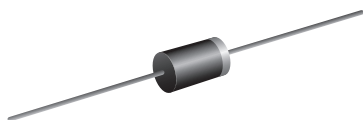


Transient Voltage Suppressors

TMPG06-6.8A - TMPG06-43A

Vishaymas General Semiconductor



MPG06

FEATURES

- Available in uni-directional polarity only
- 400 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 resistance
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishaymas.com

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

PRIMARY CHARACTERISTICS	
V_{BR}	6.8 V to 43 V
V_{WM}	5.80 V to 36.8 V
P_{PPM}	400 W
P_D	1.0 W
I_{FSM}	40 A
T_J max.	185 °C
Polarity	Uni-directional
Package	MPG06

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power dissipation with a 10/1000 μ s waveform ⁽¹⁾ (fig. 1)	P_{PPM}	400	W
Peak pulse current with a 10/1000 μ s waveform ⁽¹⁾⁽²⁾ (fig. 3)	I_{PPM}	See next table	A
Power dissipation on infinite heatsink at $T_L = 75\text{ °C}$ (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 $T_A = 25\text{ °C}$ per fig. 2

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

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)									
DEVICE TYPE 型号	BREAKDOWN VOLTAGE V_{BR} AT I_T ⁽¹⁾ 最大崩溃电压 (V)		TEST CURRENT I_T 测试电流 (mA)	STAND-OFF VOLTAGE V_{WM} 对峙电压 (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D 最大反向漏电 (μA)	REVERSE LEAKAGE AT V_{WM} $T_J = 150^\circ\text{C}$ (μA) 反向漏电	MAXIMUM PEAK PULSE CURRENT I_{PPM} ⁽²⁾ 峰值脉冲电流 (A)	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} 最大嵌位电压 V_C (V)	MAXIMUM TEMPERATURE COEFFICIENT OF V_{BR} 最大温度系数 (%/°C)
	MIN.	MAX.							
TMPG06-6.8A	6.45	7.14	10.0	5.80	300	1000	28.6	10.5	0.057
TMPG06-7.5A	7.13	7.88	10.0	6.40	150	500	26.5	11.3	0.061
TMPG06-8.2A	7.79	8.61	10.0	7.02	50.0	200	24.8	12.1	0.065
TMPG06-9.1A	8.65	9.55	1.0	7.78	10.0	50.0	22.4	13.4	0.068
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

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

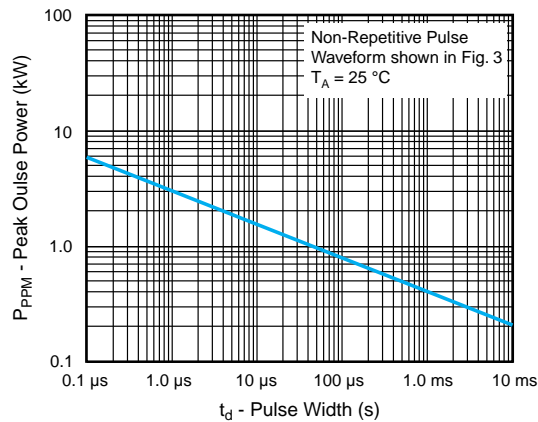


Fig. 1 - Peak Pulse Power Rating Curve

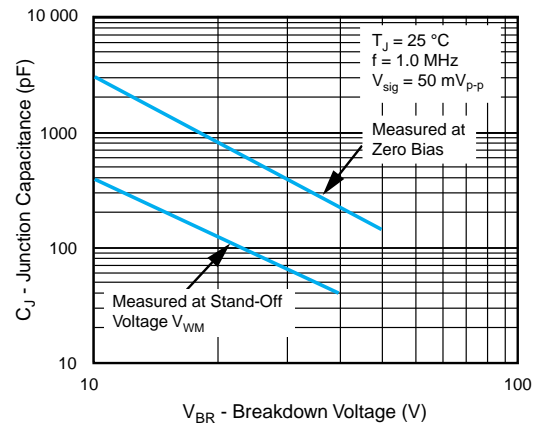


Fig. 4 - Typical Junction Capacitance

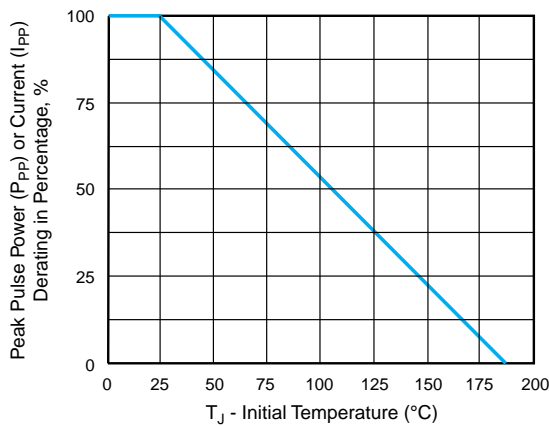


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

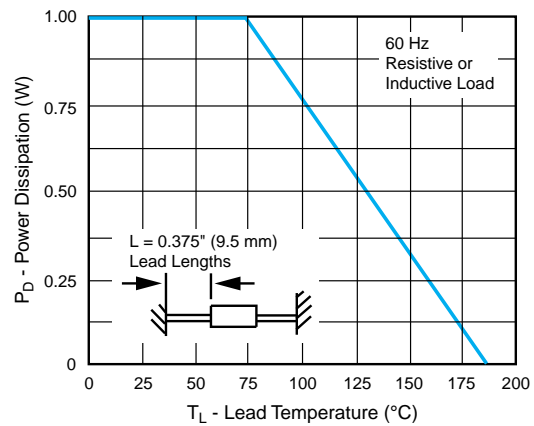


Fig. 5 - Power Derating Curve

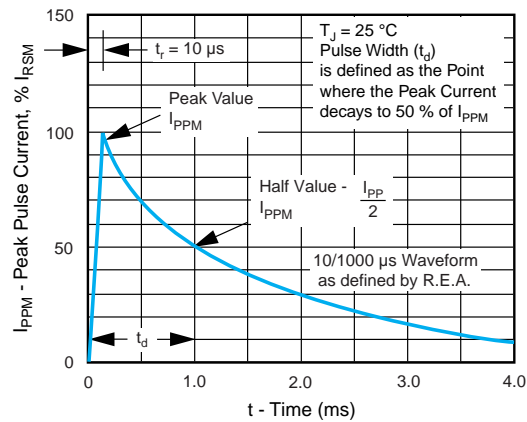


Fig. 3 - Pulse Waveform

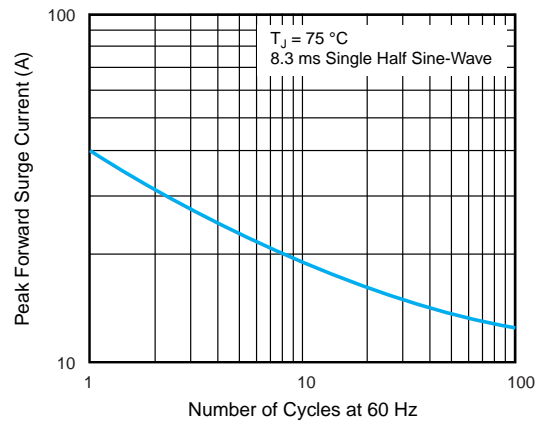


Fig. 6 - Maximum Non-Repetitive Forward Surge Current

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

