

AUTOMOTIVE J1850 (CLASS 2) ESD IMMUNITY Surface Mount Transient Voltage Suppressors

P4SMA16AT3

**GENERAL DATA
400 WATT PEAK POWER**

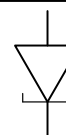
**PLASTIC SURFACE MOUNT
ESD OVERVOLTAGE
TRANSIENT SUPPRESSOR
400 WATT PEAK POWER**

Specification Features:

- Nominal Breakdown Voltage Range – 16 V
- Peak Power – 400 Watts @ 1ms
- > 16KV ESD IMMUNITY (Class 3 per Human Body Model)
- Pico Seconds Response Time. (0V to BV)
- Low Capacitance
- Low Lead Inductance
- Available in Tape and Reel
- Low Profile Package



SMA
CASE 403B-01
PLASTIC



Schematic

MAXIMUM RATINGS AND CHARACTERISTICS

Rating	Symbol	Value	Unit
Peak Power Dissipation @ $T_L = 25^\circ\text{C}$, $PW = 10/1000 \mu\text{s}$ (1)	P_{pk}	400	Watts
Peak Forward Surge @ $T_A = 25^\circ\text{C}$ (2)	I_{FSM}	40	Amps
Instantaneous Forward Voltage @ 40A	V_f	3.5	Volts
Operating and Storage Junction Temperature Range	T_J, T_{stg}	150	$^\circ\text{C}$

*FR4 Board, using Motorola minimum recommended footprint, as shown in case 403B outline dimensions spec.

1. Non-repetitive current pulse.
2. Measured on 0.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulse per minute maximum.

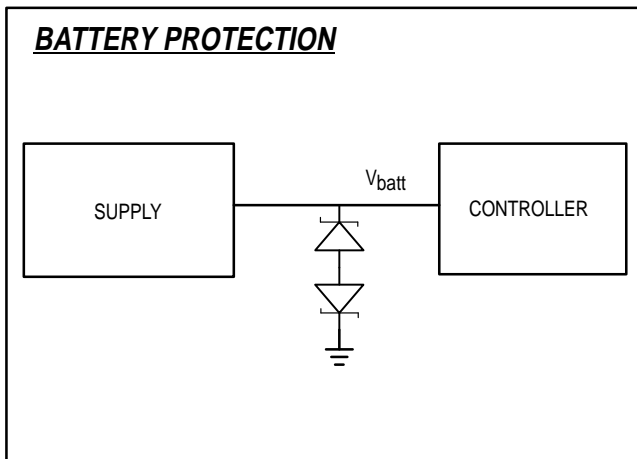
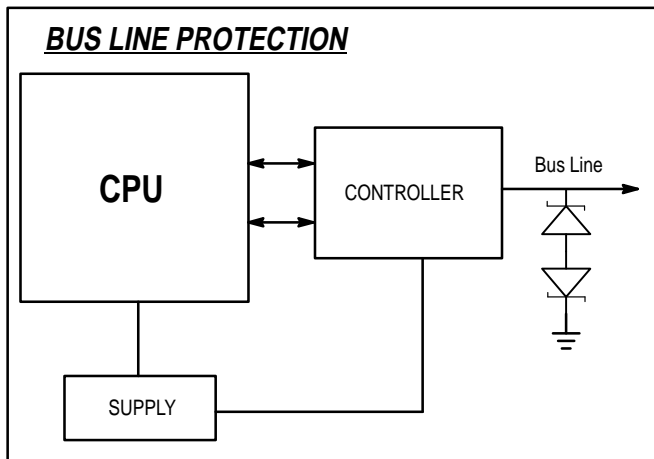
ELECTRICAL CHARACTERISTICS ($V_F = 3.5$ Volts @ $I_F = 40$ A)

Device	Nominal Zener Voltage V_Z @ I_{ZT} Volts (+/-5% tolerance) (Volts)	Test Current I_{ZT} (mA)	Reverse Stand-off Voltage V_{RWM} (Volts)	Maximum Reverse Leakage @ V_{RWM} I_r (μA)	Maximum Reverse Surge Current I_{RSM} (Amps)	Maximum Reverse Voltage @ I_{RSM} (Clamping Voltage) V_{rsm} (Volts)	Typical Junction Capacitance @ $V_{RWM}/2$ C_p (pf)
P4SMA16AT3	16	1	13.6	2.5	17.8	22.5	250

*TOLERANCE AND VOLTAGE DESIGNATION Tolerance designation – The type number listed indicates a tolerance of $\pm 5\%$.

APPLICATION DIAGRAMS

Back to back P4SMA16AT3 devices prevent ESD transient damage to the controller on both communication bus and power supply lines.



RATING AND TYPICAL CHARACTERISTIC CURVES ($T_A = 25^\circ\text{C}$)

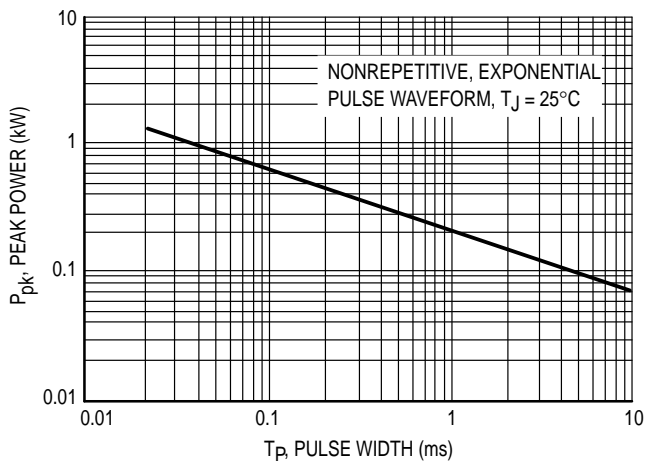


Figure 1. Typical Pulse Rating Curve

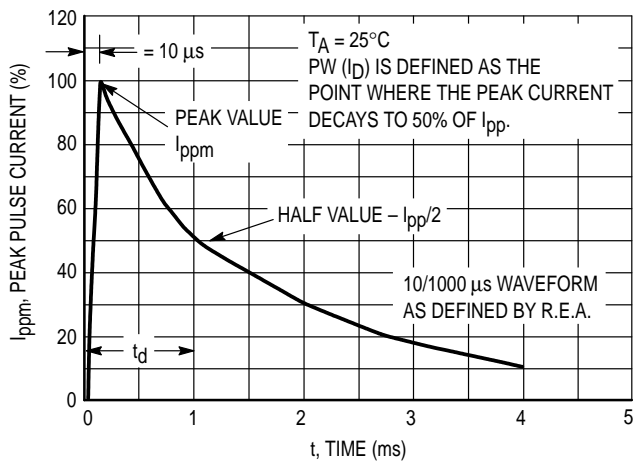


Figure 2. Pulse Waveform

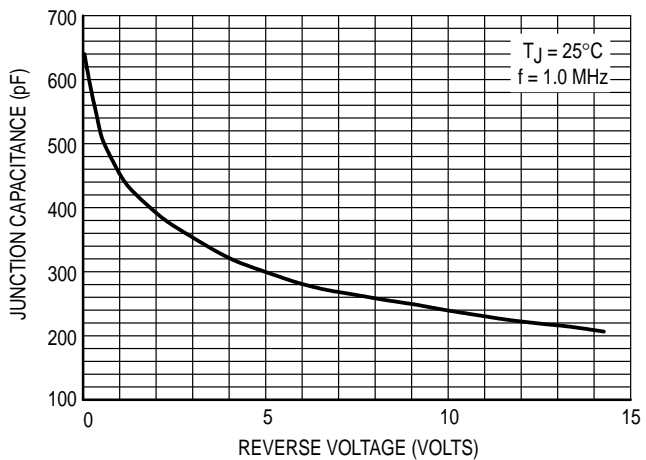


Figure 3. Typical Junction Capacitance

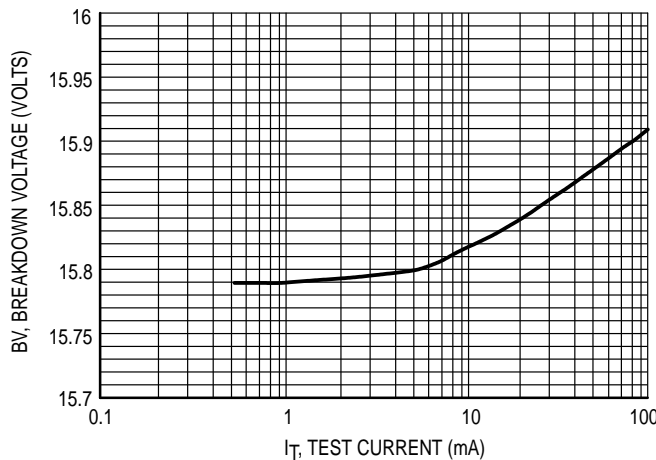


Figure 4. Breakdown Voltage Curve

RATING AND TYPICAL CHARACTERISTIC CURVES ($T_A = 25^\circ\text{C}$)

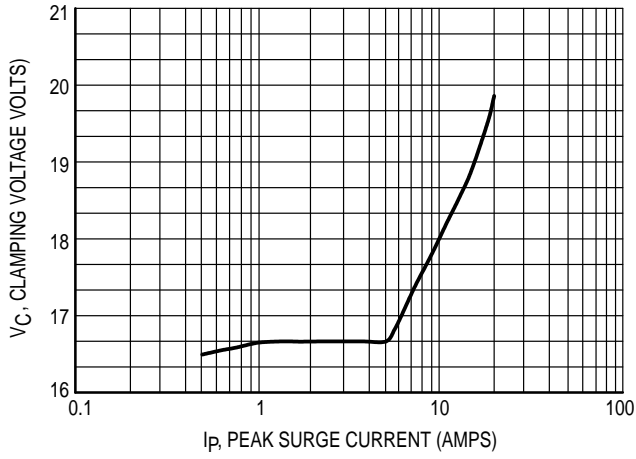


Figure 5. Clamping Voltage Curve

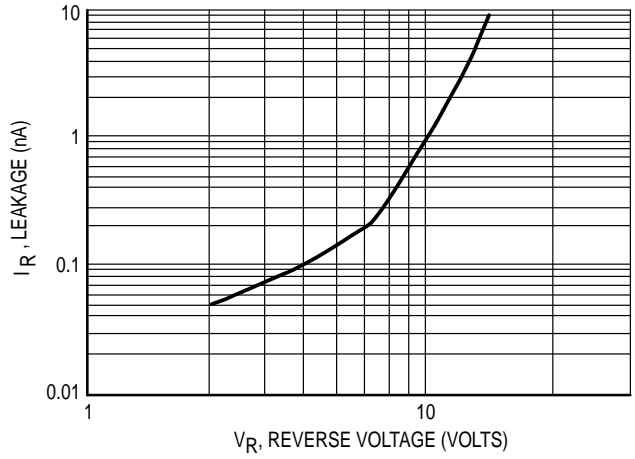


Figure 6. Reverse Leakage Curve

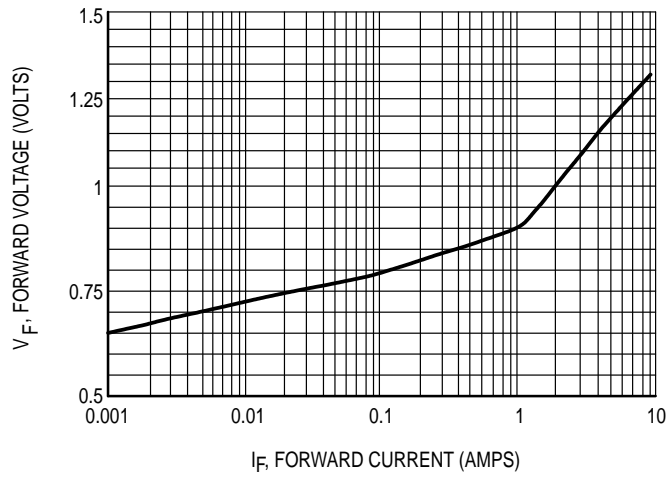
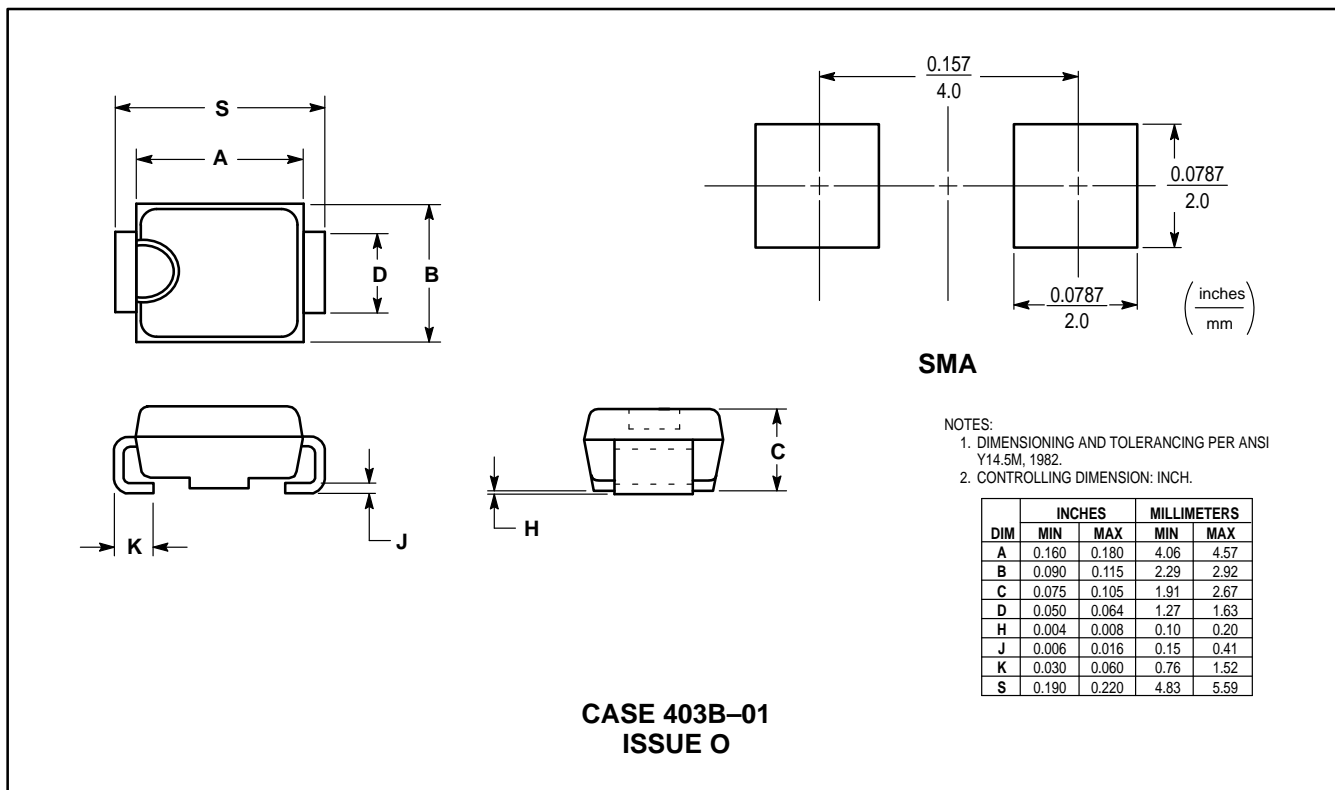


Figure 7. Forward Voltage Current

OUTLINE DIMENSIONS



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