Miniature Glass Passivated Fast Switching Plastic Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	1.0 V
V_{RRM}	50 V to 600 V
I_{FSM}	40 A
t_{rr}	150 ns, 200 ns
V_F	1.3 V
I_R	5.0 µA
T_j max.	150 °C

Case Style MPG06

Features

- Glass passivated chip junction
- Fast switching for high efficiency
- Low forward voltage drop
- Low leakage current, typical I_R less than 0.1 µA
- High forward surge capability
- Solder Dip 260 °C, 40 seconds

Mechanical Data

Case: MPG06, molded epoxy over passivated chip

Epoxy meets UL-94V-0 Flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes cathode end

Typical Applications

For general purpose of medium frequency rectification.

Maximum Ratings

(T_A = 25 °C unless otherwise noted)

Parameter	Symbol	RMPG06A	RMPG06B	RMPG06D	RMPG06G	RMPG06J	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	V
Maximum DC blocking voltage	V_{DC}	50	70	200	400	600	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 °C unless otherwise noted)

Paramater	Test condition	Symbol	RMPG06A	RMPG06B	RMPG06D	RMPG06G	RMPG06J	Unit
Maximum instantaneous forward voltage	at 1.0 A	V_F	1.3					V
Maximum DC reverse current at rated DC blocking voltage	T_A= 25 °C T_A= 125 °C	I_R	5.0 50					µA
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	6.6					pF
Typical reverse recovery time	at I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	t_{rr}	150				200	ns

Thermal Characteristics

(T_A = 25 °C unless otherwise noted)

Parameter	Symbol	RMPG06A	RMPG06B	RMPG06D	RMPG06G	RMPG06J	Unit
Typical thermal resistance (1)	$R_{\theta JA}$ $R_{\theta JL}$	67 30					°C/W

Notes:

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

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise specified)

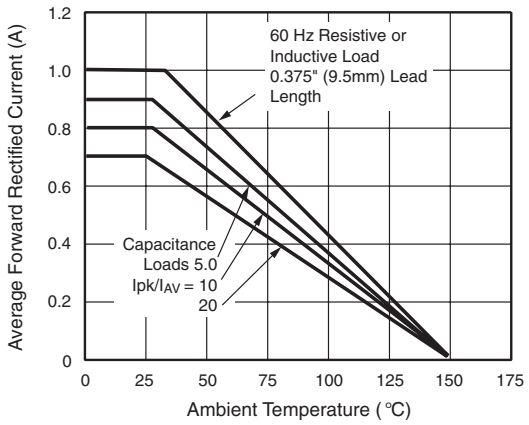


Figure 1. Forward Current Derating Curve

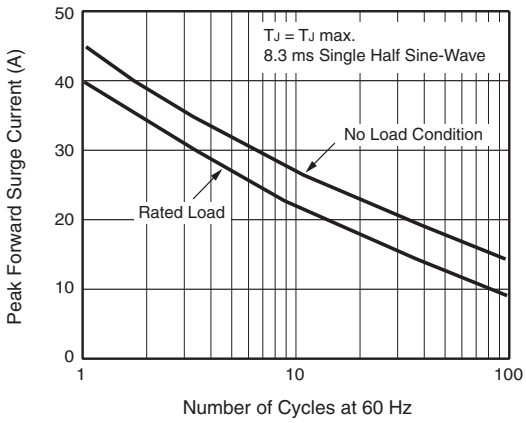


Figure 2. Maximum Peak Forward Surge Current

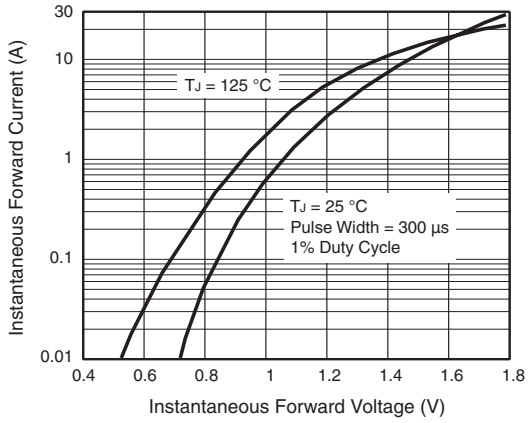


Figure 3. Typical Instantaneous Forward Characteristics

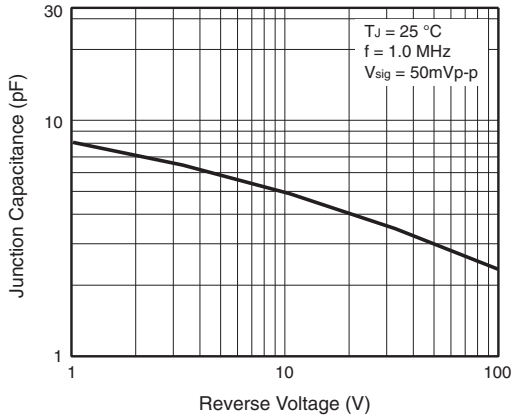


Figure 5. Typical Junction Capacitance Per Leg

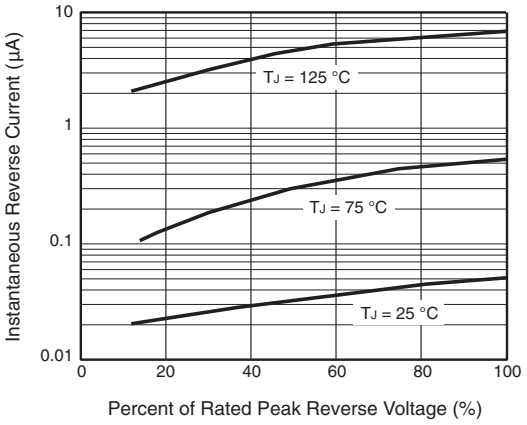


Figure 4. Typical Reverse Characteristics

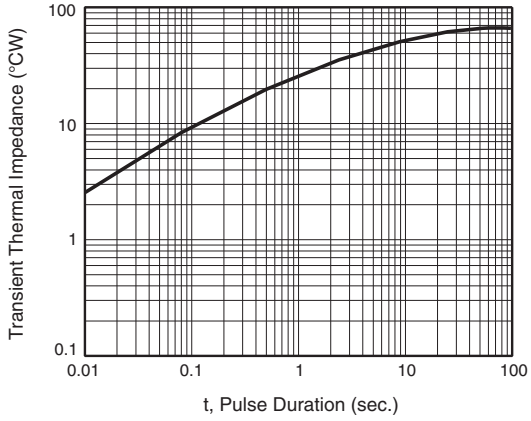
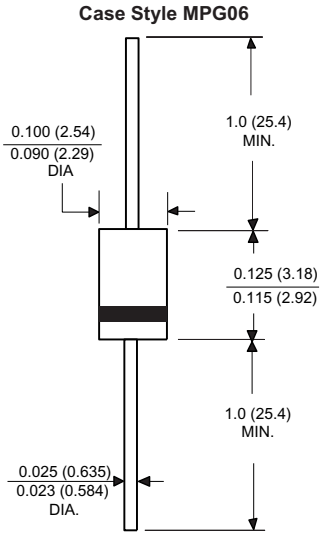


Figure 6. Typical Transient Thermal Impedance

Package outline dimensions in inches (millimeters)



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