

**MIL-STD-188-125-1 ACCEPTANCE PCI TESTING SUMMARY
MPE DS33590 HEMP Filter (1X 1A, 28 VDC)**

Jaxon Engineering and Maintenance (JEM) has performed MIL-STD-188-125-1 acceptance PCI testing on the HEMP PPD (Point-of-Entry Protective Device) PN DS33590 manufactured by MPE of Liverpool, UK. The DS33590 is a one-line filter; the line is rated at 1 A and 28 VDC with surge protection provided by a single S20K30 MOV (metal-oxide varistor).

The MPE DS33590 was classified as an unrestricted intrasite commercial control/ signal PPD as defined in MIL-STD-188-125-1. Accordingly, each line of each PPD was tested against the short (E1) pulse transient waveform detailed in MIL-STD-188-125-1 using a clean-side line-to-ground dummy resistive load of 2.0 Ω. The units tested met all applicable performance requirements given in MIL-STD-188-125-1. There was no evidence of damage or degradation to any of the units tested resulting from application of the short pulse transients. Furthermore, the peak, derivative and root action norms of the measured short pulse residual current waveforms were well below the applicable limits given in MIL-STD-188-125-1 as highlighted below.

SHORT PULSE NORM	LIMIT	WORST CASE
Peak Current	.1 A	.084 A
Peak di/dt	1E7 A/sec	1.11E3 A/sec
Root Action	1.6E-1 Avsec	1.27E-3 AVsec

DS33590 – MIL-STD-188-125-1 Acceptance PCI – Worst Case E1 Residual Current Norms

A summary of the maximum residual current peak, derivative and root action norms at each injection level from the entire population of DS33590 units tested is provided below.

DS33590		Injection Level								
Norm and Limit		25	50	125	250	500	1000	1750	2500	3535
MAX PEAK	.1A	0.015	0.017	0.019	0.024	0.026	0.024	0.084	0.065	0.077
MAX DERIVATIVE	1E7 A/sec	3.11E+02	2.25E+02	3.11E+02	3.31E+02	3.54E+02	4.89E+02	1.11E+03	7.90E+02	8.56E+02
MAX ROOT ACTION	1.6E-1 Avsec	2.07E-04	2.38E-04	2.74E-04	3.48E-04	5.11E-04	5.66E-04	1.27E-03	9.80E-04	1.17E-03

DS33590 – MIL-STD-188-125-1 Acceptance PCI – Maximum Norms versus Injection Level