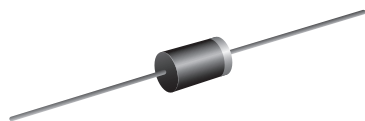




Miniature Glass Passivated Junction Plastic Rectifier



MPG06

FEATURES

- Glass passivated chip junction
- Low forward voltage drop
- Low leakage current, typical I_R less than 0.1 μA
- High forward surge capability
- 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

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes application.

MECHANICAL DATA

Case: MPG06, molded epoxy over passivated chip

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

Base P/NHE3_X - RoHS-compliant and 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

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

PRIMARY CHARACTERISTICS

Package	MPG06
$I_{F(AV)}$	1.0 A
V_{RRM}	50 V to 1000 V
I_{FSM}	40 A
V_F	1.1 V
I_R	5.0 μA
T_J max.	150 °C
Diode variations	Single

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

PARAMETER	SYMBOL	MPG06A	MPG06B	MPG06D	MPG06G	MPG06J	MPG06K	MPG06M	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 25$ °C	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	40							A
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150							°C



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

PARAMETER	TEST CONDITIONS		SYMBOL	MPG06A	MPG06B	MPG06D	MPG06G	MPG06J	MPG06K	MPG06M	UNIT
Maximum instantaneous forward voltage	1.0 A		V_F	1.1							V
Maximum DC reverse current at rated DC blocking voltage		$T_A = 25\text{ }^{\circ}\text{C}$	I_R	5.0							μA
		$T_A = 125\text{ }^{\circ}\text{C}$		50							
Typical reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$		t_{rr}	0.6							μs
Typical junction capacitance	4.0 V, 1 MHz		C_J	10							pF

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

PARAMETER	SYMBOL	MPG06A	MPG06B	MPG06D	MPG06G	MPG06J	MPG06K	MPG06M	UNIT
Typical thermal resistance	R _{θJA} ⁽¹⁾	67							°C/W
	R _{θJL} ⁽¹⁾	30							

Note

⁽¹⁾ Thermal resistance from junction to ambient and from junction to lead at 0.375" (9.5 mm) lead length, PCB mounted with 0.22" x 0.22" (5.5 mm x 5.5 mm) copper pads

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
MPG06J-E3/54	0.202	54	5500	13" diameter paper tape and reel
MPG06J-E3/73	0.202	73	3000	Ammo pack packaging
MPG06JHE3/54 ⁽¹⁾	0.202	54	5500	13" diameter paper tape and reel
MPG06JHE3/73 ⁽¹⁾	0.202	73	3000	Ammo pack packaging
MPG06JHE3_A/54 ⁽¹⁾	0.202	54	5500	13" diameter paper tape and reel
MPG06JHE3_A/73 ⁽¹⁾	0.202	73	3000	Ammo pack packaging

Note

⁽¹⁾ AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

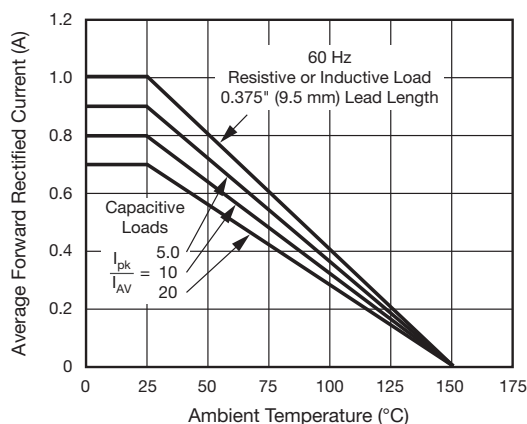


Fig. 1 - Forward Current Derating Curve

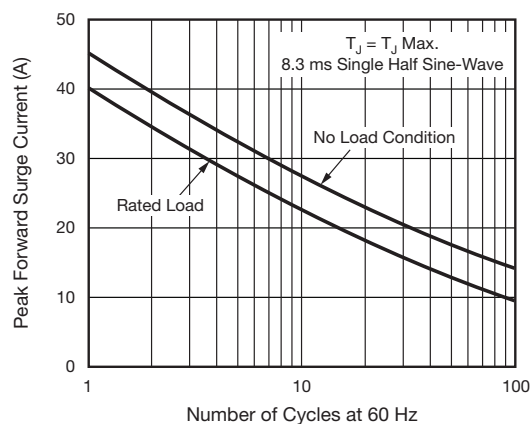


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

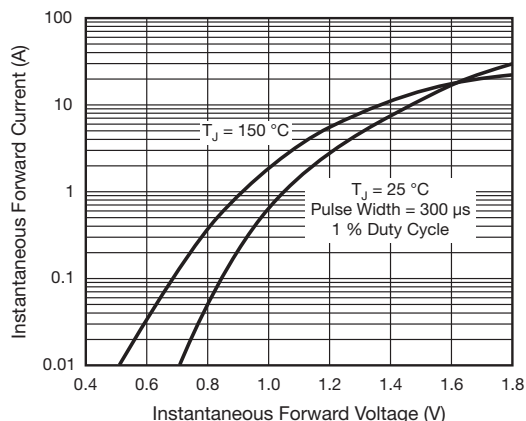


Fig. 3 - Typical Instantaneous Forward Characteristics

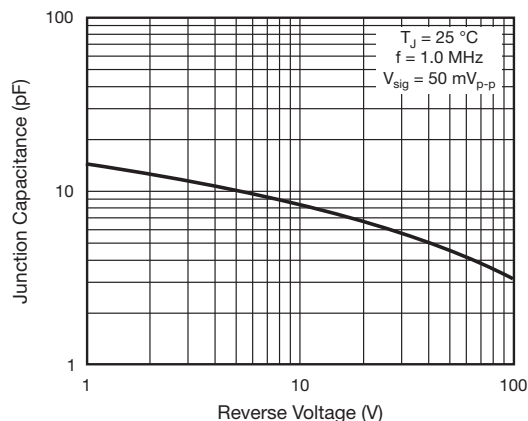


Fig. 5 - Typical Junction Capacitance

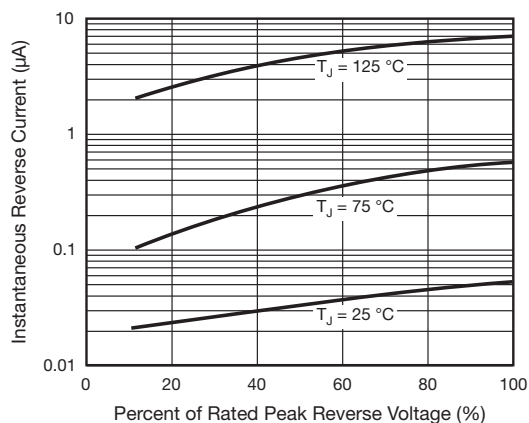


Fig. 4 - Typical Reverse Characteristics

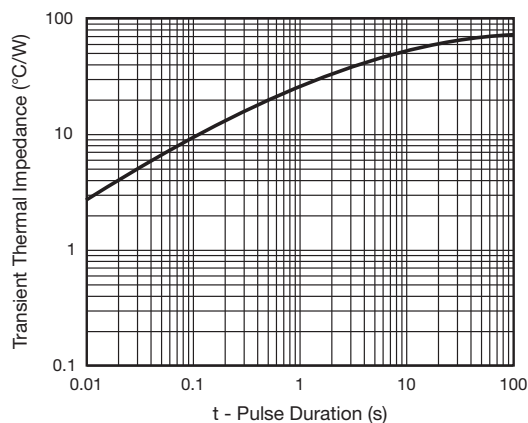
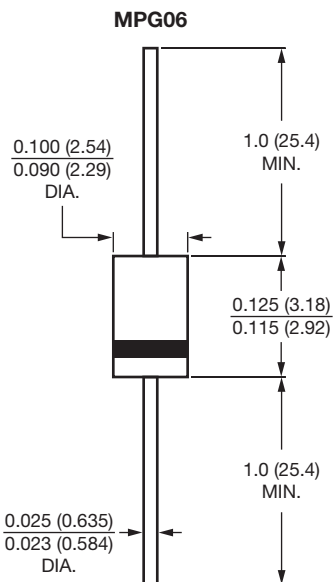


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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