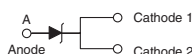


Surface Mount TRANSZORB® Transient Voltage Suppressors

eSMP® Series



TO-277A (SMPC)



FEATURES

- Very low profile - typical height of 1.1 mm
- Ideal for automated placement
- Uni-direction only
- Excellent clamping capability
- Low incremental surge resistance
- Very fast response time
- Meets MSL level 1, per J-STD-020
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

MECHANICAL DATA

Case: TO-277A (SMPC)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test

PRIMARY CHARACTERISTICS

V_{BR} uni-directional	6.40 V to 44.2 V
V_{WM}	5.0 V to 36 V
P_{PPM}	1500 W
P_D	6.5 W
I_{FSM}	200 A
T_J max.	150 °C
Polarity	Uni-directional
Package	DO-277A (SMPC)

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. Sensitive equipment against transient overvoltages.

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation with a 10/1000 μ s waveform (fig. 3)	$P_{PPM}^{(1)(2)}$	1500	W
Peak pulse current with a 10/1000 μ s waveform (fig. 1)	$I_{PPM}^{(1)}$	See next table	A
Peak forward surge current 8.3 ms single half sine-wave	$I_{FSM}^{(2)}$	200	A
Power dissipation on infinite heatsink, $T_A = 50$ °C	P_D	6.5	W
Maximum instantaneous forward voltage at 100 A	$V_F^{(3)}$	3.5	V
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150	°C

Notes

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

(2) Measured on 8.3 ms single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minute maximum

(3) Pulse test: 300 μ s pulse width, 1 % duty cycle

**ELECTRICAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

DEVICE TYPE	DEVICE MARKING CODE	BREAKDOWN VOLTAGE V_{BR} AT I_T ⁽¹⁾ (V)		TEST CURRENT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)	MAXIMUM REVERSE LEAKAGE CURRENT I_R AT V_{WM} (μA)	MAXIMUM PEAK PULSE SURGE CURRENT I_{PPM} ⁽²⁾ (A)	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)
		MIN.	MAX.					
SMPC5.0A	GDE	6.40	7.07	10	5.0	1500	150	10.0
SMPC6.0A	GDG	6.67	7.37	10	6.0	1000	145.6	10.3
SMPC6.5A	GDK	7.22	7.98	10	6.5	500	133.9	11.2
SMPC7.0A	GDM	7.78	8.60	10	7.0	200	125.0	12.0
SMPC7.5A	GDP	8.33	9.21	1.0	7.5	100	116.3	12.9
SMPC8.0A	GDR	8.89	9.83	1.0	8.0	50	110.3	13.6
SMPC8.5A	GDT	9.44	10.4	1.0	8.5	20	104.2	14.4
SMPC9.0A	GDV	10.0	11.1	1.0	9.0	5.0	97.4	15.4
SMPC10A	GDY	11.1	12.3	1.0	10.0	2.0	88.2	17.0
SMPC11A	GDZ	12.2	13.5	1.0	11.0	2.0	82.4	18.2
SMPC12A	GEE	13.3	14.7	1.0	12.0	2.0	75.4	19.9
SMPC13A	GEG	14.4	15.9	1.0	13.0	1.0	69.8	21.5
SMPC14A	GEK	15.6	17.2	1.0	14.0	1.0	64.7	23.2
SMPC15A	GEM	16.7	18.5	1.0	15.0	1.0	61.5	24.4
SMPC16A	GEP	17.8	19.7	1.0	16.0	1.0	57.7	26.0
SMPC17A	GER	18.9	20.9	1.0	17.0	1.0	54.3	27.6
SMPC18A	GET	20.0	22.1	1.0	18.0	1.0	51.4	29.2
SMPC20A	GEV	22.2	24.5	1.0	20.0	1.0	46.3	32.4
SMPC22A	GEX	24.4	26.9	1.0	22.0	1.0	42.3	35.5
SMPC24A	GEZ	26.7	29.5	1.0	24.0	1.0	38.6	38.9
SMPC26A	GFE	28.9	31.0	1.0	26.0	1.0	35.6	42.1
SMPC28A	GFG	31.1	34.4	1.0	28.0	1.0	33.0	45.4
SMPC30A	GFK	33.3	36.8	1.0	30.0	1.0	31.0	48.4
SMPC33A	GFM	36.7	40.6	1.0	33.0	1.0	28.1	53.3
SMPC36A	GFP	40.0	44.2	1.0	36.0	1.0	25.8	58.1

Notes⁽¹⁾ Pulse test: $t \leq 50\text{ ms}$ ⁽²⁾ Surge current waveform per fig. 3 and derated per fig. 2⁽³⁾ All terms and symbols are consistent with ANSI/IEEE C62.35**THERMAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance, junction to ambient air	$R_{\theta JA}$ ⁽¹⁾	125	$^{\circ}\text{C/W}$
Typical thermal resistance, junction to leads	$R_{\theta JL}$ ⁽²⁾	15	

Notes⁽¹⁾ Mounted on minimum recommended pad layout⁽²⁾ Units mounted on infinite heatsink at $T_A = 50\text{ }^{\circ}\text{C}$ **ORDERING INFORMATION** (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SMPC5.0A-M3/86A	0.10	86A	1500	7" diameter plastic tape and reel
SMPC5.0A-M3/87A	0.10	87A	6500	13" diameter plastic tape and reel

RATINGS AND CHARACTERISTICS CURVES

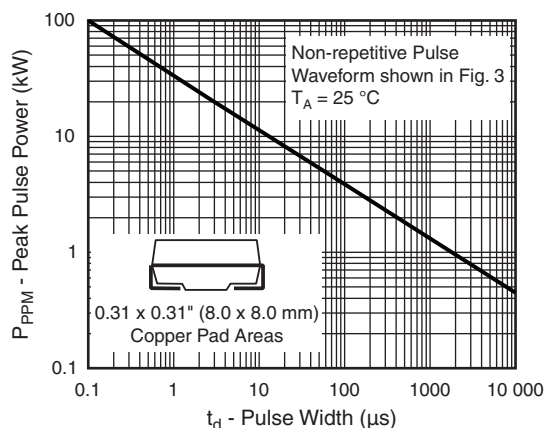
($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Peak Pulse Power Rating Curve

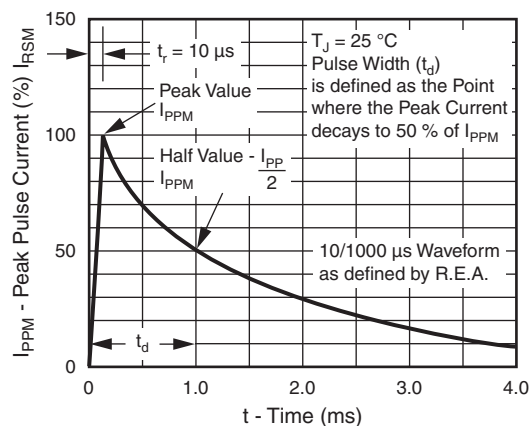


Fig. 3 - Pulse Waveform

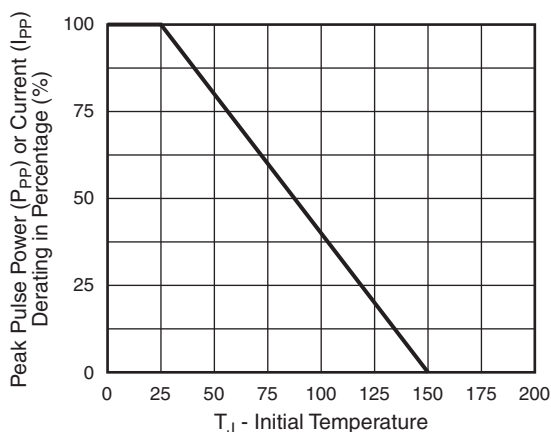


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

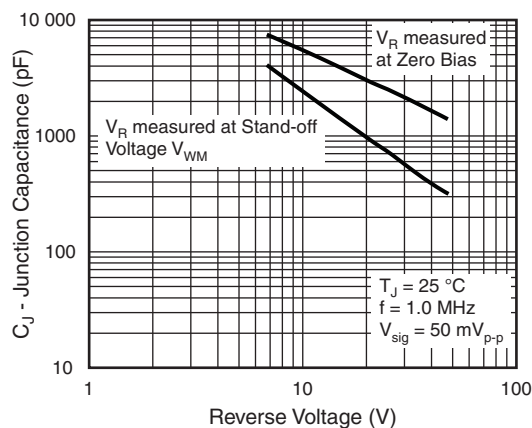
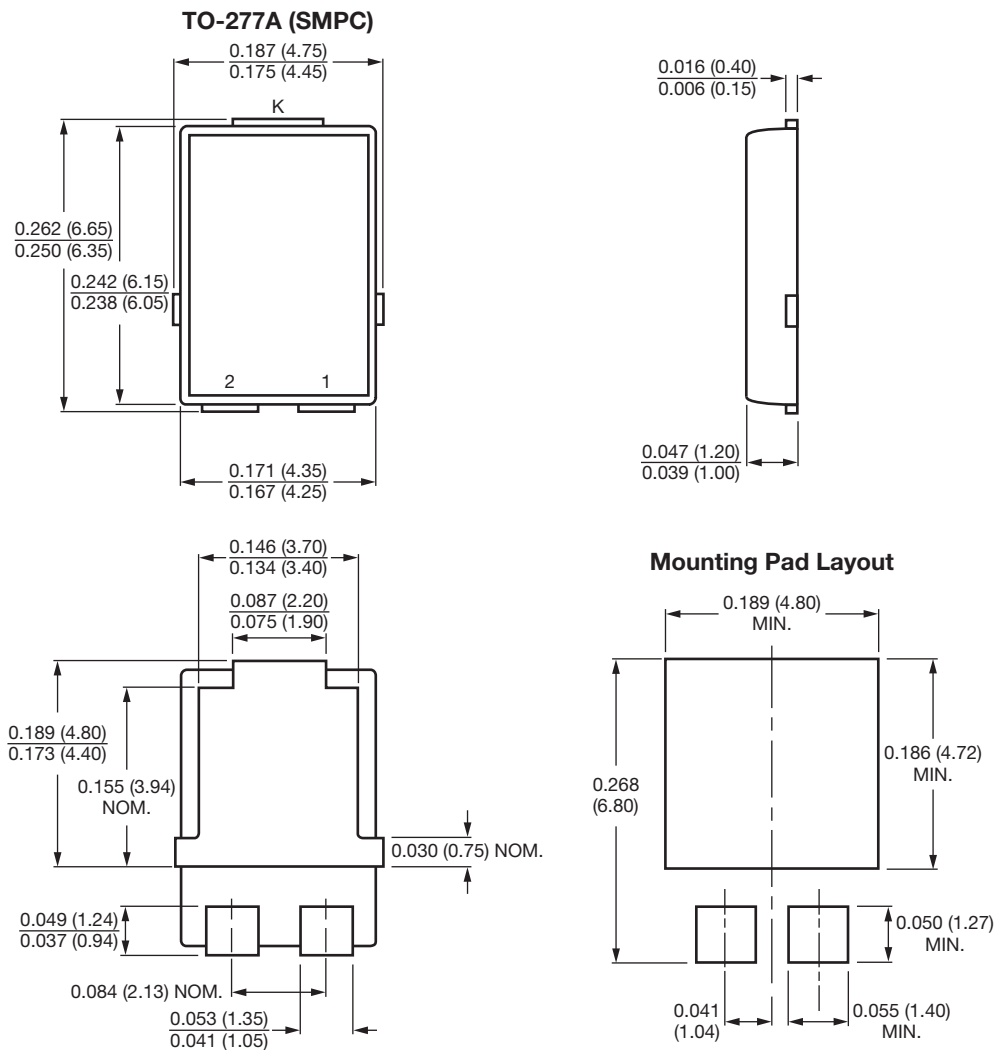


Fig. 4 - Typical Junction Capacitance



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Conform to JEDEC TO-277A



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.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9