MPE
Quality, Reliability, Performance

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Extended Performance HEMP & IEMI Filter Range

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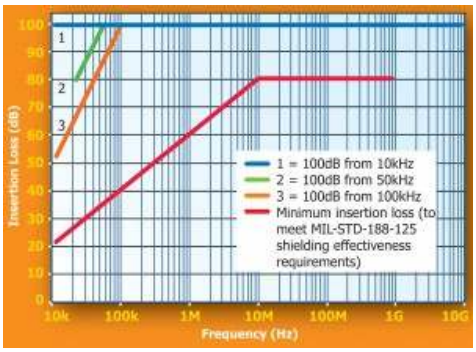


DESCRIPTION

A range of extended performance HEMP filters meeting the pci requirements of Mil-Std-188-125-1 and -2 and Def Stan 59-188 parts 1 and 2 for E1 and E2 pulses but having increased insertion loss performance for applications where additional performance is needed beyond just HEMP requirement. All lines have individual input inductors to offer superior transient handling performance and also coupled inductors to offer superior continuous wave EMC performance in a small package. All lines feature high-energy varistor transient suppressors.

All MPE HEMP filters are tested using the test methods defined within the following standards and meet or exceed the relevant performance and/or safety criteria defined within these standards:

Mil-Std-188-125
Mil-F-15733
Mil-Std-220C
CISPR17:2011/BS EN 55017:2011
UL1283
EN60950/IEC60950/UL60950

FEATURES

- 250V/440Vac with 6A – 400A current ratings
- Single or three phase applications
- Utilise MPE self-healing feedthrough capacitors for significantly improved reliability
- Significantly smaller & lighter than traditional solutions
- Single line input inductors for pulse handling
- High energy transient suppressors for high reliability
- UL94-V0 insulating materials used
- Complies with IEC 950 requirements
- Very low residual pulse current – high safety margin
- Coupled inductor for high insertion loss

RATINGS & CHARACTERISTICS

Rated Voltage	Single phase	250Vac 50/60Hz
	Three phase	250/440Vac 50/60Hz (277V/480Vac on request)
Test Voltage		2250Vdc each line to case (Prior to fitting transient suppressors)
Insulation Resistance		>100MΩ (Prior to fitting discharge resistors)

Discharge Resistors	Fitted internally from each line to case
Discharge Time to below 34V	<30s
Maximum Temperature Rise on Full Load	<25ºC
Full Load Operating Temperature Range	-40ºC to +50ºC
Maximum Leakage Current per line at 250Vac 50Hz	See table
Peak Surge Current	70kA (8/20µs)

INSERTION LOSS PERFORMANCE

Typical insertion loss In 50Ω system with / without load

Frequency	10kHz	100kHz	1MHz	10MHz	100MHz	1GHz
Insertion loss	100dB	100dB	100dB	100dB	100dB	100dB

TRANSIENT SUPPRESSION PERFORMANCE

MIL STD 188-125-1 acceptance test, short pulse current injection, wave shape 20/500ns

Input pulse amplitude	250A	500A	1000A	1800A	2500A
MIL-STD-188-125 residual requirement	<10A	<10A	<10A	<10A	<10A
Typical filter residual let-through	<1.5A	<2A	<3A	<3.5A	<4.5A

MIL STD 188-125-1 acceptance test, intermediate pulse current injection, wave shape 1.5/3000ns

Input pulse amplitude	250A
MIL-STD-188-125 requirement	No filter damage or performance degradation
Typical filter response	No filter damage or performance degradation

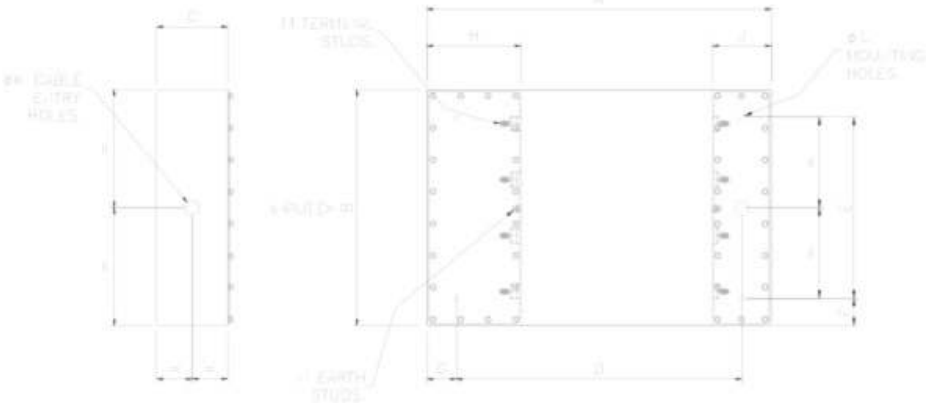
PRODUCT RANGE

Part Number	Current Rating (A) @50ºC	No of Lines	Insertion Loss Curve	Max Leakage Current per Line (A)	Max DC Volt Drop per Line (V)	Max Heat Dissipation (W)	Major Dimensions (mm)			Weight (Kg)
							Length	Width	Depth	
DS33630	6	2(SPN)	1	1.5	0.35	12	600	200	120	15
DS33631	16	2 (SPN)	1	1.5	0.55	24	600	200	120	15
DS33632	32	2 (SPN)	1	2.5	0.5	42	780	250	120	26
DS33633	63	2 (SPN)	1	2.5	0.65	90	880	320	170	40
DS33634	100	2 (SPN)	2	2.5	0.5	120	1000	350	230	55
DS33635	200	2 (SPN)	2	5	0.35	200	1220	450	250	110
DS33636	400	2	3	6	0.2	280	1900	480	250	190

		(SPN)								
DS33640	6	4 (TPN)	2	2	0.4	20	600	400	120	30
DS33641	16	4 (TPN)	2	2	0.6	35	600	400	120	30
DS33642	32	4 (TPN)	1	5	0.55	80	780	500	120	45
DS33643	63	4 (TPN)	2	5	0.6	140	880	640	170	75
DS33644	100	4 (TPN)	2	5	0.45	190	1000	700	230	100
DS33645	200	4 (TPN)	2	8	0.3	300	1220	900	250	170
DS33646	400	4 (TPN)	3	8	0.2	420	1900	960	250	TBA

*Current derating between 50ºC and 85ºC Iθ = IR $\sqrt{(85-\theta)/35}$

DIMENSIONS & MECHANICAL DETAILS



Part Number	Dimensions (mm)												
	A	B	C	D	E	F	G	H	J	K	L	M	N
DS33630	600	200	120	520	110	45	40	140	80	20	9	M5	M6
DS33631	600	200	120	520	110	45	40	140	80	20	9	M5	M6
DS33632	780	250	120	690	140	55	45	160	100	25	9	M8	M10
DS33633	880	320	170	790	210	55	45	160	100	32	11	M8	M10
DS33634	1000	350	230	890	240	55	55	160	120	32	11	M8	M10
DS33635	1220	450	250	1070	300	75	75	200	150	51	17	M12	M16
DS33636**	1900	480	250	1440†	340	70	230	300	300	76	17	M20	M20
DS33640	600	400	120	520	310	45	40	140	80	20	9	M5	M6
DS33641	600	400	120	520	310	45	40	140	80	20	9	M5	M6
DS33642	780	500	120	690	390	55	45	160	100	25	9	M8	M10
DS33643	880	640	170	790	530	55	45	160	100	32	11	M8	M10
DS33644	1000	700	230	890	590	55	55	160	120	32	11	M8	M10
DS33645	1220	900	250	1070	750	75	75	200	150	51	17	M12	M16

DS33646**	1900	960	250	1440†	600	180	230	300	300	76	17	M20	M20

** 400A filters additionally have lifting lugs protruding 65mm beyond each end of the filter and 8mm beyond each side to aid mounting. Lug hole size 22mm. Please request drawings P828749 or P828750 for full dimensions of 2 line and 4 line 400A filters
respectively.

† Fixing centres only See drawing P828602 or P828362 for position of cable entry hole.

Case Material	Electroplated steel
Finish	Paint (except mating areas)

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