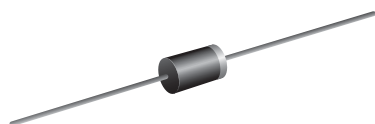


Low Capacitance TRANSZORB® Transient Voltage Suppressors



DO-204AC (DO-15)

FEATURES

- Glass passivated chip junction
- 500 W peak pulse power capability with a 10/1000 μ s 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

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

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	Uni-directional
Package	DO-204AC (DO-15)

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power dissipation with a 10/1000 μ s waveform ⁽¹⁾	P_{PPM}	500	W
Peak pulse current with a 10/1000 μ s 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

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)									
PART NUMBER	BREAKDOWN VOLTAGE AT $I_T = 1.0\text{ mA}$ $V_{BR}\text{ (V)}$	STAND-OFF VOLTAGE ⁽¹⁾ $V_{WM}\text{ (V)}$	MAXIMUM REVERSE LEAKAGE AT V_{WM} $I_D\text{ (}\mu\text{A)}$	MAXIMUM CLAMPING VOLTAGE AT $I_{PP} = 5.0\text{ A}$ $V_C\text{ (V)}$	MAXIMUM PEAK PULSE CURRENT PER FIG. 3 $I_{PP}\text{ (A)}$	MAXIMUM JUNCTION CAPACITANCE AT 0 V $C_J\text{ (pF)}$	WORKING INVERSE BLOCKING VOLTAGE $V_{WIB}\text{ (V)}$	INVERSE BLOCKING LEAKAGE CURRENT $V_{WIB}\text{ } I_{IB}\text{ (mA)}$	PEAK INVERSE BLOCKING VOLTAGE $V_{PIB}\text{ (V)}$
	MIN.								
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 $T_A = 25\text{ }^{\circ}\text{C}$ per fig. 2

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

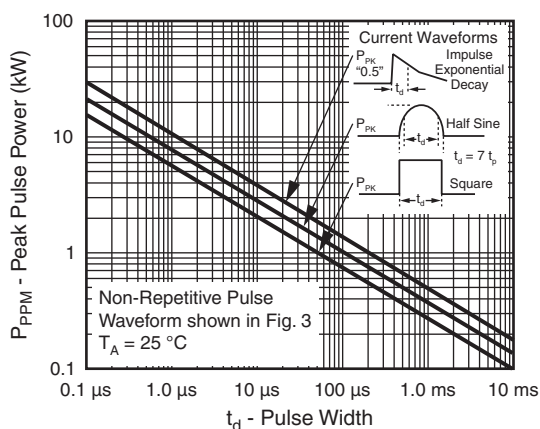
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Peak Pulse Power Rating Curve

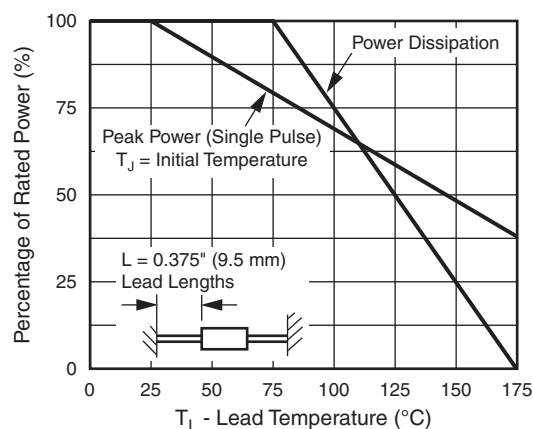


Fig. 2 - Power Derating Curve

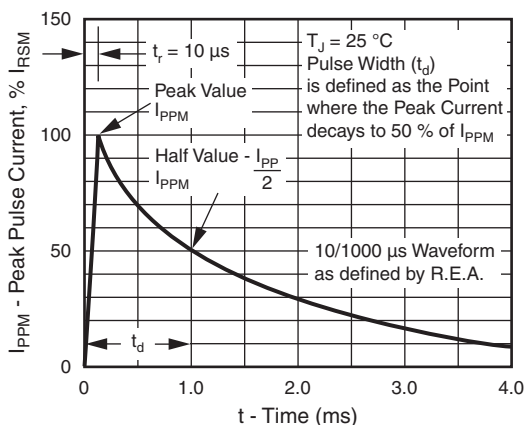
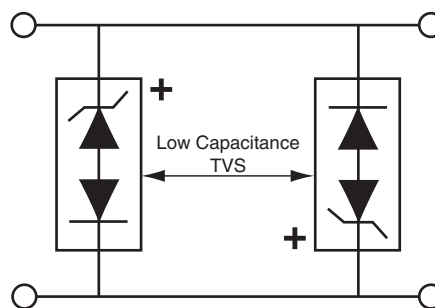


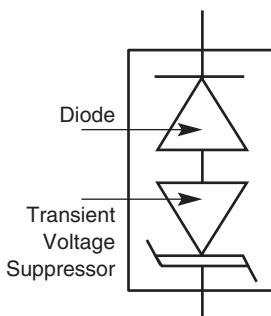
Fig. 3 - Pulse Waveform



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

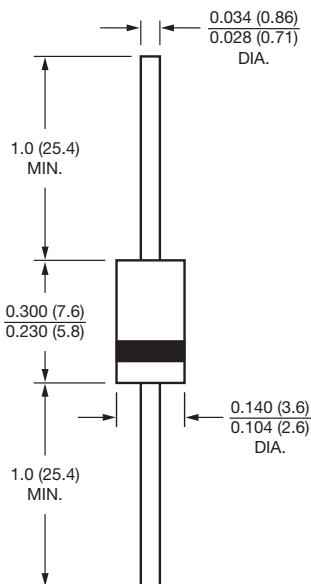
Fig. 4 - AC Line Protection Application

SCHEMATIC



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)





Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.