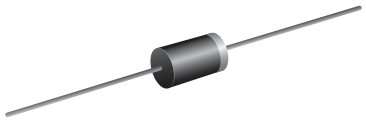
PAR® Transient Voltage Suppressors

High Temperature Stability and High Reliability Conditions



MPG06

FEATURES

- Available in unidirectional polarity only
- 400 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 resistance
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

PRIMARY CHARACTERISTICS	
V_{BR}	10 V to 43 V
V_{WM}	8.55 V to 36.8 V
P_{PPM}	400 W
P_D	1.0 W
I_{FSM}	40 A
T_J max.	185 °C
Polarity	Unidirectional
Package	MPG06

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, automotive, and telecommunication.

MECHANICAL DATA

Case: MPG06, molded epoxy over passivated junction
Molding compound meets UL 94 V-0 flammability rating

Base P/NHE3_X - RoHS-compliant, AEC-Q101 qualified
("X" denotes revision code e.g. A, B, ...)

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
HE3 suffix meets JESD 201 class 2 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) (fig. 1)	P_{PPM}	400	W
Peak pulse current with a 10/1000 µs waveform (1)(2) (fig. 3)	I_{PPM}	See next table	A
Power dissipation on infinite heatsink at T_L = 75 °C (fig. 5)	P_D	1.0	W
Peak forward surge current 8.3 ms single half sine-wave (2)	I_{FSM}	40	A
Maximum instantaneous forward voltage at 25 A (2)	V_F	3.5	V
Operating junction and storage temperature range	T_J, T_{STG}	-65 to +185	°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

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ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)									
DEVICE TYPE	BREAKDOWN VOLTAGE V_{BR} AT I_T (1) (V)		TEST CURRENT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (µA)	REVERSE LEAKAGE AT V_{WM} T_J = 150 °C (µA)	MAXIMUM PEAK PULSE CURRENT I_{PPM} (2) (A)	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)	MAXIMUM TEMPERATURE COEFFICIENT OF V_{BR} (%/°C)
	MIN.	MAX.							
TMPG06-10A	9.50	10.5	1.0	8.55	5.0	20.0	27.6	14.5	0.073
TMPG06-11A	10.5	11.6	1.0	9.40	2.0	10.0	25.6	15.6	0.075
TMPG06-12A	11.4	12.6	1.0	10.2	1.0	5.0	24.0	16.7	0.078
TMPG06-13A	12.4	13.7	1.0	11.1	1.0	5.0	22.0	18.2	0.081
TMPG06-15A	14.3	15.8	1.0	12.8	1.0	5.0	18.9	21.2	0.084
TMPG06-16A	15.2	16.8	1.0	13.6	1.0	5.0	17.8	22.5	0.086
TMPG06-18A	17.1	18.9	1.0	15.3	1.0	5.0	15.9	25.5	0.088
TMPG06-20A	19.0	21.0	1.0	17.0	1.0	5.0	14.4	27.7	0.090
TMPG06-22A	20.9	23.1	1.0	18.8	1.0	5.0	13.1	30.6	0.092
TMPG06-24A	22.8	25.2	1.0	20.5	1.0	5.0	12.0	33.2	0.094
TMPG06-27A	25.7	28.4	1.0	23.1	1.0	5.0	10.7	37.5	0.096
TMPG06-30A	28.5	31.5	1.0	25.6	1.0	5.0	9.7	41.4	0.097
TMPG06-33A	31.4	34.7	1.0	28.2	1.0	5.0	8.8	45.7	0.098
TMPG06-36A	34.2	37.8	1.0	30.8	1.0	5.0	8.0	49.9	0.099
TMPG06-39A	37.1	41.0	1.0	33.3	1.0	5.0	7.4	53.9	0.100
TMPG06-43A	40.9	45.2	1.0	36.8	1.0	5.0	6.7	59.3	0.101

Notes

(1) Pulse test: $t_p \leq 50$ ms

(2) Surge current waveform per fig. 3 and derated per fig. 2

(3) All terms and symbols are consistent with ANSI/IEEE CA62.35

ORDERING INFORMATION (Example)				
PREFERRED PIN	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TMPG06-10AHE3_A/C (1)	0.218	C	5500	13" diameter paper tape and reel

Note

(1) AEC-Q101 qualified

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

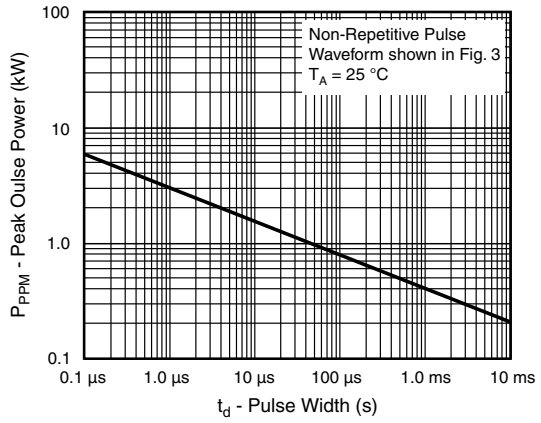


Fig. 1 - Peak Pulse Power Rating Curve

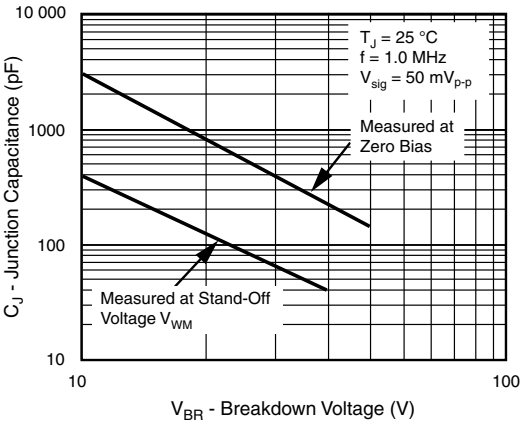


Fig. 4 - Typical Junction Capacitance

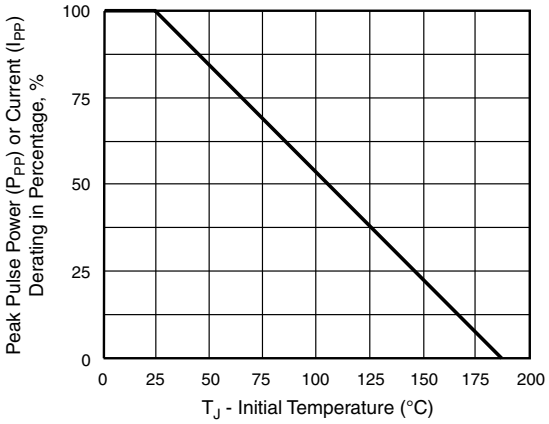


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

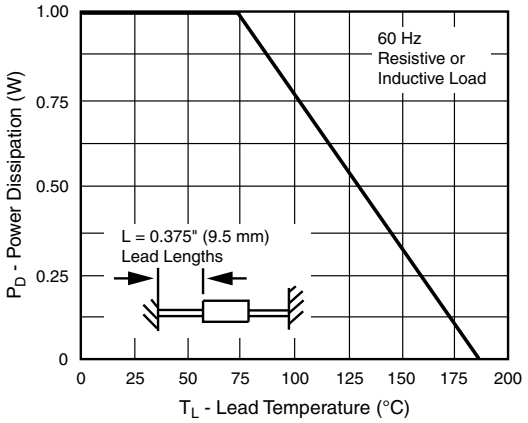


Fig. 5 - Power Derating Curve

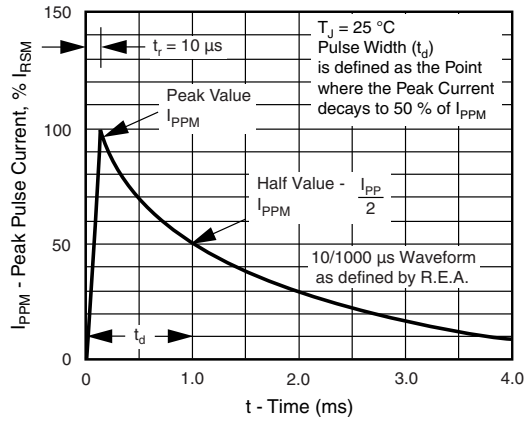


Fig. 3 - Pulse Waveform

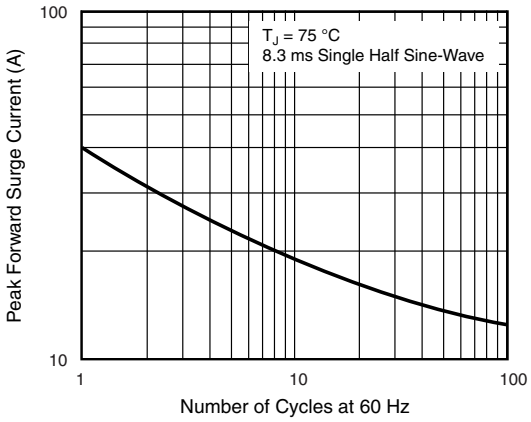
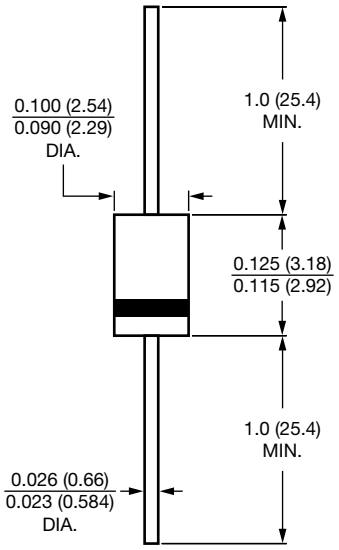


Fig. 6 - Maximum Non-Repetitive Forward Surge Current

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

MPG06



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