MIL-STD-188-125-1 ACCEPTANCE PCI TESTING SUMMARY
MPE DS33590C HEMP Filter (2X 1 A, 28 VDC)

Jaxon Engineering and Maintenance (JEM) has performed MIL-STD-188-125-1 acceptance PCI testing on multiple production units of HEMP PPD (**P**oint-of-Entry **P**rotective **D**evice) PN DS33590C manufactured by MPE of Liverpool, UK. The DS33590C is a dual-line control / signal filter; each of its two lines is rated at 1 A and 28 VDC with surge protection provided by a single EPCOS S20K30 MOV (metal-oxide varistor).

The MPE DS33590C was classified as an unrestricted low-voltage intrasite control / signal line PPD as defined in 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 2 Ω, respectively. The maximum E1 injection level was (5000 A / SQRT(2)) or 3535 A. 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	0.1 A	0.046 A
Peak di/dt	1E7 A/sec	4.5E2 A/sec
Root Action	1.6E-3 A√sec	1.3E-3 A√sec

DS33590C – 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 DS33590C units tested is provided below.

DS33590C		INJECTION LEVEL (A)						
NORM and LIMIT		50	125	250	500	1000	1750	2500
MAX PEAK	0.1 A	0.017	0.022	0.028	0.033	0.046	0.039	0.031
MAX DERIVATIVE	1E7 A/sec	1.5E+02	1.7E+02	1.8E+02	2.4E+02	3.7E+02	3.4E+02	4.5E+02
MAX ROOT ACTION*	1.6E-3 A√sec	6.1E-04	5.8E-04	3.5E-04	3.5E-04	5.9E-04	1.3E-03	1.0E-03

* RA CALCULATED TO 5 ms

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