

## Vishay General Semiconductor

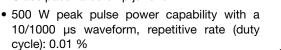
# Low Capacitance TransZorb® Transient Voltage Suppressors



PRIMARY CHARACTERISTICS					
$V_{WM}$	5.0 V to 50 V				
$V_{BR}$	7.6 V to 55.5 V				
P <sub>PPM</sub>	500 W				
P <sub>D</sub>	3.0 W				
T <sub>J</sub> max.	175 °C				
Polarity	Uni-directional				
Package	DO-204AC (DO-15)				

### **FEATURES**







RoHS

COMPLIANT

· 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 <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

#### 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-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 <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	VALUE	UNIT				
Peak pulse power dissipation with a 10/1000 µs waveform (1)	P <sub>PPM</sub>	500	W				
Peak pulse current with a 10/1000 μs waveform (fig. 3) (1)	I <sub>PPM</sub>	See next table	Α				
Power dissipation on infinite heatsink at T <sub>L</sub> = 75 °C (fig. 2)	$P_D$	3.0	W				
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +175	°C				

#### Note

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



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ELECTI	<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)								
PART NUMBER	BREAKDOWN VOLTAGE AT I <sub>T</sub> = 1.0 mA V <sub>BR</sub> (V) MIN.	STAND-OFF VOLTAGE (1) V <sub>WM</sub> (V)	MAXIMUM REVERSE LEAKAGE AT V <sub>WM</sub> I <sub>D</sub>	MAXIMUM CLAMPING VOLTAGE AT I <sub>PP</sub> = 5.0 A V <sub>C</sub> (V)	MAXIMUM PEAK PULSE CURRENT PER FIG. 3 I <sub>PP</sub> (A)	MAXIMUM JUNCTION CAPACITANCE AT 0 V (pF)	WORKING INVERSE BLOCKING VOLTAGE V <sub>WIB</sub> (V)	INVERSE BLOCKING LEAKAGE CURRENT V <sub>WIB</sub> I <sub>IB</sub> (mA)	PEAK INVERSE BLOCKING VOLTAGE V <sub>PIB</sub> (V)
SAC5.0	7.60	5	(μ <b>Α)</b> 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

 $<sup>^{(1)}</sup>$  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				

## RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

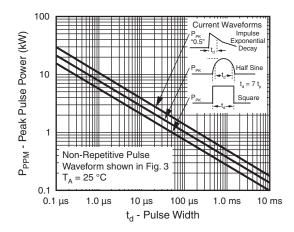


Fig. 1 - Peak Pulse Power Rating Curve

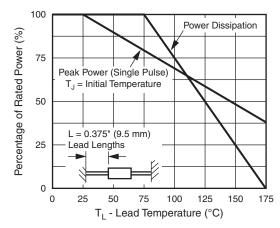


Fig. 2 - Power Derating Curve



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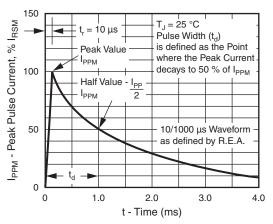
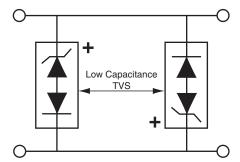


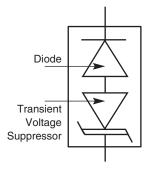
Fig. 3 - Pulse Waveform



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

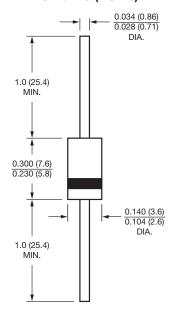
Fig. 4 - AC Line Protection Application

### **SCHEMATIC**



### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

### DO-204AC (DO-15)





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