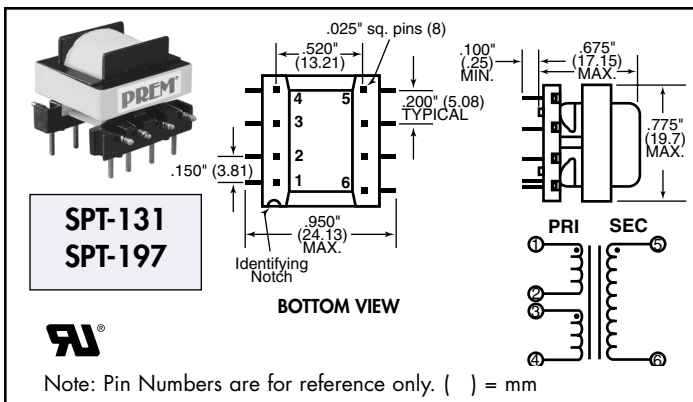
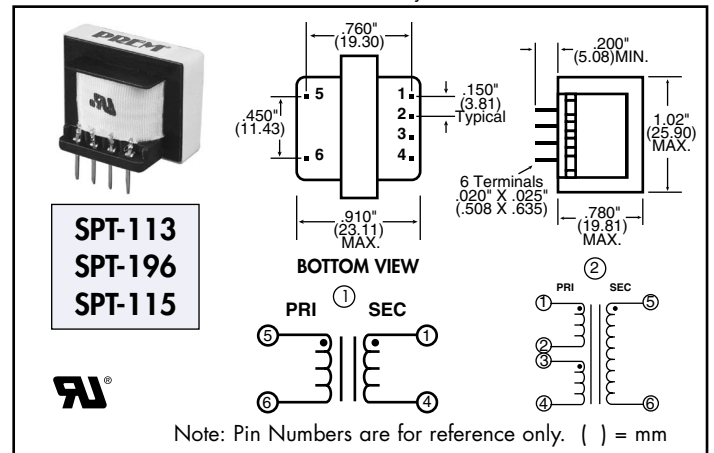
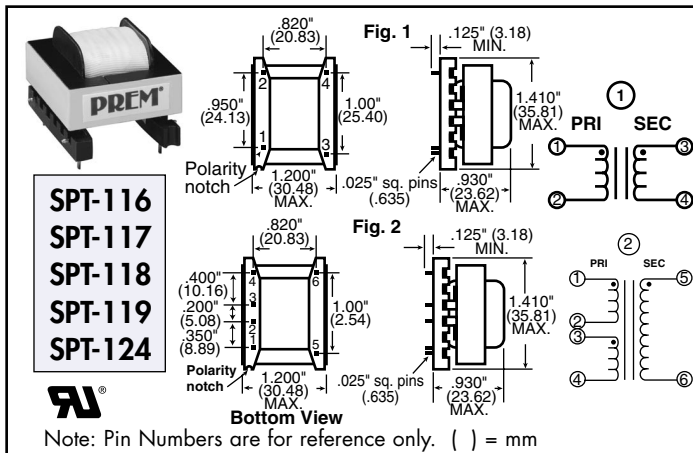
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PREM		SPT-113	SPT-115	SPT-116	SPT-117	SPT-118	SPT-119	SPT-124	SPT-131	SPT-196	SPT-197	SPT-2104 [†]	SPT-2105
IMPEDANCE (Ω)	PRIMARY	600	600	600	600	900	900	600	600	600	600	600	600
	SECONDARY	600	600	600	600	600	600	600	600	600	600	600	600
TURNS RATIO $\pm 2\%$		1:1	1:1	1:1	1:1.125	1:1.8163	1:1.946	1:1	1:1	1:1	1:1	1:1.037	1:1
MAXIMUM DC UNBALANCE		50mA	60mA	80mA	80mA	80mA	80mA	80mA	0mA	50mA	0mA	0mA	80mA
INS. LOSS REF @ 1KHz		1.25dB	1.30dB	1.20dB	1.25dB	1.50dB	1.55dB	1.20dB	1.00dB	1.30dB	1.15dB	.90dB	2.30dB
RETURN LOSS MINIMUM @ 300Hz		12.5dB**	10.5dB	13.0dB	16.0dB	9.5dB	12.0dB	13.0dB	18.0dB	11.0dB***	12.5dB	23.0dB	6.0dB
T.H.D. @ 0dBm 300Hz (TYP.)		-59dB	-53dB	-53dB	-59dB	-53dB	-53dB	-53dB	-57dB	-53dB	-53dB	-59dB	-55dB
RESISTANCE $\pm 10\%$	PRIMARY	75 Ω	63 Ω	66.2 Ω	76 Ω	82.8 Ω	90 Ω	66 Ω	24.5 Ω	75 Ω	24.5 Ω	36 Ω	180 Ω
	SECONDARY	76 Ω	88 Ω	82.2 Ω	86 Ω	85.4 Ω	110 Ω	82 Ω	31 Ω	76 Ω	31 Ω	50 Ω	75 Ω
FREQUENCY RESPONSE @ 300-3.5KHz		± 0.5 dB	± 0.5 dB	± 0.5 dB	± 0.5 dB	± 0.5 dB	± 0.5 dB	± 0.5 dB	± 0.5 dB	± 0.5 dB	± 0.55 dB	± 0.5 dB	*
DIELECTRIC STRENGTH V_{rms} PRI-SEC-CORE		1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC	1500 VAC
LONGITUDINAL BALANCE MEETS FCC PART 68.310 (a)		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
REFER TO FIGURE NUMBER		•	•	1	2	1	2	2	•	•	•	•	•
REFER TO SCHEMATIC #		2	1	1	2	1	2	2	•	2	•	•	•
ECHO RETURN LOSS MIN.		•	•	•	•	•	•	•	•	•	•	26.0dB	9.0dB
ALTERNATE PART		SPT-196	•	•	•	•	•	•	SPT-197	SPT-113	SPT-131	•	•

All tests performed with 600 Ω on secondary with DC on primary

* 300-600Hz ± 3.0 dB, 600Hz - 3.5KHz ± 1.0 dB; [†] impedance matching: $\pm 10\%$ over entire frequency range; ** Return loss measured with 422 Ω on secondary
*** Return loss measured with 460 Ω on secondary.



Telephony—Voice and Data

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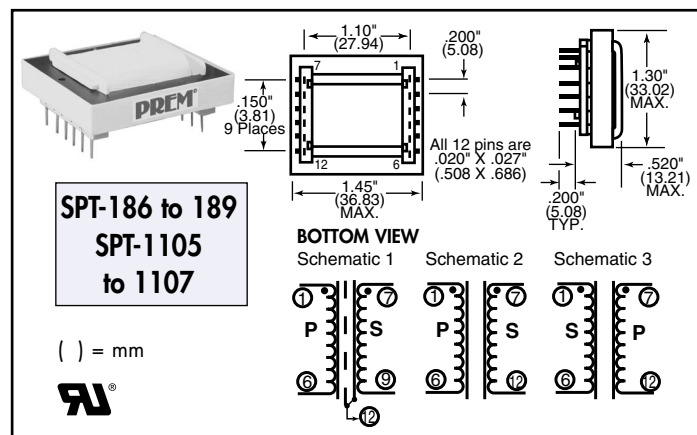
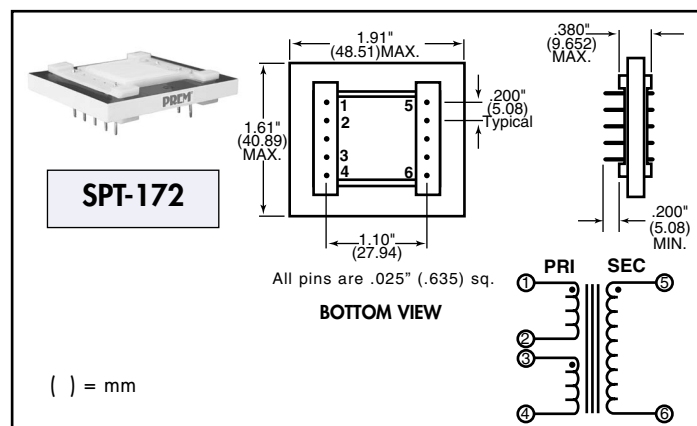
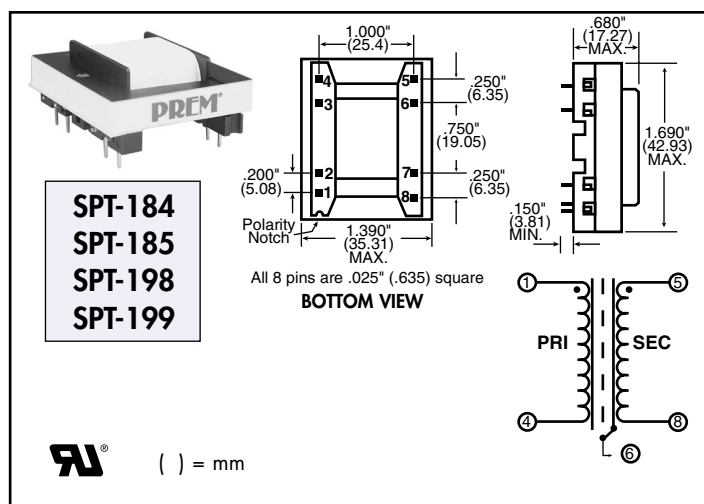
PREM		SPT-172	SPT-184	SPT-185	SPT-186	SPT-187	SPT-188	SPT-189	SPT-198	SPT-199	SPT-1105	SPT-1106	SPT-1107
IMPEDANCE (Ω)	PRIMARY	600	600	600	600	600	600	600	600	600	600	600	600
	SECONDARY	600	600	600	600	600	600	600	600	600	600	600	600
TURNS RATIO ± 2%		1:1	1:1	1:1.1036	1:1	1:1.08	1:1	1:1	1:1	1:1.1036	1:1.045	1:1	1:1.08
MAXIMUM DC UNBALANCE		50mA	120mA	120mA	70mA	70mA	70mA	60mA	120mA	120mA	80mA	70mA	70mA
INS. LOSS REF @ 1KHz		1.50dB	1.30dB	1.30dB	1.20dB	1.20dB	1.30dB	2.00dB	1.50dB	1.50dB	1.30dB	1.30dB	1.30dB
RETURN LOSS MIN. @ 300Hz		11.5dB	10.0dB	11.0dB	10.0dB	11.0dB	12.0dB	12.0dB	9.0dB	10.0dB	9.5dB	8.5dB	10.0dB
ECHO RETURN LOSS MINIMUM		16.5dB	15.0dB	18.0dB	16.5dB	19.0dB	16.0dB	16.5dB	12.5dB	14.5dB	17.0dB	15.0dB	18.0dB
T.H.D. @ 0dBm 300Hz (TYP.)		-50dB	-55dB	-55dB	-53dB	-65dB	-59dB	-53dB	-53dB	-53dB	-50dB	-53dB	-53dB
RESISTANCE ± 10%	PRIMARY	73Ω	63.5Ω	57.5Ω	66Ω	66Ω	70Ω	75Ω	63.5Ω	57.5Ω	62.4Ω	66Ω	66Ω
	SECONDARY	103Ω	99Ω	99Ω	66Ω	72Ω	81Ω	80Ω	99Ω	99Ω	60.1Ω	66Ω	72Ω
FREQUENCY RESPONSE @ 300-3.5KHz		±0.5dB	±0.5dB	±0.5dB	±0.6dB	±0.5dB	±0.5dB	±0.5dB	±1.0dB	±1.0dB	±1.0dB	±1.0dB	±1.0dB
DIELECTRIC STRENGTH PRI-SEC-CORE		1500 VAC	2200VDC	2200VDC	2200VDC	2200VDC	1500VAC	1500VAC	2200VDC	2200VDC	1500VAC	2200VDC	2200VDC
INSULATION RESISTANCE @ 500 V.D.C.		•	>100MΩ	>100MΩ	>100MΩ	>100MΩ	•	•	>100MΩ	>100MΩ	•	>100MΩ	>100MΩ
LONGITUDINAL BALANCE MEETS FCC PART 68.310 (a)		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
REFER TO SCHEMATIC NUMBER		•	•	•	1	1	2	3	•	•	2	1	1
ALTERNATE PART		•	SPT-198	SPT-199	SPT-1106	SPT-1107	•	•	SPT-184	SPT-185	•	SPT-186	SPT-187

Transformers in blue shading are economy versions.

All tests performed with 600Ω on secondary with DC on

Notes: 1. Static shield screens constructed with solid copper foil.
Ends overlap > .197"
(5.0)

Very Low Profile Coupling Transformers



Telephony–Voice, Data, and Hybrids

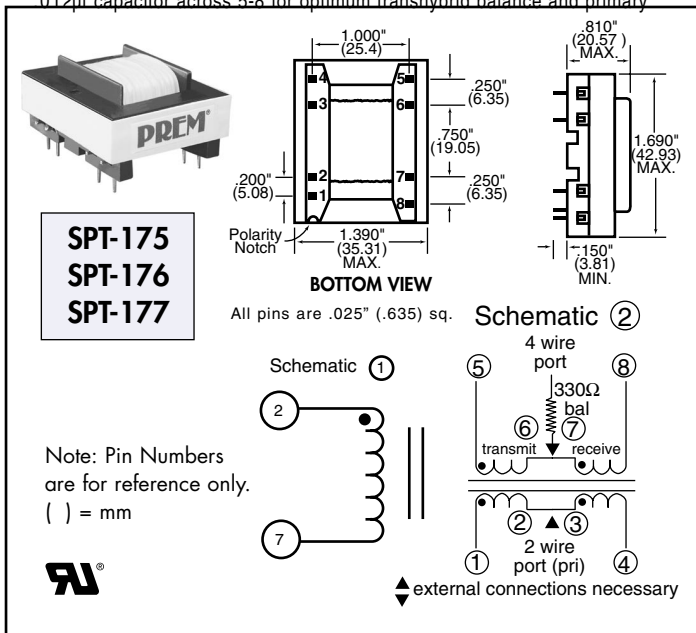
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Single Hybrid* Transformers and Feed Bridge Inductors Operating Level -45 to +7dBm

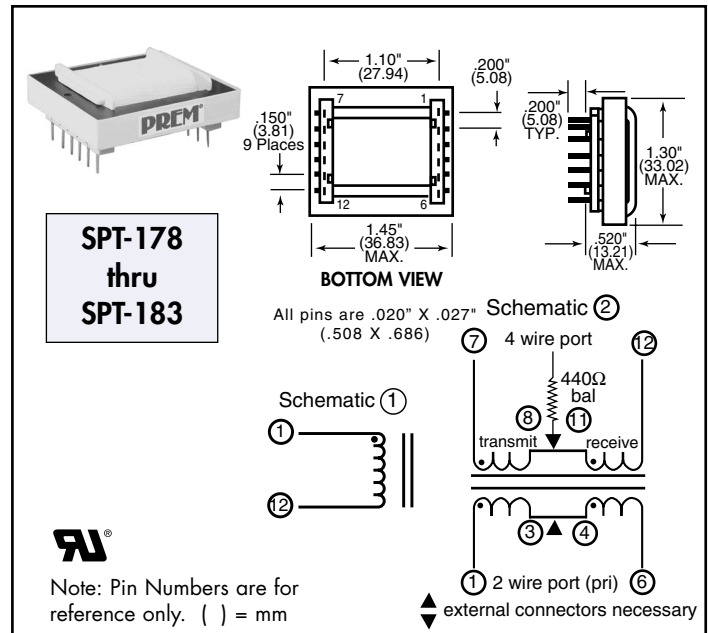
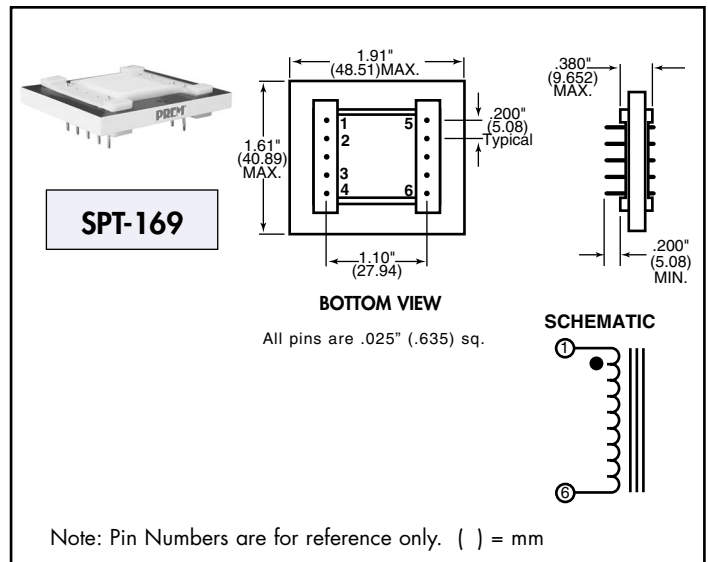
PREM		SPT-176	SPT-177	SPT-180	SPT-181	SPT-182	SPT-183
IMPEDANCE (Ω)	PRIMARY	600	900	600	900	600	900
	SECONDARY	600/600	600/600	600/600	600/600	600/600	600/600
TURNS RATIO ± 2%		1:1.429	1:1.158	1:1.60	1:1.257	1:1.160	1:1.257
MAXIMUM DC UNBALANCE		120mA	120mA	0mA	0mA	50mA	50mA
HYBRID LOSS		4.5dB	4.5dB	4.5dB	4.5dB	4.5dB	4.5dB
PRIMARY RETURN LOSS	300Hz	>11dB	>10dB	>20dB	>20dB	>14dB	>12dB
	1KHz	>22dB**	>21dB**	>25dB	>25dB	>23dB	>20dB
	4KHz	•	•	>28dB	>28dB	>28dB	>26dB
T.H.D. @ 0dBm 300Hz (TYP.)		-50dB	-50dB	-65dB	-65dB	-64dB	-64dB
RESISTANCE ± 10%	PRIMARY	38.53Ω	47.55Ω	74.0Ω	120.0Ω	74.0Ω	120.0Ω
	SECONDARY	63.84Ω	65.62Ω	138.0Ω	137.0Ω	138.0Ω	137.0Ω
FREQUENCY RESPONSE @300-3.5KHz		±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB	±0.5dB
TRANS-HYBRID BALANCE	300Hz	>15dB	>14dB	>25dB	>23dB	>18dB	>17dB
	1KHz	>31dB**	>28dB**	>34dB	>32dB	>28dB	>27dB
LONGITUDINAL BALANCE W/600 Ω LOAD		60dB	60dB	60dB	60dB	60dB	60dB
DIELECTRIC STRENGTH PRI-SEC-CORE		1500VAC	1500VAC	1500VAC	1500VAC	1500VAC	1500VAC
SCHEMATIC NUMBER		2	2	2	2	2	2

* Can be connected as a dual-hybrid for higher performance...Contact Prem Sales Dept.

** .012μf capacitor across 5-8 for optimum transhybrid balance and primary



PREM	SPT-169	SPT-175	SPT-178	SPT-179
MINIMUM INDUCTANCE AT RATED DC CURRENT	.9 Hy @ 0dc	1.7 Hy @ 0dc	.95 Hy @ 0dc	1.4 Hy @ 0dc
	.75 Hy @ 80ma	1.5 Hy @ 80ma	.90 Hy @ 50ma	1.3 Hy @ 50ma
	.60 Hy @ 120ma	1.3 Hy @ 120ma	.88 Hy @ 75ma. .85 Hy @ 100ma	1.2 Hy @ 90ma
DIELECTRIC STRENGTH Vrms WINDING-CORE	1500 VAC	1500 VAC	1500 VAC	1500 VAC
RESISTANCE ± 15%	114Ω	95Ω	88Ω	142Ω
SCHEMATIC NUMBER	•	1	1	1



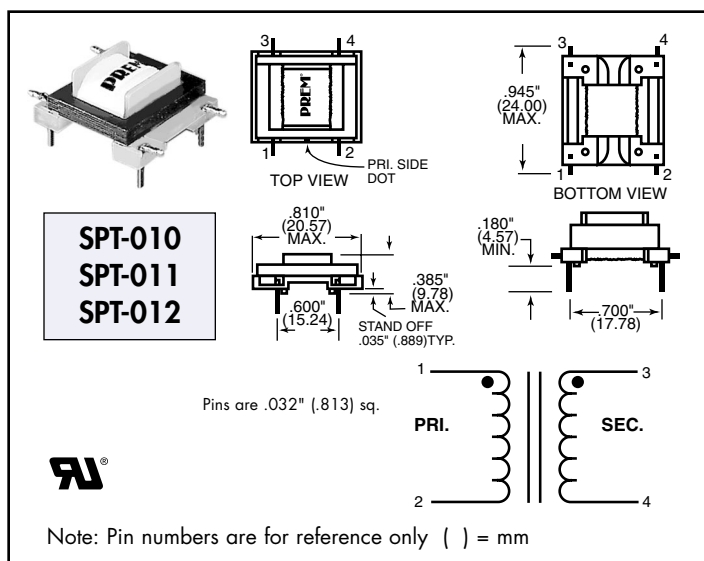
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New Sub-Miniature Voice/Data Coupling Transformers

▲ Ideal for applications requiring minimal use of pc board area and very low above-board height.

- SPT-010, SPT-011, SPT-022, SPT-023, and SPT-024 are dry (ODC) 600Ω:600Ω coupling transformers with excellent performance for voice and data applications.
- SPT-012, SPT-020 and SPT-021 are designed for data applications only



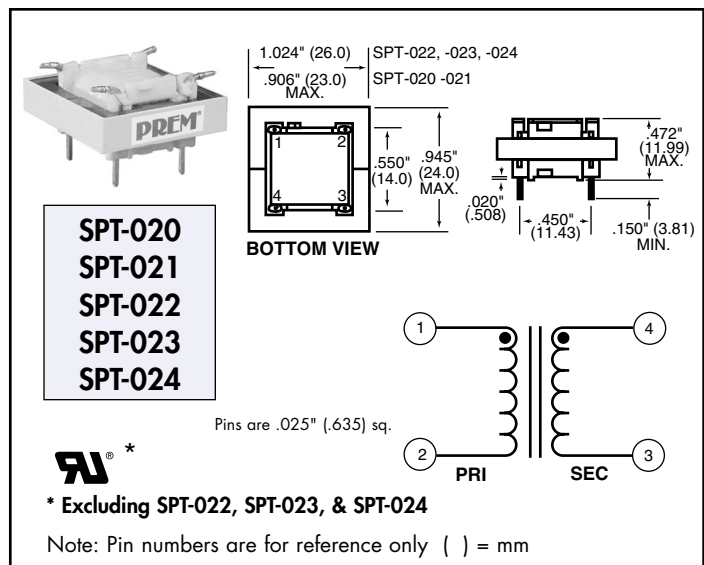
PREM		SPT-010	SPT-011	SPT-012	SPT-020	SPT-021	SPT-022	SPT-023	SPT-024
IMPEDANCE (Ω)	PRI	600	600	600	600	600	600	600	600
	SEC	600	600	600	600	600	600	600	600
TURNS RATIO ± 2%		1:1.0428	1:1.100	1:1	1:1	1:1	1:1	1:1	1:1
MAXIMUM DC UNBALANCE		0	0	30mA	100mA	100mA	0	0	0
INS. LOSS REF @ 1KHz		1.5dB ref.	1.3dB ref.	2.0dB ±5dB	2.5dB max*	2.0dB ±5dB	2.25dB max	2.25dB max	1.0dB max
RETURN LOSS MINIMUM		18.5dB ¹	25.0dB ¹	16.0dB ²	15.0dB ²	16.0dB ²	20.0dB ³	20.0dB ³	25.0dB ⁷
ECHO RETURN LOSS MIN.		23.5dB	28.0dB	15.0dB	12.0dB	13.0dB	29.0dB	29.0dB	30.0dB
T.H.D. (TYP.)		-53dB ¹	-55dB ⁴	-58dB ⁵	-58dB ⁵	-58dB ⁵	-76dB ⁶	-82dB ⁶	-81.4dB ⁵
RESISTANCE ± 10%	PRI	59.3Ω	62.5Ω	108.0Ω	108.0Ω	108.0Ω	108.0Ω	108.0Ω	43.0Ω
	SEC	74.4Ω	84.5Ω	131.3Ω	120.0Ω	120.0Ω	120.0Ω	120.0Ω	43.0Ω
FREQUENCY RESPONSE		±0.5dB 300-3.5KHz	±0.25dB 300-3.5KHz	±2.0dB 300-600Hz ±.65dB 600-3.5KHz	±2.5dB 300-600Hz ±1.0dB 600-3.5KHz	±2.5dB 300-600Hz ±.65dB 600-3.5KHz	±0.25dB 200-4.0 KHz	±0.25dB 200-4.0 KHz	±0.20dB 200-4.0 KHz
DIELECTRIC STRENGTH PRI-SEC-CORE		1500VAC	1500VAC	1500VAC	1500VAC	1500VAC	1500VAC	1500VAC	1500VAC
LONGITUDINAL BAL. MEETS FCC PART 68.310 (a) w/600 Ω load		YES	YES	YES	YES	YES	YES	YES	YES

TEST CONDITIONS:

- SPT-010 & SPT-011 tested @ 0mA DC with secondary load of 600Ω.
- SPT-012, SPT-020, and SPT-021 tested @ rated DC with secondary load of 470Ω.
- SPT-022 and SPT-023 tested @ 0mA DC with secondary load of 374Ω.
- SPT-024 tested @ 0mA DC with secondary load of 530Ω.
- * SPT-020 insertion loss measured with secondary load of 600Ω and 30 mA DC in primary.

NOTES:

- 1 = 300 Hz
- 2 = 1800 Hz
- 3 = 300 Hz-3KHz
- 4 = THD @ 0 dBm; 300Hz
- 5 = THD @ 0 dBm; 1 KHz
- 6 = THD @ -10 dBm; 600 Hz
- 7 = 200 Hz-4KHz



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Low Profile Coupling Transformers

▲ Voice and Data Transformers for Telephone Interconnect Systems

- Units below are Telecom Australia Approved, Approval #RA-87/117 (SPT-1108 thru SPT-1115).
 >100 M Ω insulation resistance
 -45 to +7dBm operating level
- Units below include very low profile condensed board space coupling and hybrid* transformers.

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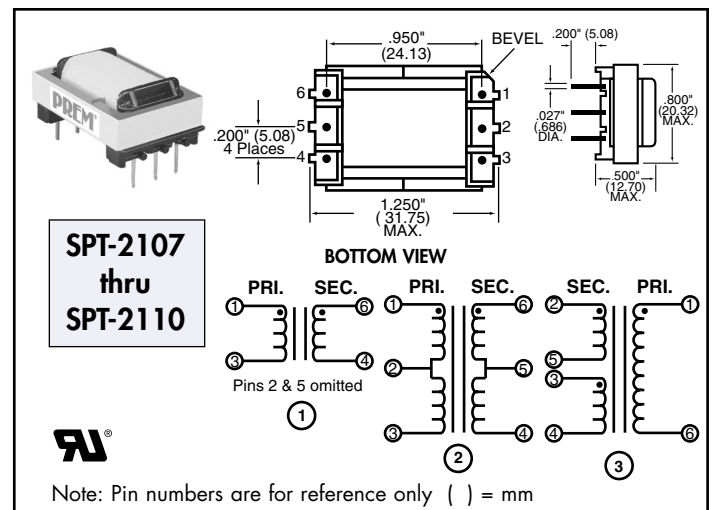
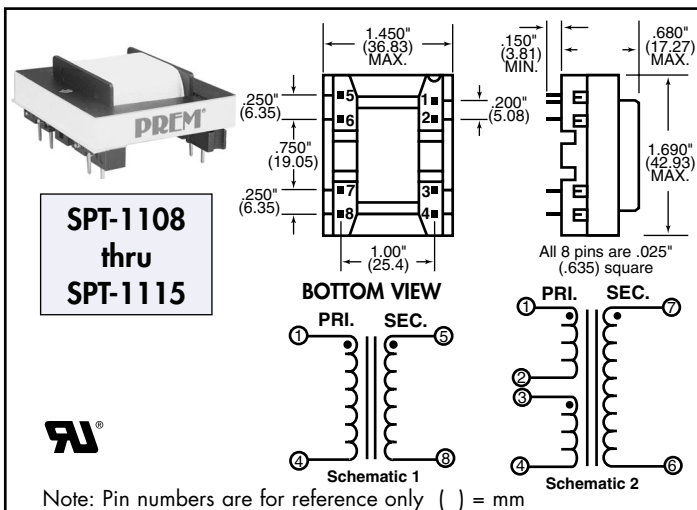
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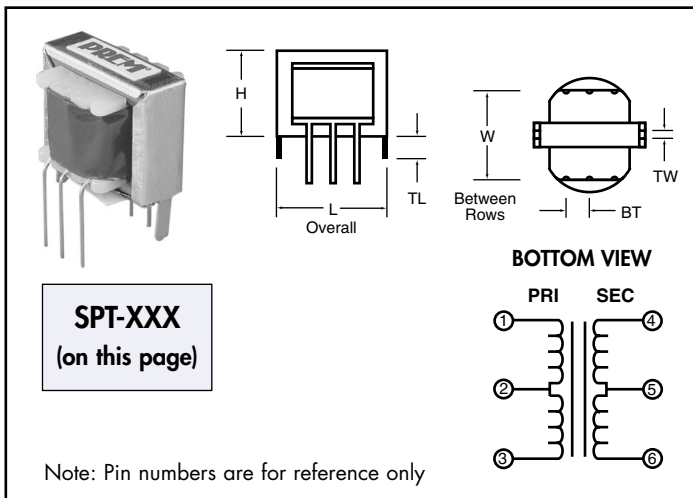
PREM		SPT-1108	SPT-1109	SPT-1110	SPT-1111	SPT-1112	SPT-1113	SPT-1114	SPT-1115	SPT-2107	SPT-2108	SPT-2109	SPT-2110
IMPEDANCE (Ω)	PRIMARY	600	600	600	600	600	600	600	600	600	600	600	600
	SECONDARY	600	600	600	600	600	600	600	600	600	600	600	600/600
TURNS RATIO $\pm$ 2%		1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1	1:1.04	1:1.04	1:1.04	1:1.41
MAXIMUM DC UNBALANCE		120mA	120mA	80mA	80mA	80mA	80mA	120mA	120mA	90mA	90mA	90mA	50mA
INS. LOSS REF @ 1KHz		1.30dB	1.40dB	1.20dB	1.30dB	1.20dB	1.30dB	1.30dB	1.40dB	1.70dB	1.70dB	1.70dB	1.60dB
RETURN LOSS MINIMUM		10.0dB ¹	9.0dB ¹	11.0dB ¹	10.0dB ¹	11.0dB ¹	10.0dB ¹	10.0dB ¹	9.0dB ¹	14.0dB ²	14.0dB ²	14.0dB ²	14.0dB ³
ECHO RETURN LOSS MINIMUM		14.0dB	12.5dB	16.0dB	15.0dB	16.0dB	15.0dB	14.0dB	12.5dB	•	•	•	•
T.H.D. @ 0dBm 300Hz (TYP.)		-59dB	-53dB	-59dB	-53dB	-59dB	-53dB	-59dB	-53dB	-50dB	-50dB	-50dB	-50dB
RESISTANCE $\pm$ 10%	PRIMARY	66 Ω	66 Ω	67 Ω	67 Ω	67 Ω	67 Ω	66 Ω	66 Ω	75 Ω	75 Ω	75 Ω	75 Ω
	SECONDARY	105 Ω	105 Ω	80 Ω	80 Ω	80 Ω	80 Ω	105 Ω	105 Ω	100 Ω	100 Ω	100 Ω	170 Ω
FREQUENCY RESPONSE	@300- 3.5KHz	$\pm$ 0.5dB	$\pm$ 1.0dB	$\pm$ 0.5dB	$\pm$ 1.0dB	$\pm$ 0.5dB	$\pm$ 1.0dB	$\pm$ 0.5dB	$\pm$ 1.0dB	$\pm$ 2.5dB	$\pm$ 2.5dB	$\pm$ 2.5dB	+3dB -1.6dB
	@500-3.5KHz	•	•	•	•	•	•	•	•	$\pm$ 1.3dB	$\pm$ 1.3dB	$\pm$ 1.3dB	+3dB -7dB
DIELECTRIC STRENGTH Vrms PRI-SEC-CORE		3750VAC [†]	3750VAC [†]	3750VAC [†]	3750VAC [†]	3750VAC [†]	3750VAC [†]	3750VAC [†]	3750VAC [†]	1500VAC	1500VAC	1500VAC	1500VAC
LONGITUDINAL BALANCE MEETS FCC PART 68.310 (a)		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
SCHEMATIC NUMBER		1	1	2	2	1	1	2	2	1	2	3	3

Secondary Load 600 Ω W/DC PRI $\dagger$ = one minute min. 1 = @ 300Hz 2 = @ 1800 Hz 3 = @ 1000 Hz *SPT-2110



Economy Audio Dry (No DC) Coupling Transformers

- Metric size, low cost audio transformers - units on this page imported from offshore - not manufactured by Prem.
- All units individually tested, inspected and approved by Prem's Quality Assurance Department.



DIM.	Size 1	Size 2	Size 3	Size 4
	EI-14	EI-16	EI-19	EI-24
L	15.2mm(.599")	17.7mm(.697")	20.3mm(.800")	25.3mm(1.00")
H	11.0mm(.433")	14.0mm(.551")	16.2mm(.640")	19.0mm(.750")
W	12.0mm(.473")	16.0mm(.630")	14.5mm(.571")	16.9mm(.666")
TW	2.0mm(.079")	2.2mm(.086")	2.2mm(.086")	2.6mm(.102")
TL	3.8mm(.150")	4.0mm(.157")	4.2mm(.165")	4.8mm(.189")
BT	2.5mm(.098")	2.8mm(.110")	3.0mm(.118")	4.5mm(.177")

All Dimensions Nominal

- ▲ Dielectric Strength – 1000VAC (PRI-SEC-CORE)
- ▲ Resistances $\pm 20\%$
- ▲ All Impedances $\pm 10\%$ (at 1KHz)

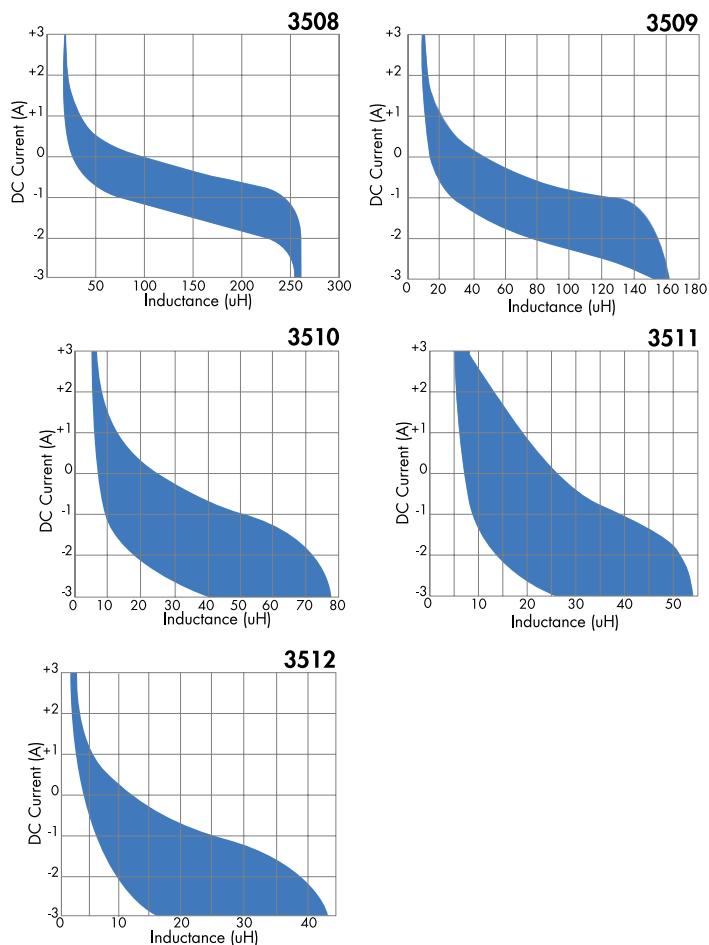
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PREM	SIZE	DESCRIPTION	IMPEDANCE Ω		DC RESISTANCE Ω	
			PRI	SEC	PRI	SEC
SPT-201	1	Output	500 C.T.	8 C.T.	35	.8
SPT-130	1	Coupling	600 C.T.	600 C.T.	45	40
SPT-202	1	Output	1K C.T.	8 C.T.	60	.8
SPT-203	1	Coupling	10K C.T.	600 C.T.	450	100
SPT-204	1	Driver	10K C.T.	2K C.T.	500	200
SPT-301	2	Output	500 C.T.	8 C.T.	22	.8
SPT-302	2	Interstage	500 C.T.	500 C.T.	30	28
SPT-303	2	Output	1.2K C.T.	8 C.T.	80	.8
SPT-304	2	Output	48 C.T.	8 C.T.	2.5	.5
SPT-305	2	Output	200 C.T.	8 C.T.	12	.8
SPT-400	3	Output	200 C.T.	8 C.T.	12	.8
SPT-401	3	Output	500 C.T.	8 C.T.	26	.8
SPT-129	3	Coupling	600 C.T.	600 C.T.	65	55
SPT-402	3	Output	800 C.T.	8 C.T.	40	.8
SPT-403	3	Output	1.2K C.T.	8 C.T.	80	.8
SPT-404	3	Interstage	1.5K C.T.	500 C.T.	120	50
SPT-405	3	Coupling	10K C.T.	600 C.T.	600	100
SPT-406	3	Driver	10K C.T.	2K C.T.	600	155
SPT-500	4	Output	48 C.T.	8 C.T.	2.5	.5
SPT-501	4	Output	120 C.T.	8 C.T.	7.0	.7
SPT-502	4	Output	200 C.T.	8 C.T.	12.0	.5
SPT-503	4	Output	500 C.T.	8 C.T.	18.0	.7
SPT-504	4	Interstage	500 C.T.	500 C.T.	35	28
SPT-505	4	Driver	10K C.T.	2K C.T.	600	155
SPT-506	4	Output	1.2K C.T.	8 C.T.	75	.8
SPT-507	4	Coupling	600 C.T.	600 C.T.	65	55

Size 1- EI-14 SERIES .075 WATTS MAX./ TCW LEADS .40mm DIA. (.0159) #26 AWG
 Size 2- EI-16 SERIES .100 WATTS MAX./ TCW LEADS .43mm DIA. (.0179) #25 AWG
 Size 3- EI-19 SERIES .200 WATTS MAX./ TCW LEADS .43mm DIA. (.0179) #25 AWG
 Size 4- EI-24 SERIES .460 WATTS MAX./ TCW LEADS .48mm DIA. (.020) #24 AWG

- Magnetically-biased linearity coil is fingertip adjustable to compensate for standard manufactured material tolerances and other components. Typical units can be adjusted to cover ranges indicated on graph.
- Typical space requirement: .8" (20.32mm) diameter by 1.25" (31.75mm) high
- Meets all Flammability Requirements of U.L. 94V-2 or better



- Specifically designed for multi-scan rate monitors utilizing frequencies to 90kHz
- Hook Up Information:

With a negative current applied to terminal #1, inductance will increase as shown on graph.

Apply a positive DC current to terminal #3 for bias adjustment (required DC current: 0 - 400 mA)

PREM

PIN INDEX NOTCH

3 4 5
2 1

1.13" (28.7)
± .02" (.508)

.97" (24.64)
± .02" (.508)

.040" (10.16) X
.018" (.457)

.82" (20.83)
MAX.

.18" (4.57)
MIN.

25" (6.35)

.72" (18.29)

.50" (12.7)

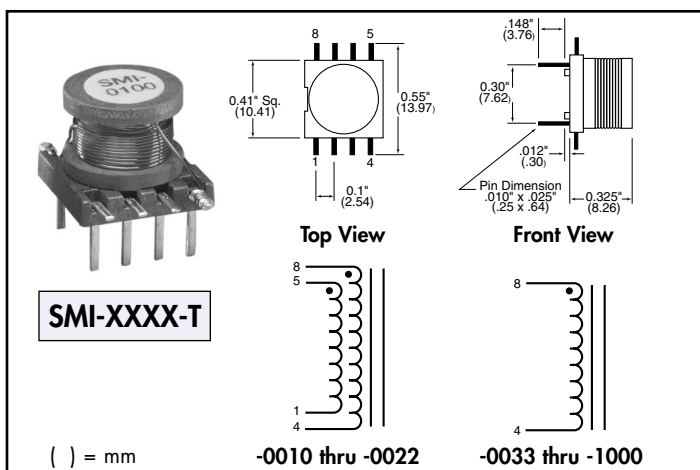
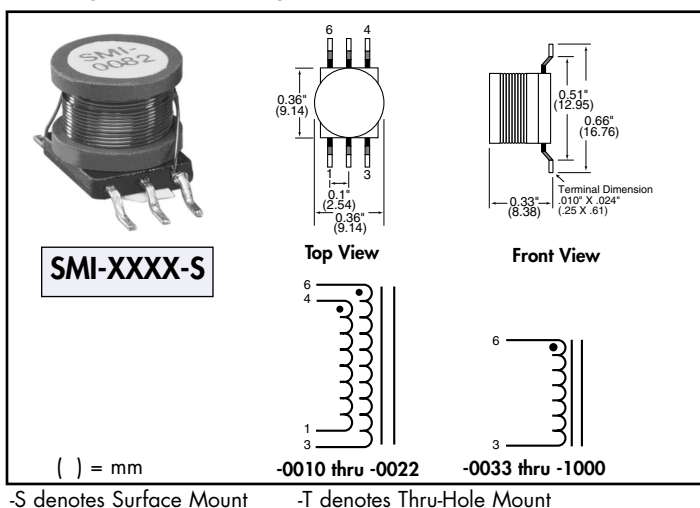
Note: Pin numbers are for reference only
() = mm



Economy Inductor Series for SMPS and RF Applications

SMI Series Surface Mount and Through-Hole Mount

- Excellent performance in a small package
- Low above board height (.350"/8.89mm maximum)
- Wide range of inductance values
- High current ratings



PREM PART NUMBER	L	I MAXIMUM	NOM. DCR Ω
SMI-0010	10uH	2.10A	0.057
SMI-0015	15uH	1.74A	0.083
SMI-0022	22uH	1.42A	0.123
SMI-0033	33uH	1.27A	0.156
SMI-0047	47uH	1.09A	0.237
SMI-0056	56uH	0.95A	0.303
SMI-0068	68uH	0.90A	0.342
SMI-0082	82uH	0.85A	0.380
SMI-0100	100uH	0.73A	0.522
SMI-0150	150uH	0.60A	0.786
SMI-0180	180uH	0.56A	0.885
SMI-0220	220uH	0.53A	1.005
SMI-0270	270uH	0.45A	1.374
SMI-0330	330uH	0.42A	1.594
SMI-0390	390uH	0.37A	2.041
SMI-0470	470uH	0.35A	2.324
SMI-0560	560uH	0.33A	2.562
SMI-0680	680uH	0.28A	3.522
SMI-0820	820uH	0.26A	3.954
SMI-1000	1000uH	0.23A	5.336

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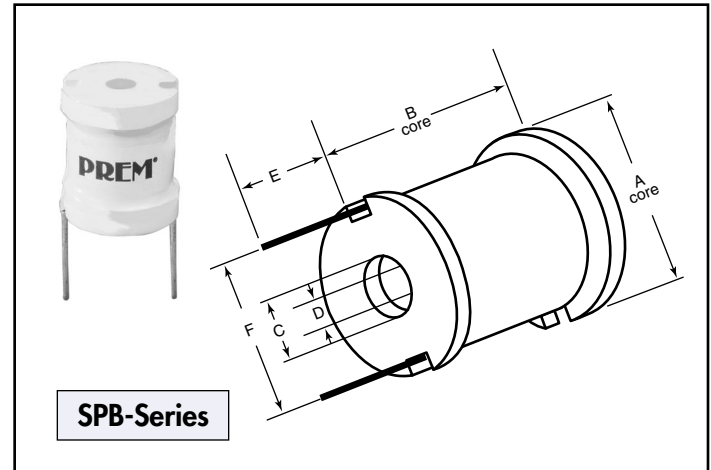
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Drum Core Type

Standard component ferrite core power inductors rated up to 12 amps DC for switch mode power supplies and other applications. Leads are tinned to within .063" (1.6mm) of the core.



SPB-Series

SPB-100 SERIES (2 μ HY-800 μ HY)					
PART NO.	Inductance	DC AMPS	NOM DCR Ω	Lead Size	Dimensions
SPB-100	2 μ HY	12.0	.005	14 gauge	A .560 (14.22) ref.
SPB-101	3 μ HY	10.0	.007	15 gauge	B .810 (20.57) ref.
SPB-102	4 μ HY	8.5	.010	16 gauge	C .187 (4.74) ref.
SPB-103	8 μ HY	7.0	.012	17 gauge	D .126 (3.20) ref.
SPB-104	18 μ HY	7.0	.013	17 gauge	E .6875/.8125 (17.46)/(20.63)
SPB-105	22 μ HY	5.5	.016	18 gauge	F SPB-100 - 107
SPB-106	30 μ HY	4.3	.021	19 gauge	.510 (12.95) ref.
SPB-107	37 μ HY	3.4	.032	20 gauge	SPB-108 - 118
SPB-108	50 μ HY	2.6	.042	20 gauge	.560 (14.22) ref.
SPB-109	80 μ HY	2.6	.059	20 gauge	Mounts using a non-metallic #4 screw
SPB-110	100 μ HY	2.1	.080	20 gauge	
SPB-111	135 μ HY	2.1	.093	20 gauge	
SPB-112	160 μ HY	1.7	.126	20 gauge	
SPB-113	220 μ HY	1.7	.154	20 gauge	
SPB-114	300 μ HY	1.7	.183	20 gauge	
SPB-115	380 μ HY	1.35	.252	20 gauge	
SPB-116	450 μ HY	1.35	.286	20 gauge	
SPB-117	600 μ HY	1.07	.406	20 gauge	
SPB-118	800 μ HY	1.07	.470	20 gauge	

() = mm

SPB-200 SERIES (4 μ HY-1.8 mH)					
PART NO.	Inductance	DC AMPS	NOM DCR Ω	Lead Size	Dimensions
SPB-200	4 μ HY	12.0	.006	14 gauge	A .720 (18.28) ref.
SPB-201	5 μ HY	10.0	.008	15 gauge	B .900 (22.86) ref.
SPB-202	20 μ HY	8.5	.013	16 gauge	C .187 (4.74) ref.
SPB-203	30 μ HY	7.0	.019	17 gauge	D .126 (3.20) ref.
SPB-204	40 μ HY	5.5	.025	18 gauge	E .6875/.8125 (17.46)/(20.63)
SPB-205	75 μ HY	4.3	.042	19 gauge	F SPB-200 - 207
SPB-206	120 μ HY	4.3	.053	19 gauge	.625 (15.87) ref.
SPB-207	150 μ HY	3.4	.072	20 gauge	SPB-208 - 215
SPB-208	200 μ HY	2.6	.105	20 gauge	.700 (17.78) ref.
SPB-209	300 μ HY	2.1	.158	20 gauge	Mounts using a non-metallic #4 screw
SPB-210	400 μ HY	2.1	.181	20 gauge	
SPB-211	600 μ HY	1.7	.272	20 gauge	
SPB-212	800 μ HY	1.7	.322	20 gauge	
SPB-213	950 μ HY	1.35	.433	20 gauge	
SPB-214	1.5 mH	1.07	.683	20 gauge	
SPB-215	1.8 mH	1.07	.760	20 gauge	

() = mm

SPB-300 SERIES (40 μ HY-2.5 mH)					
PART NO.	Inductance	DC AMPS	NOM DCR Ω	Lead Size	Dimensions
SPB-300	40 μ HY	12.0	.013	14 gauge	A .955 (24.26) ref.
SPB-301	60 μ HY	10.0	.019	15 gauge	B .975 (24.77) ref.
SPB-302	80 μ HY	10.0	.022	15 gauge	C .187 (4.74) ref.
SPB-303	120 μ HY	8.5	.032	16 gauge	D .126 (3.20) ref.
SPB-304	150 μ HY	8.5	.038	16 gauge	E .6875/.8125 (17.46)/(20.63)
SPB-305	175 μ HY	7.0	.046	17 gauge	F SPB-300 - 313
SPB-306	200 μ HY	7.0	.049	17 gauge	.775 (19.69) ref.
SPB-307	300 μ HY	5.5	.073	18 gauge	SPB-314 - 318
SPB-308	400 μ HY	5.5	.086	18 gauge	.940 (23.87) ref.
SPB-309	475 μ HY	4.3	.110	19 gauge	Mounts using a non-metallic #4 screw
SPB-310	550 μ HY	4.3	.120	19 gauge	
SPB-311	700 μ HY	3.4	.165	20 gauge	
SPB-312	825 μ HY	3.4	.183	20 gauge	
SPB-313	900 μ HY	3.4	.195	20 gauge	
SPB-314	1.2 mH	2.6	.281	20 gauge	
SPB-315	1.5 mH	2.6	.323	20 gauge	
SPB-316	1.7 mH	2.6	.343	20 gauge	
SPB-317	2.0 mH	2.1	.440	20 gauge	
SPB-318	2.5 mH	2.1	.525	20 gauge	

() = mm

SPB-400 SERIES (100 μ HY - 3.0 mH)					
PART NO.	Inductance	DC AMPS	NOM DCR Ω	Lead Size	Dimensions
SPB-400	100 μ HY	12.0	.022	14 gauge	A 1.400 (35.56) ref.
SPB-401	150 μ HY	10.0	.034	15 gauge	B 1.04 (26.42) ref.
SPB-402	200 μ HY	10.0	.038	15 gauge	C .288 (7.31) max.
SPB-403	300 μ HY	8.5	.056	16 gauge	D .170 (4.32) min.
SPB-404	375 μ HY	8.5	.065	16 gauge	E .6875/.8125 (17.46)/(20.63)
SPB-405	450 μ HY	8.5	.070	16 gauge	F 1.14 (28.96) ref.
SPB-406	500 μ HY	7.0	.089	17 gauge	Mounts using a non-metallic #8 screw
SPB-407	600 μ HY	7.0	.098	17 gauge	
SPB-408	700 μ HY	5.5	.130	18 gauge	
SPB-409	850 μ HY	5.5	.145	18 gauge	
SPB-410	1.0 mH	5.5	.166	18 gauge	
SPB-411	1.3 mH	4.3	.218	19 gauge	
SPB-412	1.6 mH	4.3	.250	19 gauge	
SPB-413	2.0 mH	3.4	.340	20 gauge	
SPB-414	3.0 mH	3.4	.433	20 gauge	

() = mm

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Economy High Current Inductors

SPE-100

*NOTE: Nominal Lead spacing is .410" (10.41); however, due to lead length, lead spacing is variable.

()=mm

SPE-200

*NOTE: Nominal Lead spacing is .600" (15.24); however, due to lead length, lead spacing is variable.

()=mm

SPE-300

*NOTE: Nominal Lead spacing is .700" (17.78); however, due to lead length, lead spacing is variable.

()=mm

PREM	L _p HY	DC AMPS	NOM DCR Ω	NOM LEAD DIA. IN.
Part Numbers	SPE-100 Series			
SPE-100-*	1.5	12	.003	.064
SPE-101-*	2	10	.004	.057
SPE-102-*	3	8.5	.005	.051
SPE-103-*	3.5	7.0	.006	.045
SPE-104-*	4.2	5.5	.007	.040
SPE-105-*	10	4.3	.010	.036
SPE-106-*	20	4.3	.017	.036
SPE-107-*	28	3.4	.024	.032
SPE-108-*	34	2.6	.031	.029
SPE-109-*	50	2.1	.046	.050
SPE-110-*	100	2.1	.069	.050
SPE-111-*	125	1.7	.090	.045
SPE-112-*	160	1.35	.120	.040
SPE-113-*	250	1.0	.189	.035
SPE-114-*	350	1.0	.235	.035
SPE-115-*	500	.850	.392	.032
SPE-116-*	600	.670	.453	.030
SPE-117-*	750	.530	.641	.025
SPE-118-*	1000	.420	.890	.025
SPE-119-*	0.9	13	.003 max.	.064

PREM	L _p HY	DC AMPS	NOM. DCR Ω	NOM. LEAD DIA.
Part Numbers	SPE-200 Series			
SPE-200-*	27	5.5	.020	.040
SPE-201-*	33	5.5	.022	.040
SPE-202-*	39	5.5	.025	.040
SPE-203-*	47	5.0	.030	.040
SPE-204-*	56	4.8	.036	.036
SPE-205-*	68	4.4	.040	.036
SPE-206-*	82	4.0	.052	.032
† SPE-207-*	100	3.8	.061	.032
† SPE-208-*	120	3.5	.066	.032
† SPE-209-*	150	3.0	.075	.032
† SPE-210-*	180	2.8	.100	.029
SPE-211-*	220	2.35	.110	.029
SPE-212-*	270	2.0	.150	.026

† - Option E not available

PREM	L _p HY	DC AMPS	NOM. DCR Ω	NOM. LEAD DIA.
Part Numbers	SPE-300 Series			
†† SPE-300-*	47	9.0	.019	.057
SPE-301-*	56	8.0	.024	.050
SPE-302-*	68	6.0	.031	.045
SPE-303-*	82	6.0	.034	.045
SPE-304-*	100	6.0	.039	.045
SPE-305-*	120	5.0	.048	.040
SPE-306-*	150	5.0	.054	.040
SPE-307-*	180	4.3	.072	.036
SPE-308-*	220	4.3	.081	.036
SPE-309-*	270	4.3	.091	.036
SPE-310-*	330	3.4	.120	.032
SPE-311-*	390	3.4	.134	.032
†† SPE-312-*	470	3.4	.153	.032
SPE-313-*	560	2.7	.196	.028
SPE-314-*	680	2.5	.228	.028
SPE-315-*	820	2.5	.300	.050
SPE-316-*	1000	2.0	.332	.050
SPE-317-*	1200	2.0	.383	.050
SPE-318-*	1500	1.5	.510	.045

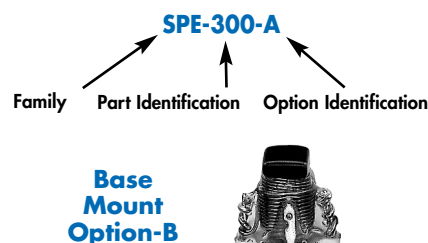
†† - Option C not available

* Options Available A-B-C-D-E-F-O Option Table

- A. Plastic dip coating
- B. Mounted on 94 V-0 base, 3 terminals (2 used). Base dia. .780" (19.81) max.
- C. Shield can supplied with unit.
- D. Mounted on 94 V-0 base and shield can supplied with unit.
- E. For high voltage applications.
- F. Foam pad to raise part .062" above PC Board.
- O. No options. Plain self leads as shown.

Notes: 1. Shield can will reduce "L" up to a maximum of 15% on the 100 and 200 series, and up to 30% on the 300 series of the specified value depending upon which series is being evaluated.
2. Options O, B & D not available on SPE-300 series units.
3. All SPE-300 units incorporate option E.

Ordering Information Example:



Base Option B

- Base diameter .780" (19.81) max.
- 3 terminals on .640" (16.25) dia. circle @ 90°
- .050" (1.27) ref. standoffs above board
- Base height above board = .190" (4.83) max.

Shield Can Option C



Aluminum Shield Can Option C for EMI Suppression

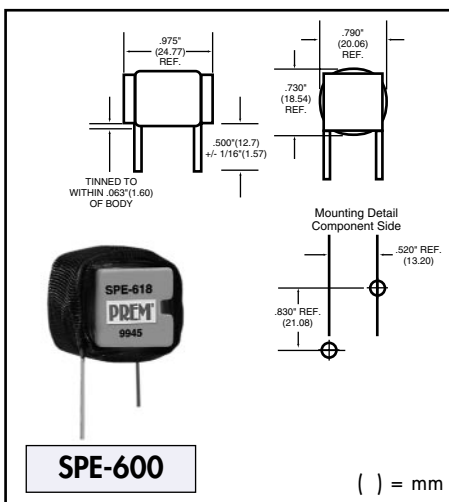
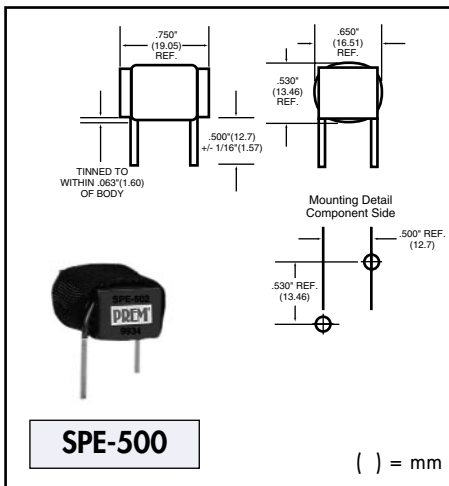
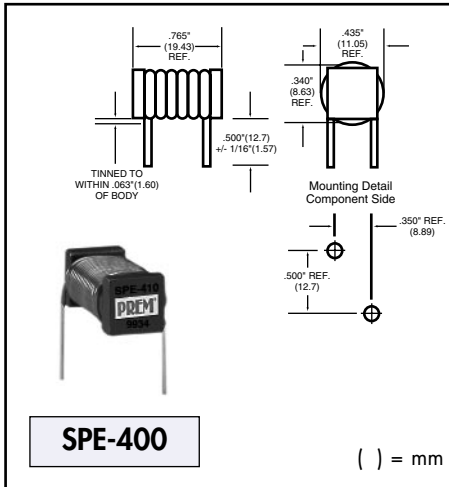
- Can height above board 1.09" (27.69) max.
- Can diameter = .900" (22.86) max.
- Can lug mounting .895" ± .010" (22.73 ± .254) between centers
- Can lugs .060 (1.52) wide X .016 (.406) thick
- Can standoff above board .030 (.762)

() = mm

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Economy High Current Inductors



PREM	L _p HY	DC AMPS	NOM DCR Ω	NOM LEAD DIA. IN.
Part Numbers	SPE-400 Series			
SPE-400-*	1.5	12	.001	.064
SPE-401-*	2	10	.0025	.057
SPE-402-*	3	8.5	.003	.051
SPE-403-*	3.5	7.0	.004	.045
SPE-404-*	4.2	5.5	.006	.040
SPE-405-*	10	4.3	.011	.036
SPE-406-*	20	4.3	.0155	.036
SPE-407-*	28	3.4	.0225	.032
SPE-408-*	34	2.6	.031	.029
SPE-409-*	50	2.1	.045	.025
SPE-410-*	100	2.1	.066	.025
SPE-411-*	125	1.7	.0895	.023
SPE-412-*	160	1.35	.125	.020
SPE-413-*	250	1.0	.1955	.035
SPE-414-*	350	1.0	.2425	.035
SPE-415-*	500	.850	.3645	.032
SPE-416-*	600	.670	.4815	.030
SPE-417-*	750	.530	.672	.025
SPE-418-*	1000	.420	.800	.025
SPE-419-*	0.9	13	.001	.064

PREM	L _p HY	DC AMPS	NOM. DCR Ω	NOM. LEAD DIA. IN.
Part Numbers	SPE-500 Series			
SPE-500-*	27	5.5	.019	.040
SPE-501-*	33	5.5	.021	.040
SPE-502-*	39	5.5	.024	.040
SPE-503-*	47	5.0	.027	.040
SPE-504-*	56	4.8	.033	.036
SPE-505-*	68	4.4	.039	.036
SPE-506-*	82	4.0	.0495	.032
† SPE-507-*	100	3.8	.060	.032
† SPE-508-*	120	3.5	.065	.032
† SPE-509-*	150	3.0	.074	.032
† SPE-510-*	180	2.8	.100	.029
SPE-511-*	220	2.35	.112	.029
SPE-512-*	270	2.0	.143	.025

† - Option E not available

PREM	L _p HY	DC AMPS	NOM. DCR Ω	NOM. LEAD DIA. IN.
Part Numbers	SPE-600 Series			
SPE-600-*	47	9.0	.016	.057
SPE-601-*	56	8.0	.0215	.051
SPE-602-*	68	6.0	.0285	.045
SPE-603-*	82	6.0	.033	.045
SPE-604-*	100	6.0	.038	.045
SPE-605-*	120	5.0	.0465	.040
SPE-606-*	150	5.0	.053	.040
SPE-607-*	180	4.3	.071	.036
SPE-608-*	220	4.3	.079	.036
SPE-609-*	270	4.3	.090	.036
SPE-610-*	330	3.4	.119	.032
SPE-611-*	390	3.4	.133	.032
SPE-612-*	470	3.4	.1545	.032
SPE-613-*	560	2.7	.193	.029
SPE-614-*	680	2.5	.225	.029
SPE-615-*	820	2.5	.2945	.025
SPE-616-*	1000	2.0	.3335	.025
SPE-617-*	1200	2.0	.397	.025
SPE-618-*	1500	1.5	.532	.023

* Options Available E-O Option Table

- E. For high voltage applications.
- O. No options. Plain self leads as shown.

Notes: 1. Option O not available on SPE-600 series units; all SPE-600 units incorporate option E.

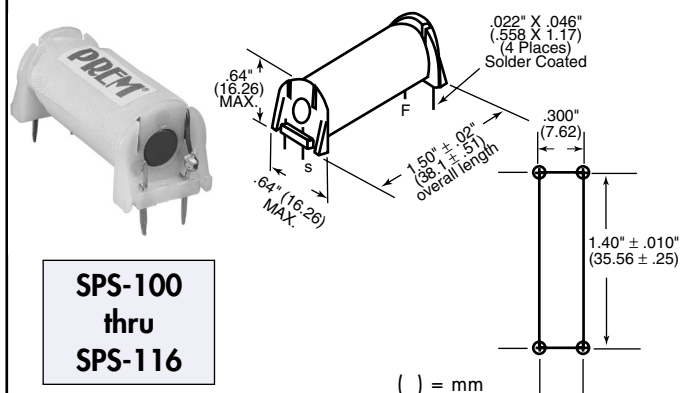
Ordering Information Example:



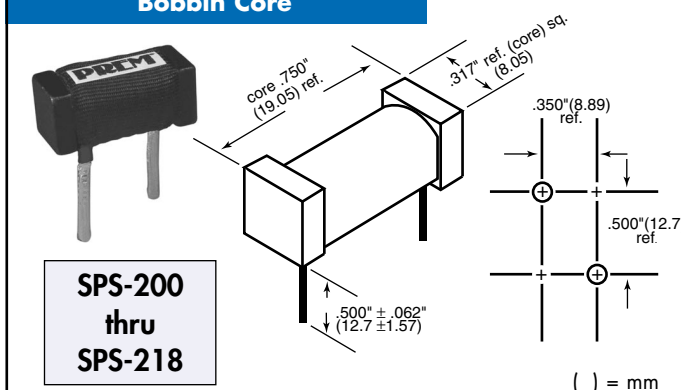
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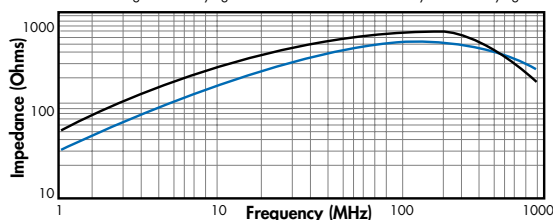
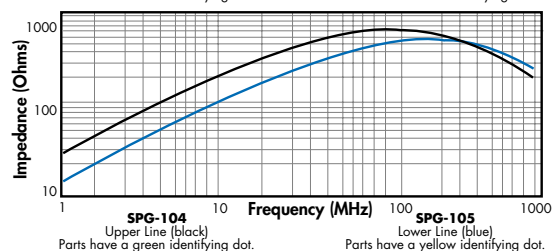
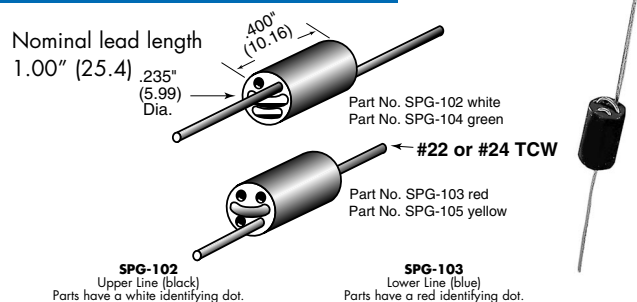
Slug Core PC Mounting



Bobbin Core



Wide Band Shield Bead Ferrite Chokes



PREM	SPS-100 Series (110μHY - 100mHY)		
	Inductance	DC AMPS	NOM DCR
Part No.			
SPS-100	110 μ HY	4.9	.055
SPS-101	140 μ HY	4.3	.075
SPS-102	300 μ HY	3.0	.143
SPS-103	420 μ HY	2.5	.210
SPS-104	600 μ HY	2.1	.310
SPS-105	1.0 mH	1.6	.500
SPS-106	1.3 mH	1.35	.700
SPS-107	1.9 mH	1.2	.900
SPS-108	3.0 mH	.96	1.40
SPS-109	5.0 mH	.75	2.35
SPS-110	8.0 mH	.59	3.70
SPS-111	10.0 mH	.52	5.20
SPS-112	18.0 mH	.39	8.70
SPS-113	28.0 mH	.31	13.7
SPS-114	45.0 mH	.25	22.0
SPS-115	60.0 mH	.21	31.0
SPS-116	100.0 mH	.16	52.0

PREM	SPS-200 Series (1.5μHY - 1.0mHY)			
	Inductance	DC AMPS	NOM DCR	Lead Size (in.)
Part No.				
SPS-200	1.5 μ HY	12.0	.003	.065
SPS-201	2.0 μ HY	10.0	.004	.057
SPS-202	3.0 μ HY	8.5	.005	.051
SPS-203	3.5 μ HY	7.0	.006	.045
SPS-204	4.2 μ HY	5.5	.007	.040
SPS-205	10.0 μ HY	4.3	.011	.036
SPS-206	20.0 μ HY	4.3	.017	.036
SPS-207	28.0 μ HY	3.4	.024	.032
SPS-208	34.0 μ HY	2.6	.031	.032
SPS-209	50.0 μ HY	2.1	.046	.032
SPS-210	100.0 μ HY	2.1	.069	.032
SPS-211	125.0 μ HY	1.7	.090	.032
SPS-212	160.0 μ HY	1.35	.124	.032
SPS-213	250.0 μ HY	1.0	.189	.032
SPS-214	350.0 μ HY	1.0	.235	.032
SPS-215	500.0 μ HY	.85	.392	.032
SPS-216	600.0 μ HY	.67	.453	.032
SPS-217	750.0 μ HY	.53	.641	.032
SPS-218	1.0 mH	.42	.890	.032

* Prem offers a complete line of shield bead chokes for use in attenuating EMI and other unwanted signals in a circuit without contributing to power losses at lower frequencies or DC.
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Power Transformer Specification Formulae

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Transformer Output Voltage Selection

Regulated linear power supplies are used to provide a constant output voltage regardless of input voltage variations over a specified range of high/lowline conditions. The calculation used to determine the AC output voltage required from the transformer in a regulated linear power supply is:

$$V_{ac} = \frac{V_{dc} + V_{reg} + V_{rec} + V_{rip}}{.9} \times \frac{V_{nom}}{V_{lowline}} \times \frac{1}{\sqrt{2}}$$

Where: V_{ac} = AC output voltage to specify for transformer
 V_{dc} = Required DC output voltage of the power supply
 V_{reg} = Voltage drop across the regulator
 V_{rec} = Voltage drop across the rectifier(s)
 V_{rip} = Ripple voltage
 V_{nom} = Line voltage (nominal)
 $V_{lowline}$ = Line voltage (lowline)
 Rectifier efficiency = 90% (.9)

The following table summarizes the results of simplifying this formula for the three basic rectification circuits:

Rectification Circuit	RMS Voltage (Volts)	RMS Current (Amps)
Full-Wave Center Tap	$V_{acC.T.} = 2.092 \times V_{dc} + 8.08$	$I_{ac} = I_{dc} \times 1.2$
Full-Wave Bridge	$V_{ac} = 1.046 \times V_{dc} + 5.23$	$I_{ac} = I_{dc} \times 1.8$
Dual Complementary	$V_{acC.T.} = 2.092 \times V_{dc} + 8.08$	$I_{ac} = I_{dc} \times 1.8$

The formulae in the above table are based on the following assumptions:

V_{nom} = 115 VAC
 $V_{lowline}$ = 95 VAC
 V_{reg} = 3 VDC
 V_{rec} = 1.25 VDC
 V_{rip} = 10% of V_{dc}

Examples:

#1: A regulated linear power supply is needed to provide 5V DC at 1A DC from an input voltage of 115V AC.

Full Wave Center Tap:

$V_{acC.T.} = 2.092 \times V_{dc} + 8.08$ $I_{ac} = I_{dc} \times 1.2$
 $V_{acC.T.} = 2.092 \times 5 + 8.08$ $I_{ac} = 1 \times 1.2$
 $V_{acC.T.} = 18.54V$ $I_{ac} = 1.2A$

$$VA = 18.54 \times 1.2 = 22.25 \text{ Watts}$$

Full Wave Bridge:

$V_{ac} = 1.046 \times V_{dc} + 5.23$ $I_{ac} = I_{dc} \times 1.8$
 $V_{ac} = 1.046 \times 5 + 5.23$ $I_{ac} = 1 \times 1.8$
 $V_{ac} = 10.46V$ $I_{ac} = 1.8A$

$$VA = 10.46 \times 1.8 = 18.83 \text{ Watts}$$

Examples continued:

#2: A regulated linear power supply is needed to supply $\pm 15V$ DC at 50mA DC with a 115V AC primary input voltage.

Dual Complementary Circuit:

$V_{acC.T.} = 2.092 \times V_{dc} + 8.08$ $I_{ac} = I_{dc} \times 1.8$
 $V_{acC.T.} = 2.092 \times 15 + 8.08$ $I_{ac} = .050 \times 1.8$
 $V_{acC.T.} = 39.46$ $I_{ac} = .090A$

$$VA = 39.46 \times .090 = 3.55 \text{ Watts}$$

It is also informative to look at the power dissipated by the regulator in order that we are sure that it is specified correctly. Let us consider the power dissipated in the worst-case condition: high line, full-load. The dissipated heat in watts is calculated as follows:

Regulator dissipated heat:

$$\text{Watts} = I_{dc} \left[\frac{V_{highline}}{V_{lowline}} (V_{dc} + V_{reg}) - V_{dc} \right]$$

In Example #2, assuming a high line voltage of 130V AC, this works out to be:

$$\begin{aligned} &0.050 \times (130/95 \times (15 + 3) - 15) \\ &0.050 \times (24.63 - 15) \\ &.482 \text{ Watts} \end{aligned}$$

It is important that the regulator be properly heat-sinked to dissipate this heat.

TEMPERATURE RISE CALCULATION(S)

Because the DC Resistance (DCR) of copper increases proportionately with temperature, it is possible to obtain approximations of temperature rise given the measured increase in the DCR of a transformer's winding. For the best results, use the innermost winding that has the highest value of DCR as this will exhibit the most change. Observe the following steps:

- Step 1- Measure the DCR of the winding at ambient (room) temperature prior to energizing. Label this value R_1 . Energize the circuit and let run until stabilized.
- Step 2- De-energize the circuit and **immediately** measure the DCR at the same point as that done in step 1. Label this value R_2
- Step 3 - Apply the two recorded values in the following formula:

$$\frac{\left(\frac{R_2}{R_1} \right) - 1}{.00393} = \Delta T$$

Delta T is the degrees Centigrade **rise** (above ambient) of the winding. The operating temperature of the part is the sum of the ambient and the ΔT .

Telecom/Audio Transformer Formulae

Prem Magnetics, Inc. • 3521 North Chapel Hill Road • McHenry, IL 60050 • Tel: 815-385-2700 • Fax: 815-385-8578 • E-Mail: sales@premmag.com • Website: http://www.premmag.com

Definitions

Frequency Response - The ratio of the secondary voltage over the specified frequency band to the secondary voltage at the mid-band frequency, or any arbitrary reference frequency, with the source voltage held constant. This value is expressed in dB's.

Insertion Loss - The power available at the load with the transformer in the circuit vs. power available without the transformer. This value is expressed in dB's.

Return Loss - The ratio of the fractional energy reflection caused by an impedance mismatch. This value is expressed in dB's.

Longitudinal Balance - The ratio of a signal that develops from any unbalance when a balanced longitudinal signal is applied. This value is expressed in dB's.

Maximum DC Unbalance - The maximum Direct Current allowed in the transformer's winding that does not degrade its performance characteristics.

Trans-Hybrid Loss (Balance) - The measure of the isolation between the "receive" and "transmit" ports of a pair of hybrid transformers comprising a 2 Wire to 4 Wire Conversion circuit. It is also a measure of the balance between the two matched windings of a single hybrid transformer. This value is expressed in dB's.

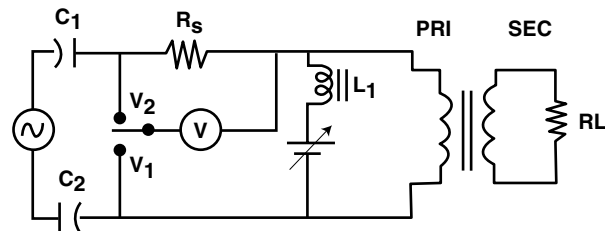
Harmonic Distortion - The measure of the amplitude of the undesired harmonic signal generated, and expressed as a percentage of the fundamental frequency or in dB's.

SPT TEST METHODS

All Tests:

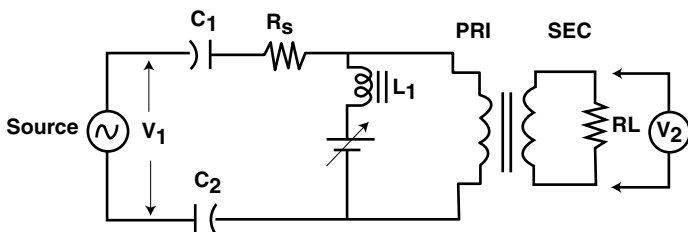
R_S = Primary Impedance
 = 600Ω or 900Ω
 R_L = 600Ω
 $C_1 = C_2 = 100\mu\text{f}$
 L_1 = Hold Coil 5Hy to 10Hy @ 1.0V, 1KHz; 120mA DC
 All resistors $\pm 1\%$
 Source = 600Ω external oscillator

Reflected Impedance:



1. Measure V_1 & V_2 2. $Z_{\text{Ref}} = \frac{R_S V_1}{V_2}$

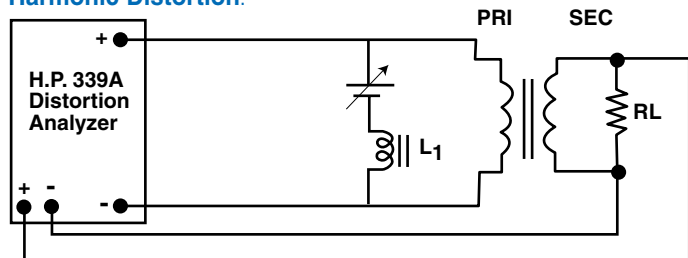
Frequency Response and Insertion Loss:



$$\text{I.L.} = 10 \log \left[\frac{(V_1)^2 R_L}{4(V_2)^2 R_S} \right] \text{ dB}$$

$$\text{F.R.} = 20 \log \left[\frac{V_2}{V_2'} \right] \quad \begin{array}{l} V_2 = @ \text{ Test Freq.} \\ V_2' = @ 1 \text{ KHz ref.} \\ V_1 = .775 \text{ V Constant} \end{array}$$

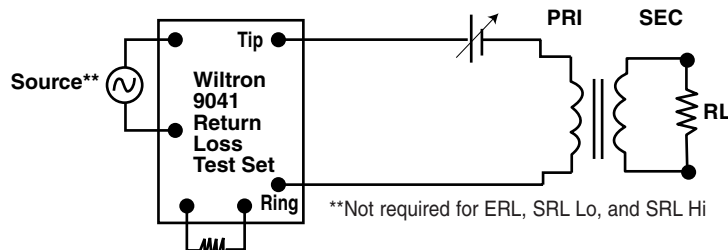
Harmonic Distortion:



Notes:

1. Set internal oscillator of HP339A to 0dBm level.
2. Set variable DC power supply to required current.

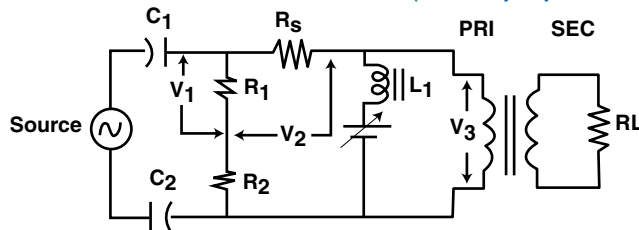
Return Loss: Prem method



**Not required for ERL, SRL Lo, and SRL Hi

For single Freq. (300 Hz) measurements, use external oscillator or Wilcom T-194B test set. Set level to 0dB @ 1KHz, change frequency to 300 Hz and read return loss on Wilcom Model 9041.

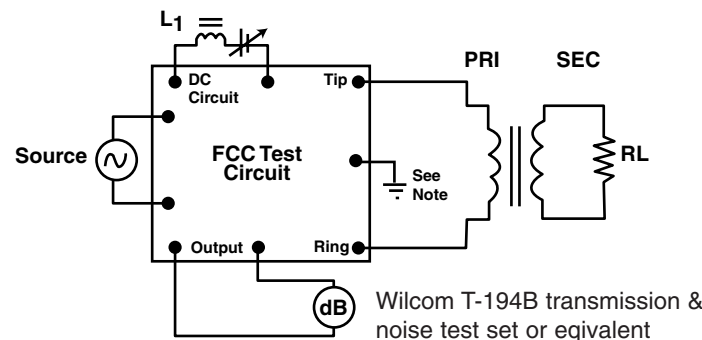
Return Loss: Alternate method (results may vary from Prem method)



$$\text{Return loss} = 20 \log \frac{V_1}{V_2} \text{ dB}$$

$R_1 = R_2 = R_3 = 600\Omega$ or 900Ω $V_3 = \text{Set to } -9\text{dBm}$

Longitudinal Balance:



Note: The ground connection depends on the unit under test – see specific hookup A, B, or C.

