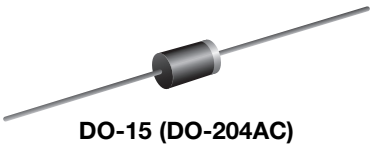
THE DATASHEET OF

SAC12-E3/73

Low Capacitance TRANSZORB® Transient Voltage Suppressors



DO-15 (DO-204AC)

FEATURES

- Glass passivated chip junction
- 500 W peak pulse power capability with a 10/1000 µs waveform, repetitive rate (duty cycle): 0.01 %
- Excellent clamping capability
- Very fast response time
- Low incremental surge resistance
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

PRIMARY CHARACTERISTICS	
V_{WM}	5.0 V to 50 V
V_{BR}	7.6 V to 55.5 V
P_{PPM}	500 W
P_D	3.0 W
T_J max.	175 °C
Polarity	Unidirectional
Package	DO-15 (DO-204AC)

TYPICAL APPLICATIONS

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, and telecommunication.

MECHANICAL DATA

Case: DO-15 (DO-204AC)

Molded epoxy over passivated body

Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant and commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3 suffix meets JESD 201 class 1A whisker test

Polarity: color band denotes cathode end

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Peak pulse power dissipation with a 10/1000 µs waveform (1)	P_{PPM}	500	W
Peak pulse current with a 10/1000 µs waveform (fig. 3) (1)	I_{PPM}	See next table	A
Power dissipation on infinite heatsink at T_L = 75 °C (fig. 2)	P_D	3.0	W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	°C

Note

(1) Non-repetitive current pulse, per fig. 3 and derated above T_A = 25 °C per fig. 2

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ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)									
PART NUMBER	BREAKDOWN VOLTAGE AT I_T = 1.0 mA V_{BR} (V) MIN.	STAND-OFF VOLTAGE (1) V_{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (µA)	MAXIMUM CLAMPING VOLTAGE AT I_{PP} = 5.0 A V_C (V)	MAXIMUM PEAK PULSE CURRENT PER FIG. 3 I_{PP} (A)	MAXIMUM JUNCTION CAPACITANCE AT 0 V (pF)	WORKING INVERSE BLOCKING VOLTAGE V_{WIB} (V)	INVERSE BLOCKING LEAKAGE CURRENT V_{WIB} I_{IB} (mA)	PEAK INVERSE BLOCKING VOLTAGE V_{PIB} (V)
SAC5.0	7.60	5	300	10.0	44	50	75	1.0	100
SAC6.0	7.90	6	300	11.2	41	50	75	1.0	100
SAC7.0	8.33	7	300	12.6	38	50	75	1.0	100
SAC8.0	8.89	8	100	13.4	36	50	75	1.0	100
SAC8.5	9.44	8.5	50	14.0	34	50	75	1.0	100
SAC10	11.10	10	5.0	16.3	29	50	75	1.0	100
SAC12	13.30	12	5.0	19.0	25	50	75	1.0	100
SAC15	16.70	15	5.0	23.6	20	50	75	1.0	100
SAC18	20.00	18	5.0	28.8	15	50	75	1.0	100
SAC22	24.40	22	5.0	35.4	14	50	75	1.0	100
SAC26	28.90	26	5.0	42.3	11.1	50	75	1.0	100
SAC30	33.30	30	5.0	48.6	10.0	50	75	1.0	100
SAC36	40.00	36	5.0	60.0	8.6	50	75	1.0	100
SAC45	50.00	45	5.0	77.0	6.8	50	150	1.0	200
SAC50	55.50	50	5.0	88.0	5.8	50	150	1.0	200

Note

(1) Non-repetitive current pulse, per fig. 3 and derated above T_A = 25 °C per fig. 2

ORDERING INFORMATION (Example)				
PREFERRED PIN	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SAC5.0-E3/54	0.432	54	4000	13" diameter paper tape and reel

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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

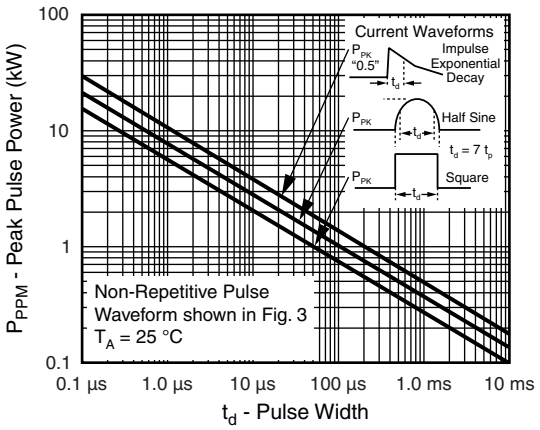


Fig. 1 - Peak Pulse Power Rating Curve

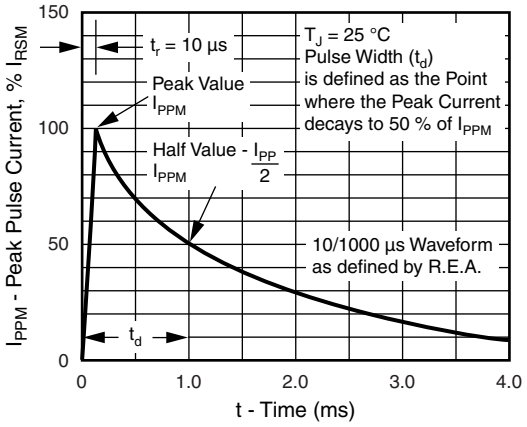


Fig. 3 - Pulse Waveform

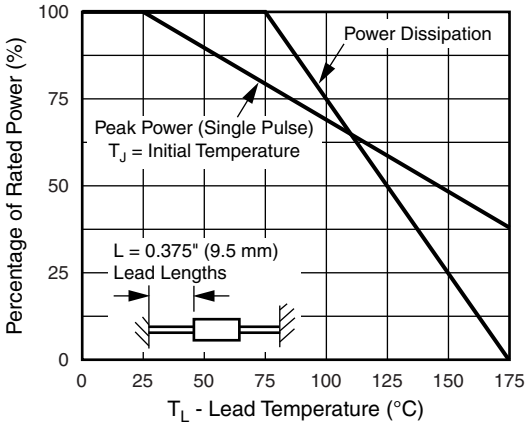
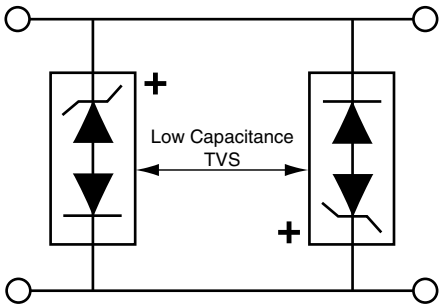


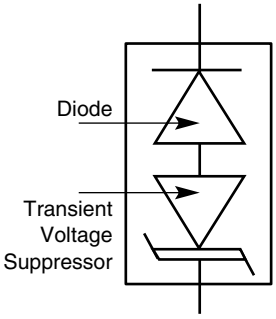
Fig. 2 - Power Derating Curve



Application Note: Device must be used with two units in parallel, opposite in polarity as shown in circuit for AC signal line protection.

Fig. 4 - AC Line Protection Application

SCHEMATIC



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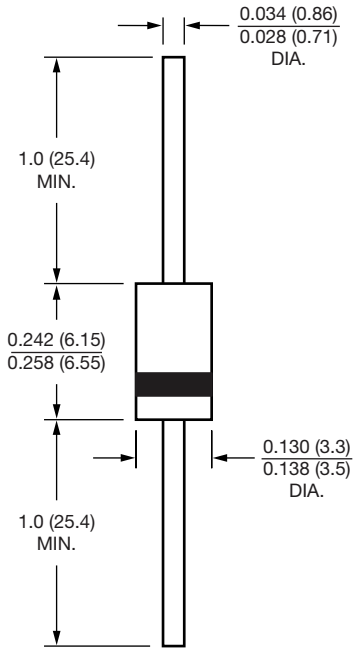
PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-15 (DO-204AC)



Note

- Dimensions of mold length and diameter do not include mold flash and gate burr, mold flash shall not exceed 0.015 inch per side. These dimensions are measured at the outermost extreme of the plastic body

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