

SuperTVS – 400W Transient Voltage Suppressor

1. Features

- Glass passivated chip
- 400 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- IEC 61000-4-2(ESD) \pm 30KV(air)
 \pm 30KV(contact)
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard

2. Mechanical Data

- Case: DO-214AC/SMA Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

3. Marking Information

BI- directional	UNI-directional	Marking
		XXXX= Product type marking code (See Electrical Characteristics Table)
		

4. Maximum Ratings and Characteristics

Ratings at 25° ambient temperature unless otherwise specified

Rating	Symbol	Value	Units
Peak pulse power dissipation at 10/1000us waveform (Note1)	P_{PP}	400	W
Peak pulse current of at 10/1000us waveform (Note1)	I_{PP}	43.8	A
Power dissipation on infinite heatsink at $TL = 75^{\circ}\text{C}$	P_D	1.0	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) (Note2)	I_{FSM}	40	A
Maximum instantaneous forward voltage at 10 A for unidirectional only	V_F	3.5/5.0	V
Operating junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

Notes:

1. Non-repetitive current pulse, per Fig.5 and derated above $TA=25^{\circ}\text{C}$ per Fig.1.
2. 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minutes maximum.

Part Number	Part Number	Marking		Reverse Stand off Voltage VR	Breakdown Voltage VBR (Volts) @ IT		Test Current IT	Maximum Clamping Voltage VC @ Ipp	Maximum Peak Pulse Current Ipp	Maximum Reverse Leakage IR @ VR
UNI	BI	UNI	BI	(V)	MIN	MAX	(mA)	(V)	(A)	(μA)
SMAJ 3.3A	SMAJ 3.3CA	3V3	3V3Z	3.3	5.0	6.5	10	8.0	43.8	600

5. Ratings and Characteristic Curves (TA = 25°C unless otherwise noted)

Figure 1. Pulse Derating Curve

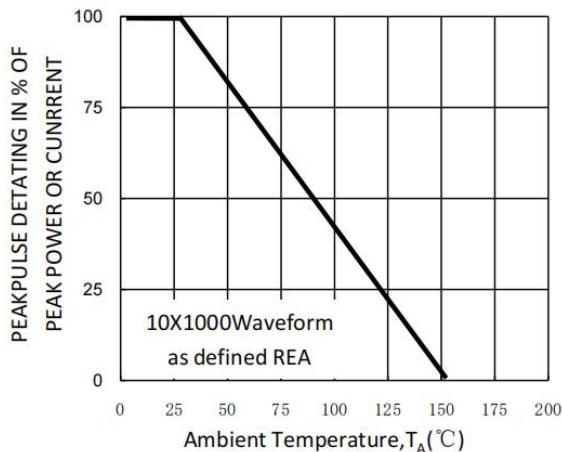


Figure 2 Maximum Non-Repetitive Surge Current

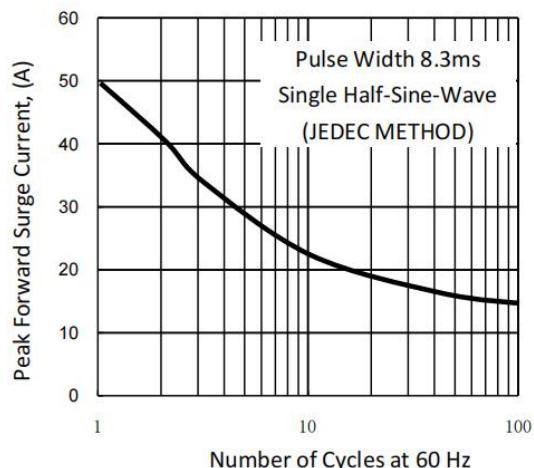


Figure 3 Steady State Power Derating Curve

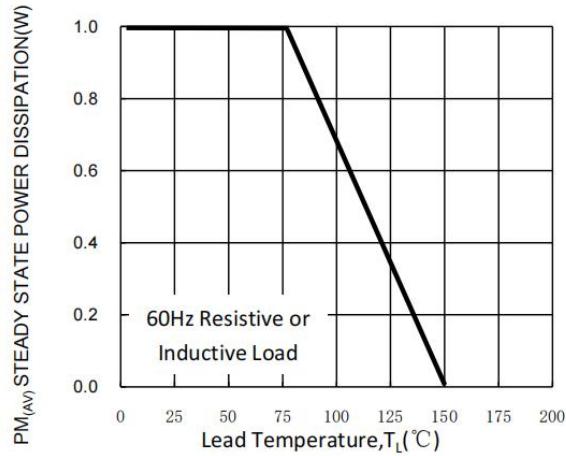


Figure 4 Peak Pulse Power Rating Curve

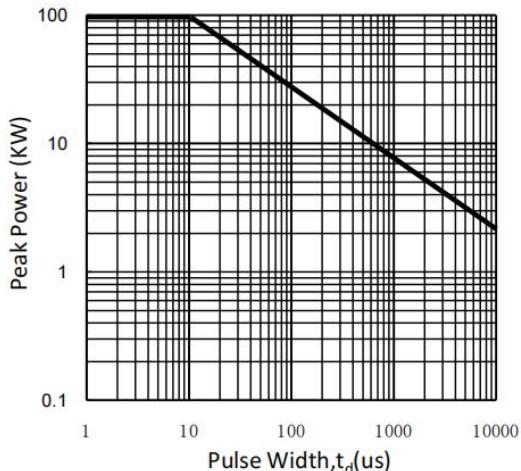


Figure 5 Pulse Waveform

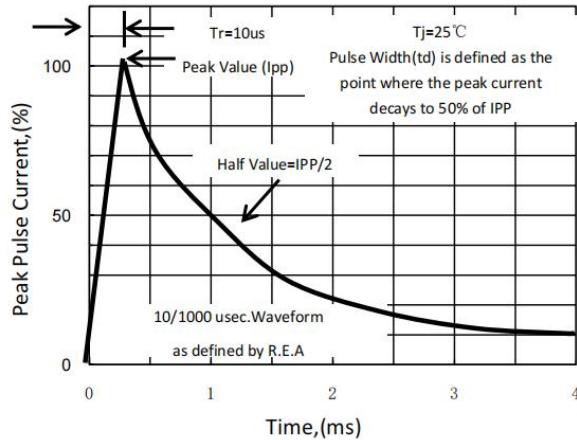
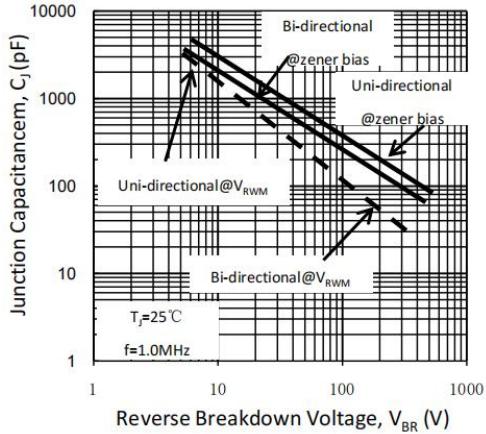
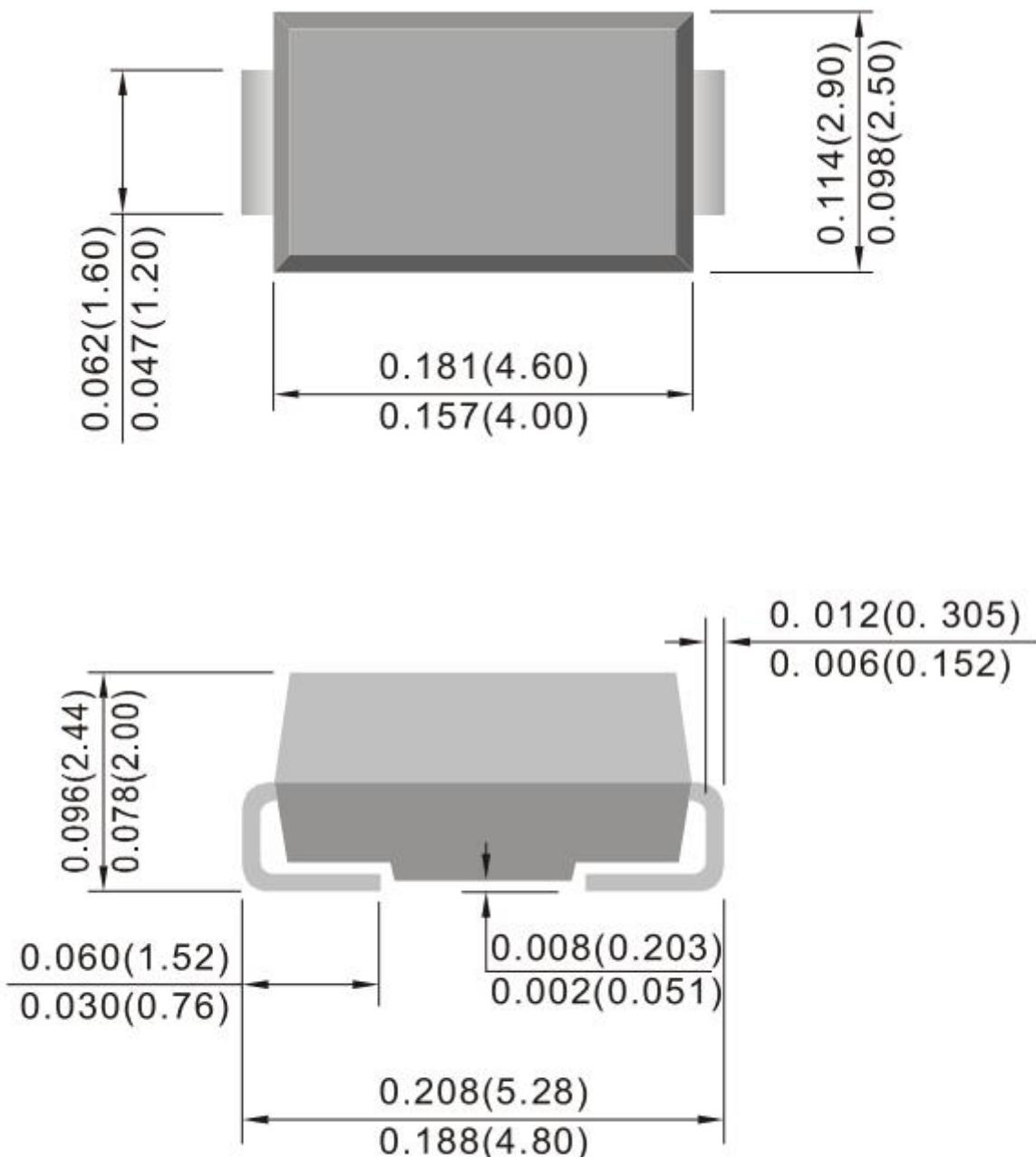


Figure 6 Typical Junction Capacitance



6. Dimension (SMA/DO-214AC)

Unit : inch(mm)

DISCLAIMER

ELECSUPER SUPERTVS PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with ElecSuper products. You are solely responsible for

- (1) selecting the appropriate ElecSuper products for your application;
- (2) designing, validating and testing your application;
- (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements.

These resources are subject to change without notice. ElecSuper grants you permission to use these resources only for development of an application that uses the ElecSuper products described in the resource. Other reproduction and display of these resources are prohibited. No license is granted to any other ElecSuper intellectual property right or to any third party intellectual property right. ElecSuper disclaims responsibility for, and you will fully indemnify ElecSuper and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources. ElecSuper's products are provided subject to ElecSuper's Terms of Sale or other applicable terms available either on www.elecsuper.com or provided in conjunction with such ElecSuper products. ElecSuper's provision of these resources does not expand or otherwise alter ElecSuper's applicable warranties or warranty disclaimers for ElecSuper products.