

SPM500

Surge Protection Module

- Up to 28 A Output Current
- Up to 500 W Output Power
- Active Surge Protection
- MIL-STD 1275 and DEF-STAN 61-5
- MIL-STD 461 and DEF-STAN 59-411
- MIL-STD 810



Specification

Input

Input Voltage Range: 10-33VDC

Input Transient: ± 250 V for 70 μ s 2 J, 100 V for 50 ms 0.5 Ω per MIL-STD-1275A-E

Input Reverse Voltage: Continuous

Output

Output Voltage: Equal to input voltage & clamps at 36 VDC

Output Power: 28.0 A Max current. For input voltages above 18 V, maximum load is 500 W.

Output Module Inhibit (INH): Open collector output rated 60 VDC with 3 mA sink current referenced to $-V_{in}/-V_{out}$

When the output current is >28 A then the INH pin is pulled logic low. Connect INH to DIS pin in order to disable output in overload or short circuit condition with 9 second auto-retry. Contact factory for latched option.

Overtemperature Protection: Shuts down output by pulling disable pin low when baseplate >100 $^{\circ}$ C. Typical hysteresis 5 $^{\circ}$ C auto recovery



Figure 1: Output voltage clamping waveform (yellow), with increasing input voltage (green) starting from 28 VDC up to 100 VDC



Figure 2: Output voltage waveform (yellow), with increasing output current (orange) starting from 20 A up to 28 A when INH is connected to DIS externally so that overcurrent and short circuit protections are enabled

General

Efficiency: >98%

Isolation Voltage: 500 VDC Input & Output to Case

Series Resistance: 0.011 Ω

Disabled Input Current: 20mA

Disable (DIS): On=open circuit or up to 50V

Off=short circuit or < 0.5V

No Load Current: 50 mA

MTBF: >500 kHrs to MIL-HDBK-217F at 40 °C, GB

Environmental

Operating Temperature: -40 °C to +100 °C baseplate

Storage Temperature: -55 °C to +100 °C

Salt Atmosphere: MIL-STD-810G method 509.4

Humidity: MIL-STD-810G 507.4

Altitude: MIL-STD-810G 500.4

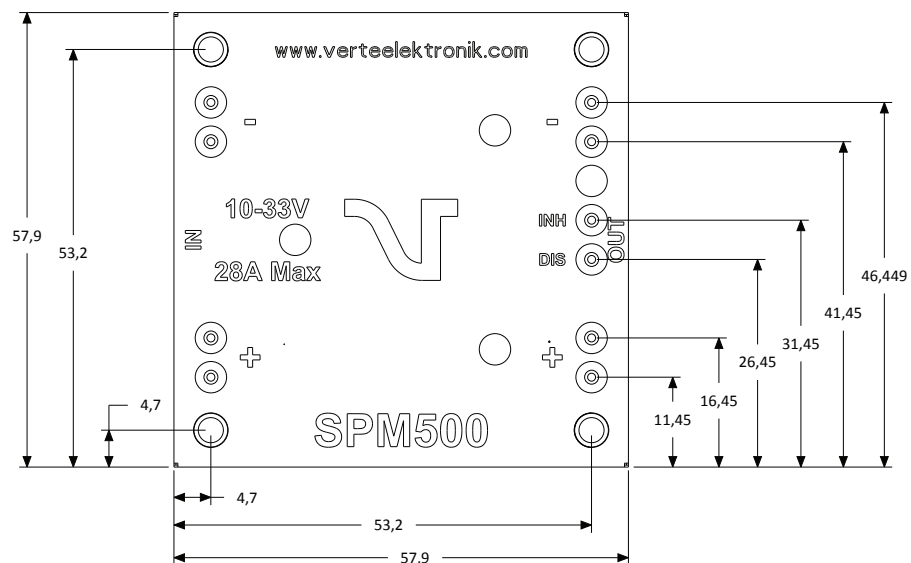
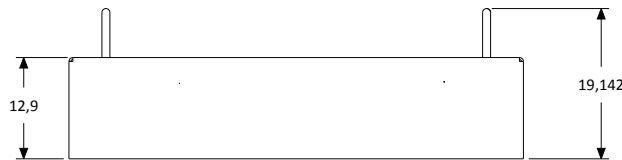
Shock: MIL-STD-810G 516.5 function test for ground equipment 40 g in 3 axes

Vibration: MIL-STD-810G method 514.5C-17. Minimum integrity test for military equipment (1 Hr/axis, 3 axes). Vibration 5-33 Hz, 0.5 mm displacement

EMC & Safety

Immunity: MIL-STD-1275A-E, MIL-STD-461E/F/G (CS101, CS114, CS115 & CS116) MIL-STD-704A, DEF-STAN 61-5 part 6 issue 5

EMC Performance: Compliance to MIL-STD 461E/F/G CE102 & DEF STAN 59-411 DCE01/DCE02



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