

**MIL-STD-188-125-1 ACCEPTANCE PCI TESTING SUMMARY
MPE DS33737/275 HEMP Filter (1X 800 A, 277 VAC)**

Jaxon Engineering and Maintenance (JEM) has performed MIL-STD-188-125-1 short (E1) pulse acceptance PCI testing on a production unit of HEMP PPD (Point-of-Entry Protective Device) PN DS33737/275 manufactured by MPE of Liverpool, UK. The DS33737/275 is a single-line filter rated at 800 A and 277 VAC with surge protection provided by a single CKE Z60M431 MOV (metal-oxide varistor). Multiple DS33737/275 units can be utilized for the HEMP protection of typical multi-wire power systems.

The MPE DS33737/275 was classified as an unrestricted intersite commercial power line PPD as defined in MIL-STD-188-125-1. The short (E1) pulse acceptance PCI testing of the DS33737/275 was performed IAW MIL-STD-188-125-1 using a clean-side line-to-ground dummy resistive load of 0.31 Ω. The unit tested met all applicable performance requirements given in MIL-STD-188-125-1. There was no evidence of damage or degradation 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	10 A	6.6 A
Peak di/dt	1E7 A/sec	1.7E6 A/sec
Root Action	1.6E-1 Avsec	4.3E-2 Avsec

DS33737/275 – 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 measured during the MIL-STD-188-125-1 short (E1) pulse acceptance PCI testing of the MPE DS33737/275 with CKE Z60M431 PPD is provided below.

DS33737/480 – MIL-STD-188-125-1 Acceptance PCI – Maximum Norms versus Injection Level

DS33737/275 with Z60M431		INJECTION LEVEL (A)						
NORM and LIMIT		50	125	250	500	1000	1750	2500
MAX PEAK	10 A	0.7	1.5	2.5	3.9	5.5	5.9	6.6
MAX DERIVATIVE	1E7 A/sec	2.1E+05	4.7E+05	7.6E+05	1.2E+06	1.5E+06	1.6E+06	1.7E+06
MAX ROOT ACTION	1.6E-1 Avsec	4.2E-03	9.6E-03	1.6E-02	2.5E-02	3.5E-02	3.8E-02	4.3E-02