





MS On-Board / Online Catalog 2018

Standard Drawn EMI/RFI Shields

Seamless Protective Cages!



[Rev / June 26, 2018 1:17 PM]



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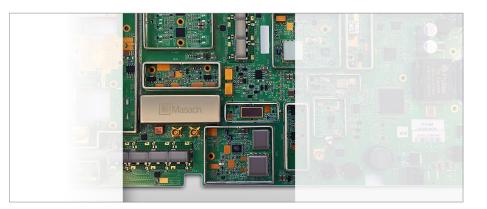
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Setting the Standard for Shielding.



Masach brings twenty five years of know-how and expertise into every standard shield produced. Our ever-growing selection of standard EMI/RFI shields is the largest in the industry, saving our customers precious time and money while catering to the electronic industry's growing high frequency and RF applications. With emphasis on technology and design, Masach drawn EMI/RFI shields boast top performance across the metrics, featuring a seamless protective cage, robust construction, optimal planarity and two-piece shield design.

Whatever your EMI/RFI challenge..



Introduction



Masach

Masach specializes in board level EMI/RFI shielding design and production for small, medium and large scale runs. Founded in 1994, Masach is a globally recognized and leading supplier of some of the world's largest electronic companies, driven by highest quality customer service with uncompromised product performance.

Every step of the production cycle, from raw materials and design to packaging and shipping, is meticulously executed under one roof leveraging dedicated hydraulic presses, cutting-edge tool room assemblies, forming operations and more.

Masach utilizes the latest laser technology to deliver most advanced 3D cutting of formed or bent shields made of thin gage materials, CNC punching and more. We remain committed to meet the needs of every industry – from telecommunications and network equipment to military and medical – with the right board level EMI/RFI shielding solution for every challenge.



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Hermetically Sealed EMI/RFI Shields.



A higher level of protection



EMI/RFI engineers prefer hermetically sealed shields at high frequencies due their superior performance over time. Designed for highest shielding performance leveraging a unique hermetic design and fabrication process, Masach seamless protective cages are in a class of their own.

Most conventional shields are produced by bending the frames and covers, leaving slits for dust and interference. Masach's unique fabrication process utilizes drawn frames and snap on covers to produce a seamless, more hermetic shield that is as durable as it is effective.

Featuring a convenient two-piece design, our shields enable to inspect and repair shielded components without having to remove the entire shield. Masach shields are known for their planarity, offering optimal yield of reflow soldering for even better overall performance. Our ever-growing selection of EMI/RFI hermetically sealed shields are suitable to small, medium and large-scale runs.

Seamless Protective Cage!



Features & Benefits

- Seamless Protective Cage for higher shielding effectiveness
- Optimal Planarity for higher yield on reflow soldering
- Solid Construction to resist dents and warps
- Two-piece Shield Design enables to repair components without removing the shield, saving time and reducing repair damage

Largest Selection in the Industry.

Comprehensive Library of Two-piece EMI/RFI Shields



Extensive range of Drawn EMI/RFI shields from Masach, boosts flexibility

LEARN MORE

Enjoy our extensive range of drawn shields for utmost flexibility in design



Masach offers the largest selection of standard drawn EMI/RFI shields in the electronics industry. Our ever-growing range of sizes delivers more flexibility in surface mount configurations where interference may occur or is identified during the board design phase. The highly reliable two-piece design (frame and cover) accommodates virtually any surface mount application.

Fast and Economical Approach.

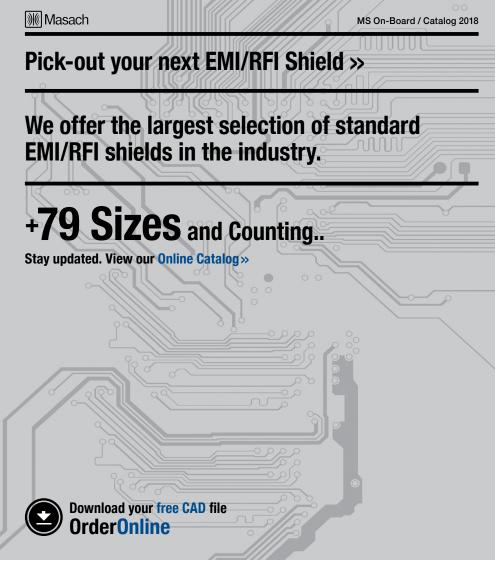


Shorter engineering design time, lower product cost and quicker time to market



Masach standard shields saves on custom design costs, doing away with the need to produce expensive prototypes for evaluation, as well as significantly reduces delivery times. Our standard drawn EMI/RFI shields consist of tin-plated steel alloys, commonly used for board-level shielding due to their exceptional mechanical formability, environmental compliance, and relative low cost.

Engineers taking part in the board design phase can take advantage of the information concerning all mechanical aspects of Masach shields, conveniently available for download (PDF datasheets and CAD files), from the website product page.



NOTE. All Items in this category are according to our Tinplate Standard Steel: (1) TS275E 8.4/8.4 (2) Electrolytic Tin Plate As Per EN 10202:2001 Min Tin Thickness 3.5 um (3) General tolerance (+/-) 0.2mm unless otherwise specified. Non dimensioned items remain Masach Tech Ltd. property.

If you cannot find a standard shield according to your requirements, you are welcome to contact us at: info@masach.com and we will make the adjustments or find a suitable solution for your specific needs.



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MS On-Board / Catalog 2018

	MC DN	Description	Ext.	Ext. Dimensions (mm)		n)
MS SET PN.	MS PN.	Description	L	•	W	н

MS087-10	MS087-10F	EMI/RFI Frame	8.7	6.3	3	
~	MS087-10C	EMI/RFI Cover	9.3	6.9	2.7	
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel		
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic Perforated	🗹 Tin-Ste	Tin-Steel I Nickel Silver		

MS093-10	MS093-10F	EMI/RFI Frame	9.3	9.3	5	
<u> </u>	MS093-10C	EMI/RFI Cover	9.7	3		
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece I 1-Piece	Hermetic Perforated	🗹 Tin-Ste	Tin-Steel I Nickel Silver		

MS110-10	MS110-10F	EMI/RFI Frame	11	11	2.8	
	MS110-10C	EMI/RFI Cover	11.6 11.6 2.8			
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel		
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Steel I Nickel Silver			

MS110-20	MS110-20F	EMI/RFI Frame	11	11	6		
	MS110-20C	EMI/RFI Cover	11.6 11.6 2.8				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece I 1-Piece	Hermetic Perforated	Tin-Steel I Nickel Silver				

MS130-10	MS130-10F	EMI/RFI Frame	13	13	5		
	MS130-10C	EMI/RFI Cover	13.6	3			
	2-Piece Shield	Hermetically Sealed	Tin-Steel	in-Steel			
	Optional Configurations						
	2-Piece I 1-Piece	Hermetic Perforated	Tin-Steel I Nickel Silver				

	MS PN.	Description	Ext. Dimensions (mm)			
MS SET PN.	MIS PN.	Description	L 🔻	W	Н	

	Optional Configurations	Hermetic Perforated	Tin-St	eel 🗹 Nick	el Silver
	On the set One firm with a set				
	2-Piece Shield	Hermetically Sealed	Tin-Steel		
~	MS135-20C	EMI/RFI Cover	14.1	14.1	3
MS135-20	MS135-20F	EMI/RFI Frame	13.5	13.5	5.1

MS148-10	MS148-10F	EMI/RFI Frame	14.8	8.9	2
	MS148-10C	EMI/RFI Cover	15.2	2	
	2-Piece Shield	Hermetically Sealed	Tin-Steel		
	Optional Configurations				
	2-Piece 🗹 1-Piece	Hermetic DPerforated	🗹 Tin-St	eel 🗹 Nick	el Silver

MS156-10	MS156-10F	EMI/RFI Frame	15.6	10.6	3	
	MS156-10C	EMI/RFI Cover	16	2.6		
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	🗹 Tin-Ste	eel 🗹 Nick	el Silver	

EMI/RFI Frame



MS168-10F

16.8

13.5

5

	2-Piece 🗹 1-Piece	Hermetic DPerforated	🗹 Tin-St	eel 🗹 Nick	el Silver
	Optional Configurations				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel	
	MS183-10C	EMI/RFI Cover	18.9	11.1	3
MS183-10	MS183-10F	EMI/RFI Frame	18.3	10.5	3

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		Description	Ext.	Dime	ensions (mn	n)
MS SET PN.	MS PN.	Description	L	•	W	Н

MS190-10	MS190-10F	EMI/RFI Frame	19	13.9	2
\langle	MS190-10C	EMI/RFI Cover	19.4 14.3 1.7		
	2-Piece Shield	Hermetically Sealed	Tin-Steel		
	Optional Configurations				
	2-Piece 🗹 1-Piece	Hermetic Perforated	Tin-Steel I Nickel Silver		

and a state of the	☑ 2-Piece ☑ 1-Piece	Hermetic DPerforated	🗹 Tin-Ste	Tin-Steel M Nickel Silver			
	Optional Configurations						
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	MS193-10C	EMI/RFI Cover	19.9	2.7			
MS193-10	MS193-10F	EMI/RFI Frame	19.3	10.5	3		

MS206-10	MS206-10F	EMI/RFI Frame	20.6	17.8	3	
	MS206-10C	EMI/RFI Cover	21.2	2.7		
	2-Piece Shield	Hermetically Sealed	Tin-Steel	teel		
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	🗹 Tin-Ste	eel 🗹 Nick	el Silver	

MS209-10	MS209-10F	EMI/RFI Frame	20.9	15.3	1.65		
	MS209-10C	EMI/RFI Cover	21.3	15.7	1.7		
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic Perforated	🗹 Tin-Ste	eel 🗹 Nick	el Silver		

MS209-20	MS209-20F	EMI/RFI Frame	20.9	15.3	2		
	MS209-20C	EMI/RFI Cover	21.3 15.7 1.7				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic DPerforated	🗹 Tin-Ste	eel 🗹 Nick	el Silver		

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MS SET PN.	MS PN.	Description	Ext. Dime	ensions (mn	n)
MS SET PN.	MS PN.	Description	L 🔻	W	Н

MS210-10	MS210-10F	EMI/RFI Frame	21	12	5		
	MS210-10C	EMI/RFI Cover	21.6	4			
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	🗹 1-Piece 🗹 2-Piece	Hermetic Perforated	🗹 Tin-Ste	eel 🗹 Nick	el Silver		

MS213-10	MS213-10F	EMI/RFI Frame	21.3	19.9	2.9			
	MS213-10C	EMI/RFI Cover	21.7	20.3	2.5			
	2-Piece Shield	Hermetically Sealed	Tin-Steel					
	Optional Configurations		I					
	2-Piece 🗹 1-Piece	Hermetic I Perforated	🗹 Tin-Ste	eel 🗹 Nick	el Silver			

	2-Piece 🗹 1-Piece	Hermetic I Perforated	Tin-Steel I Nickel Silver				
	Optional Configurations						
	2-Piece Shield	Hermetically Sealed	Tin-Steel				
	MS220-10C	EMI/RFI Cover	22.6 19.9 3				
MS220-10	MS220-10F	EMI/RFI Frame	22	19.3	3.3		



 MS220-20F
 EMI/RFI Frame
 22
 17.7
 3

 MS220-20C
 EMI/RFI Cover
 22.4
 18.1
 3

 2-Piece Shield
 Hermetically Sealed
 Tin-Steel
 V

 Optional Configurations
 Image: Configuration of the steel of

MS220-30	MS220-30F	EMI/RFI Frame	22	11.3	2.8		
	MS220-30C	EMI/RFI Cover	22.6 11.9 2.8				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
and a second	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Steel I Nickel Silver				

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		Description	Ext. Dimensions (mm)			n)
MS SET PN.	MS PN.	Description	L	•	W	Н

MS220-40	MS220-40F	EMI/RFI Frame	22	11.3	7		
	MS220-40C	EMI/RFI Cover	22.6 11.9 2.8				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic DPerforated	🗹 Tin-Ste	eel 🗹 Nick	el Silver		

MS223-10	MS223-10F	EMI/RFI Frame	22.3	17.3	5		
	MS223-10C	EMI/RFI Cover	22.7	4			
	2-Piece Shield	Hermetically Sealed	Tin-Steel	el			
	Optional Configurations						
	2-Piece I 1-Piece	Hermetic Perforated	Tin-Steel I Nickel Silver				

MS226-10	MS226-10F	EMI/RFI Frame	22.6	17.1	2		
	MS226-10C	EMI/RFI Cover	23 17.5 2				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Ste	eel 🗹 Nick	el Silver		

MS230-10	MS230-10F	EMI/RFI Frame	23	11.7	5	
	MS230-10C	EMI/RFI Cover	23.6	12.3	3	
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Ste	eel 🗹 Nick	el Silver	

MS233-10	MS233-10F	EMI/RFI Frame	23.3	17.5	5	
	MS233-10C	EMI/RFI Cover	23.7 17.9 2.8			
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Fin-Steel		
	Optional Configurations					
\checkmark	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Steel I Nickel Silver			

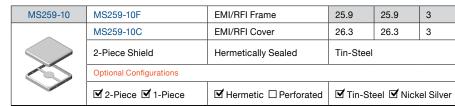
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	MS PN.	Description	Ext. Dime	ensions (mn	n)
MS SET PN.	MIS PN.	Description	L 🔻	W	Н

	Optional Configurations	Hermetic DPerforated		eel 🗹 Nick	al Olivean
	2-Piece Shield	Hermetically Sealed	Tin-Steel		
	MS233-20C	EMI/RFI Cover	23.7	14.9	3
MS233-20	MS233-20F	EMI/RFI Frame	23.3	14.5	3

MS256-10	MS256-10F	EMI/RFI Frame	25.6	15.5	2.3	
	MS256-10C	EMI/RFI Cover	26	15.9	2.3	
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Ste	Tin-Steel I Nickel Silver		

MS257-10	MS257-10F	EMI/RFI Frame	25.7	25.7	6.5	
	MS257-10C	EMI/RFI Cover	26.3 26.3 4			
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Steel I Nickel Silver			



MS260-10	MS260-10F	EMI/RFI Frame	26	23	7.8	
	MS260-10C	EMI/RFI Cover	26.6 23.6 4			
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Ste	Tin-Steel I Nickel Silv		

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		Description	Ext.	Ext. Dimensions (mm)		
MS SET PN.	MS PN.	Description	L	•	W	Н

MS263-10	MS263-10F	EMI/RFI Frame	26.3	16.8	4.5		
)	MS263-10C	EMI/RFI Cover	26.9	4			
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic I Perforated	Tin-Ste	eel 🗹 Nick	el Silver		

MS263-20	MS263-20F	EMI/RFI Frame	26.3	19.8	8.1		
~	MS263-20C	EMI/RFI Cover	26.9 20.4 3.7				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	teel			
	Optional Configurations						
	2-Piece I 1-Piece	Hermetic Perforated	Tin-Steel I Nickel Silver				

MS268-10	MS268-10F	EMI/RFI Frame	26.8	15.6	2.5		
	MS268-10C	EMI/RFI Cover	27.4 16.2 2.5				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
\checkmark	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Ste	Tin-Steel I Nickel Silver			

MS268-20	MS268-20F	EMI/RFI Frame	26.8	15.6	4		
\langle	MS268-20C	EMI/RFI Cover	27.4	16.2	2.5		
\sim	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic DPerforated	🗹 Tin-St	eel 🗹 Nick	el Silver		

MS288-10	MS288-10F	EMI/RFI Frame	28.8	19.4	5		
\frown	MS288-10C	EMI/RFI Cover	29.4 20 4				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Steel I Nickel Silver				

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	MS PN.	Description	Ext. Dime	ensions (mn	n)
MS SET PN.	MIS PN.	Description	L 🔻	W	Н

\sim	Optional Configurations						
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	MS293-10C	EMI/RFI Cover	29.9	4			
MS293-10	MS293-10F	EMI/RFI Frame	29.3	25.3	6.4		

MS300-10	MS300-10F	EMI/RFI Frame	30	24.4	3.5			
~	MS300-10C	EMI/RFI Cover	30.6	3				
$\langle \rangle$	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel				
	Optional Configurations		ł					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Steel I Nickel Silver					

MS302-10	MS302-10F	EMI/RFI Frame	30.2	18.9	3	
	MS302-10C	EMI/RFI Cover	30.8 19.5 2.7			
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic Perforated	Tin-Steel I Nickel Silver			



MS308-10F EMI/RFI Frame 30.8 17.8 4.4 EMI/RFI Cover 4.4 MS308-10C 31.4 18.4 Hermetically Sealed 2-Piece Shield Tin-Steel **Optional Configurations** 2-Piece 1-Piece Hermetic Perforated Tin-Steel Nickel Silver

MS310-10	MS310-10F	EMI/RFI Frame	31	17.1	3		
	MS310-10C	EMI/RFI Cover	31.6 17.7 2.7				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
\sim	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Steel I Nickel Silver				

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		Description	Ext. Dimensions (mm)			n)
MS SET PN.	MS PN.	Description	L	•	W	Н

MS312-10	MS312-10F	EMI/RFI Frame	31.2	30	5	
	MS312-10C	EMI/RFI Cover	31.8 30.6 4			
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel		
$\langle \rangle$	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic Perforated	Tin-Steel I Nickel Silver			

MS321-10	MS321-10F	EMI/RFI Frame	32.1	16.6	2.5		
\rangle	MS321-10C	EMI/RFI Cover	32.5	17	2.2		
\sim	2-Piece Shield	Hermetically Sealed	Tin-Steel	Steel			
\sim	Optional Configurations						
	2-Piece I 1-Piece	Hermetic Perforated	Tin-Steel I Nickel Silver				

MS323-10	MS323-10F	EMI/RFI Frame	32.3	23.8	3.7		
	MS323-10C	EMI/RFI Cover	32.9	24.4	4		
\sim	2-Piece Shield	Hermetically Sealed	Tin-Steel	l			
\sim	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic Perforated	Tin-Ste	eel 🗹 Nick	el Silver		

	Optional Configurations						
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	MS323-20C	EMI/RFI Cover	32.9	24.4	4		
MS323-20	MS323-20F	EMI/RFI Frame	32.3	23.8	4.7		

	2-Piece 1-Piece	Hermetic Perforated	🗹 Tin-St	eel 🗹 Nick	el Silver	
	Optional Configurations					
\bigcirc	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel		
	MS323-30C	EMI/RFI Cover	32.9	24.4	4	
MS323-30	MS323-30F	EMI/RFI Frame	32.3	23.8	9	

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MS SET PN.	MS PN.	Description	Ext. Dime	ensions (mn	n)
MS SET PN.	MS PN.	Description	L 🔻	W	Н

	2-Piece 1-Piece	Hermetic DPerforated	Tin-Ste	eel 🗹 Nick	el Silver			
	\sim	Optional Configurations						
		2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
Â	MS329-10C	EMI/RFI Cover	33.3 21.1 2.2					
	MS329-10	MS329-10F	EMI/RFI Frame	32.9	20.7	2.5		

MS333-10	MS333-10F	EMI/RFI Frame	33.3	13.3	4.4		
	MS333-10C	EMI/RFI Cover	33.9 13.9 3.5				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Ste	eel 🗹 Nick	el Silver		

MS338-10	MS338-10F	EMI/RFI Frame	33.8	30.3	3.3	
	MS338-10C	EMI/RFI Cover	34.2 30.7 3.2			
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
\searrow	2-Piece 🗹 1-Piece	Hermetic Perforated	🗹 Tin-Ste	eel 🗹 Nick	el Silver	

EMI/RFI Frame



 MS345-10C
 EMI/RFI Cover
 35.1
 23.9
 3.3

 2-Piece Shield
 Hermetically Sealed
 Tin-Steel
 Image: Configuration Steel

 Optional Configurations
 Image: Configuration Steel
 Image: Configuration Steel
 Image: Configuration Steel

 Image: Configuration Steel
 Image: Configuration Steel
 Image: Configuration Steel
 Image: Configuration Steel

34.5

23.3

3.5

MS353-10	MS353-10F	EMI/RFI Frame	35.3	20	6.4	
	MS353-10C	EMI/RFI Cover	35.7 20.4 3.5			
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel		
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Steel I Nickel Silver			

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MS On-Board / Catalog 2018

		Description	Ext. Dimensions (mm)		
MS SET PN.	MS PN.	Description	L ,	r W	Н

MS353-20	MS353-20F	EMI/RFI Frame	35.3	22.3	6.4	
$\langle \rangle$	MS353-20C	EMI/RFI Cover	35.7	22.7	3.5	
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Ste	eel 🗹 Nick	el Silver	

MS355-10	MS355-10F	EMI/RFI Frame	35.5	19	5.5		
	MS355-10C	EMI/RFI Cover	36.1	19.6	3.8		
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece I 1-Piece	Hermetic Perforated	Tin-Ste	eel 🗹 Nick	el Silver		

MS366-10	MS366-10F	EMI/RFI Frame	36.6	34.1	3.3	
<u></u>	MS366-10C	EMI/RFI Cover	37 34.5 2.8			
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	🗹 Tin-Ste	eel 🗹 Nick	el Silver	

MS378-10	MS378-10F	EMI/RFI Frame	37.8	21.6	3		
\frown	MS378-10C	EMI/RFI Cover	38.4	22.2	2.7		
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic Perforated	🗹 Tin-Ste	eel 🗹 Nick	el Silver		

	☑ 2-Piece ☑ 1-Piece	Hermetic Perforated	Tin-Ste	eel 🗹 Nick	el Silver	
	Optional Configurations					
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	MS382-10C	EMI/RFI Cover	38.8 33.9 3			
MS382-10	MS382-10F	EMI/RFI Frame	38.2	33.3	5	

Ы

	MS PN.	Description	Ext. Dime	ensions (mr	n)
MS SET PN.	MS PN.	Description	L 🔻	W	Н

	2-Piece I 1-Piece	Hermetic Derforated	☑ Tin-Steel ☑ Nickel Silver					
		Optional Configurations						
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel				
		MS384-10C	EMI/RFI Cover	39	4			
	MS384-10	MS384-10F	EMI/RFI Frame	38.4	37.6	11		

MS400-10	MS400-10F	EMI/RFI Frame	40	18.3	4	
	MS400-10C	EMI/RFI Cover	40.6 18.9 3			
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel		
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Steel I Nickel Silver			

MS402-10	MS402-10F	EMI/RFI Frame	40.2	34.6	5.3		
	MS402-10C	EMI/RFI Cover	40.8 35.2 3.5				
\bigotimes	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic Perforated	Tin-Steel I Nickel Silver				

EMI/RFI Frame



 MS412-10C
 EMI/RFI Cover
 41.8
 14.2
 3.2

 2-Piece Shield
 Hermetically Sealed
 Tin-Steel
 ✓

 Optional Configurations
 ✓
 ✓
 ✓

 ✓
 2-Piece ✓
 1-Piece
 ✓
 Hermetic □ Perforated
 ✓

41.2

13.6

5.1

	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Steel I Nickel Silver				
	Optional Configurations						
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	MS415-10C	EMI/RFI Cover	42.1	4			
MS415-10	MS415-10F	EMI/RFI Frame	41.5	16.8	6.8		

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MS On-Board / Catalog 2018

		Description	Ext. D	ime	ensions (mr	n)
MS SET PN.	MS PN.	Description	L	•	w	Н

MS415-20	MS415-20F	EMI/RFI Frame	41.5	26.5	9.5		
	MS415-20C	EMI/RFI Cover	42.1 27.1 5				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Steel I Nickel Silver				

MS423-10	MS423-10F	EMI/RFI Frame	42.3	15.3	4.4
	MS423-10C	EMI/RFI Cover	42.9	3.5	
	2-Piece Shield	Hermetically Sealed	Tin-Steel		
	Optional Configurations				
	2-Piece I 1-Piece	Hermetic Perforated	Tin-Steel I Nickel Silver		

MS448-10	MS448-10F	EMI/RFI Frame	44.8	18.2	3		
	MS448-10C	EMI/RFI Cover	45.2 18.6 2.8				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Steel I Nickel Silver				

MS448-20	MS448-20F	EMI/RFI Frame	44.8	18.2	5.7		
	MS448-20C	EMI/RFI Cover	45.2	2.8			
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic Perforated	Tin-Steel I Nickel Silver				

MS453-10	MS453-10F	EMI/RFI Frame	45.3	16.2	6		
	MS453-10C	EMI/RFI Cover	45.9 16.8 2.9				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Steel I Nickel Silver				

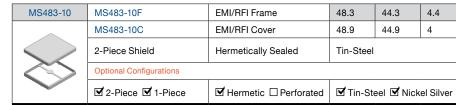
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	MS PN.	Description	Ext. Dime	ensions (mn	n)
MS SET PN.	MIS PN.	Description	L 🔻	W	Н

		2-Piece 1-Piece	Hermetic Perforated	🗹 Tin-Ste	eel 🗹 Nick	el Silver
		Optional Configurations				
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
		MS466-10C	EMI/RFI Cover	47.2	17.9	4
	MS466-10	MS466-10F	EMI/RFI Frame	46.6	17.3	5

MS473-10	MS473-10F	EMI/RFI Frame	47.3	23.3	5.3	
	MS473-10C	EMI/RFI Cover	47.9	23.9	3.5	
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic I Perforated	Tin-Ste	eel 🗹 Nick	el Silver	

MS477-10	MS477-10F	EMI/RFI Frame	47.7	18.2	4	
	MS477-10C	EMI/RFI Cover	48.3	18.8	3	
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Ste	eel 🗹 Nick	el Silver	



MS511-10	MS511-10F	EMI/RFI Frame	51.1	25.7	6.5		
~	MS511-10C	EMI/RFI Cover	51.7 26.3 4				
	2-Piece Shield	Hermetically Sealed	Tin-Steel	Tin-Steel			
	Optional Configurations						
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-St	eel 🗹 Nick	el Silver		

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MS On-Board / Catalog 2018

		Description	Ext. Dimensions (mm)			n)
MS SET PN.	MS PN.	Description	L	•	W	Н

MS511-20	MS511-20F	EMI/RFI Frame	51.1	38.4	6.5	
	MS511-20C	EMI/RFI Cover	51.7 39 4			
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic Perforated	Tin-Steel I Nickel Silver			

	☑ 2-Piece ☑ 1-Piece	Hermetic DPerforated	Tin-Steel M Nickel Silver			
	Optional Configurations					
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
>	MS513-10C	EMI/RFI Cover	51.9	3.5		
MS513-10	MS513-10F	EMI/RFI Frame	51.3	26.5	9.5	

MS544-10	MS544-10F	EMI/RFI Frame	54.4	23.9	7.5	
	MS544-10C	EMI/RFI Cover	55	4		
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic DPerforated	Tin-Ste	eel 🗹 Nick	el Silver	

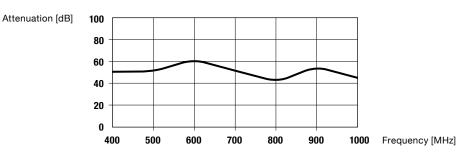
MS544-20	MS544-20F	EMI/RFI Frame	54.4	23.9	13.5	
	MS544-20C	EMI/RFI Cover	55 24.5 3.5			
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	Optional Configurations					
	2-Piece 🗹 1-Piece	Hermetic I Perforated	🗹 Tin-Ste	eel 🗹 Nick	el Silver	

	Optional Configurations	Hermetic DPerforated		eel 🗹 Nick		
	2-Piece Shield	Hermetically Sealed	Tin-Steel			
	MS585-10C	EMI/RFI Cover	59.1 50.3 3			
MS585-10	MS585-10F	EMI/RFI Frame	58.5	49.7	4.7	

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Typical PCB Shielding Effectiveness.

Masach



[Typical performance of 51.1mm x 38.4mm EMI/RFI shield as reference]

Tinplate Steel Stock Storage & Handling

Materials Specification: Cold Reduced Electrolytic Tinplate Steel Tinplate Standard: TS275E8.4/8.4 EN 10202:2001

The materials used to fabricate these shields are based on mild steel with less than 0.12% Carbon and no more than 1% alloying elements and naturally occurring impurities. Major shielding elements are thus ferrous and tin. The thin resultant layer of tin enables shields to be easily soldered to PC boards as well as to resist corrosion during the assembly process. Tin plate shields offer the most cost effective shielding protection provided the following care is taken during storage and handling:

- 1. Do not pass these components through a salt bath test, they are not designed for such severe treatment. Alternate materials (albeit more expensive) are available.
- 2. Frames should be left in the package trays until assembly to preserve shield planarity.
- 3. Store in a cool dry place and avoid water or other liquids from coming into contact with shields.
- Mild scratching and scuffs are natural for processed shields from pre-plated material. Protective films can be ordered especially for unblemished finish of covers.
- 5. Extremely thin film of oil may cover some shields. This does affect soldering and need not be removed.

Tinplate shields constitute over 85% of the materials used in the Masach production program and have been proven effective in their respective applications.

	MS PN.	Description	Ext. Dime	ensions (mr	n)
MS SET PN.	MS PN.	Description	L 🔻	W	Н

	MS593-10	MS593-10F	EMI/RFI Frame	59.3	59.3 20.6						
		MS593-10C	EMI/RFI Cover	59.9	21.2	2.5					
		2-Piece Shield	Hermetically Sealed	Tin-Steel							
	\nearrow	Optional Configurations									
		2-Piece 🗹 1-Piece	Hermetic DPerforated	🗹 Tin-Ste	el Silver						

MS593-20	MS593-20F	EMI/RFI Frame	59.3	20.6	5.7					
	MS593-20C	59.9	21.2	3						
	2-Piece Shield	Hermetically Sealed	Tin-Steel							
	Optional Configurations									
	2-Piece 🗹 1-Piece	Hermetic DPerforated	🗹 Tin-Ste	el Silver						

MS631-10	MS631-10F	EMI/RFI Frame	63.1	35.5	2.8					
	MS631-10C	EMI/RFI Cover	63.5	35.9	2.5					
	2-Piece Shield	Tin-Steel								
	Optional Configurations									
\checkmark	2-Piece I 1-Piece	Hermetic Perforated	🗹 Tin-Ste	el Silver						

	\checkmark	2-Piece 🗹 1-Piece	Hermetic DPerforated	🗹 Tin-St	el Silver						
		Optional Configurations									
		2-Piece Shield	Tin-Steel								
		MS737-10C	EMI/RFI Cover	74.3	28.7	3					
	MS737-10	MS737-10F	EMI/RFI Frame	73.7	28.1	2.9					

MS-ENG-KIT21	MS-ENG-KIT21	Engineering Kit							
	2-Piece Shield	Tin-Steel							
	Optional Configurations								
	2-Piece 🗹 1-Piece	Hermetic E Perforated	🗹 Tin-St	el Silver					

Worldwide Activity.



Global Recognition



We continue to develop innovative products utilizing new manufacturing techniques, serving our ever-growing network of worldwide distributors and customers.

ISO 9001:2015 Quality Assurance



We provide our customers with highest quality products and timely delivery, managed by a state of the art ERP system in accordance with ISO 9001 quality standards.

Green Policy.



RoHS & Reach Compatible



We use only fabricated materials that are RoHS and Reach compatible, with standards continually updated. COC of base material used is available upon request.

Scrap and Discarded Material

All material scrap resultant from the fabrication process is gathered and stored in separate bins for subsequent recycling. We pride ourselves in achieving 100% recycling of all metallic waste. Plastic sheet scrap resultant from the vacuum form process is 100% recycled via the raw material provider. We encourage our customers to return the vacuum form package trays and packing cartons for future recycling.

Environment

Our modern fabrication plant and facilities are surrounded by trees, shrubs and flower beds. Water condensed from the plant's air conditioners serve to water our gardens, requiring no additional irrigation.

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	Ext	ernal (n	nm)]	External (mm)			1		External (mm)			
SET PN.	L 🔻	W	Н		SET PN.		W	н		SET PN.	L 🔻	W	Н
MS087-10	8.7	6.3	3	1	MS288-10	28.8	19.4	5	1	MS483-10	48.3	44.3	4.4
MS093-10	9.3	9.3	5	1	MS293-10	29.3	25.3	6.4		MS511-10	51.1	25.7	6.5
MS110-10	11	11	2.8		MS300-10	30	24.4	3.5		MS511-20	51.1	38.4	6.5
MS110-20	11	11	6	1	MS302-10	30.2	18.9	3		MS513-10	51.3	26.5	9.5
MS130-10	13	13	5	1	MS308-10	30.8	17.8	4.4		MS544-10	54.4	23.9	7.5
MS135-20	13.5	13.5	5.1		MS310-10	31	17.1	3		MS544-20	54.4	23.9	13.5
MS148-10	14.8	8.9	2		MS312-10	31.2	30	5		MS585-10	58.5	49.7	4.7
MS156-10	15.6	10.6	3		MS321-10	32.1	16.6	2.5		MS593-10	59.3	20.6	2.8
MS168-10	16.8	13.5	5		MS323-10	32.3	23.8	3.7		MS593-20	59.3	20.6	5.7
MS183-10	18.3	10.5	3		MS323-20	32.3	23.8	4.7		MS631-10	63.1	35.5	2.8
MS190-10	19	13.9	2		MS323-30	32.3	23.8	9		MS737-10	73.7	28.1	2.9
MS193-10	19.3	10.5	3		MS329-10	32.9	20.7	2.5					
MS206-10	20.6	17.8	3		MS333-10	33.3	13.3	4.4					
MS209-10	20.9	15.3	1.65		MS338-10	33.8	30.3	3.3			\frown		
MS209-20	20.9	15.3	2		MS345-10	34.5	23.3	3.5					
MS210-10	21	12	5		MS353-10	35.3	20	6.4					
MS213-10	21.3	19.9	2.9		MS353-20	35.3	22.3	6.4			S	\leq	
MS220-10	22	19.3	3.3		MS355-10	35.5	19	5.5					<
MS220-20	22	17.7	3		MS366-10	36.6	34.1	3.3				\sim	>
MS220-30	22	11.3	2.8		MS378-10	37.8	21.6	3			No.		
MS220-40	22	11.3	7		MS382-10	38.2	33.3	5				D ID	
MS223-10	22.3	17.3	3		MS384-10	38.4	37.6	11				\sim	
MS226-10	22.6	17.1	2		MS400-10	40	18.3	4			S.	5/	
MS230-10	23	11.7	5		MS402-10	40.2	34.6	5.3					
MS233-10	23.3	17.5	5		MS412-10	41.2	13.6	5.1					
MS233-20	23.3	14.5	3		MS415-10	41.5	16.8	6.8					
MS256-10	25.6	15.5	2.3		MS415-20	41.5	26.5	9.5		il -][S]]
MS257-10	25.7	25.7	6.5		MS423-10	42.3	15.3	4.4		all all			
MS259-10	25.9	25.9	3		MS448-10	44.8	18.2	3			Ĺ		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
MS260-10	26	23	7.8		MS448-20	44.8	18.2	5.7		6 .5		69-	Jaa -
MS263-10	26.3	16.8	4.5		MS453-10	45.3	16.2	6		Downloa	d vou	r free	CAD
MS263-20	26.3	19.8	8.1		MS466-10	46.6	17.3	5					
MS268-10	26.8	15.6	2.5		MS473-10	47.3	23.3	5.3		Ord	eru	UIU	6
MS268-20	26.8	15.6	4]	MS477-10	47.7	18.2	4			les /	<u>)</u> .	

Pick-out your next EMI/RFI Shield »

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