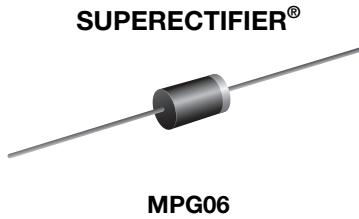


## Miniature Fast Switching Plastic Rectifier



### FEATURES

- Glass passivated pellet chip junction
- Fast switching for high efficiency
- Low leakage current, typical  $I_R$  less than 0.1  $\mu$ A
- 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](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

For use in fast switching rectification of power supply, inverters, converters, and freewheeling diodes for consumer, automotive, and telecommunication.

### 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\_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	
$I_{F(AV)}$	1.0 A
$V_{RRM}$	50 V, 100 V, 200 V, 400 V, 600 V, 800 V
$I_{FSM}$	40 A
$t_{rr}$	150 ns, 200 ns, 250 ns
$V_F$	1.3 V
$I_R$	5.0 $\mu$ A
$T_J$ max.	150 °C
Package	MPG06
Diode variation	Single die

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)								
PARAMETER	SYMBOL	RMPG06A	RMPG06B	RMPG06D	RMPG06G	RMPG06J	RMPG06K	UNIT
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	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

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)										
PARAMETER	TEST CONDITIONS		SYMBOL	RMPG06A	RMPG06B	RMPG06D	RMPG06G	RMPG06J	RMPG06K	UNIT
Maximum instantaneous forward voltage	1.0 A		$V_F$	1.3						V
Maximum DC reverse current at rated DC blocking voltage		$T_A = 25^\circ\text{C}$	$I_R$	5.0					$\mu\text{A}$	
		$T_A = 125^\circ\text{C}$		50						
Typical reverse recovery time	$I_F = 0.5 \text{ A}$ , $I_R = 1.0 \text{ A}$ , $I_{rr} = 0.25 \text{ A}$	$t_{rr}$		150			200	250	ns	
Typical junction capacitance	4.0 V, 1 MHz	$C_J$		6.6					pF	

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	RMPG06A	RMPG06B	RMPG06D	RMPG06G	RMPG06J	RMPG06K	UNIT	
Typical thermal resistance	$R_{\theta JA}^{(1)}$	67					$^\circ\text{C/W}$		
	$R_{\theta JL}^{(1)}$	30							

**Note**

<sup>(1)</sup> 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

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
RMPG06J-E3/54	0.202	54	5500	13" diameter paper tape and reel
RMPG06J-E3/73	0.202	73	3000	Ammo pack packaging
RMPG06JHE3_A/54 <sup>(1)</sup>	0.202	54	5500	13" diameter paper tape and reel
RMPG06JHE3_A/73 <sup>(1)</sup>	0.202	73	3000	Ammo pack packaging

**Note**

<sup>(1)</sup> AEC-Q101 qualified

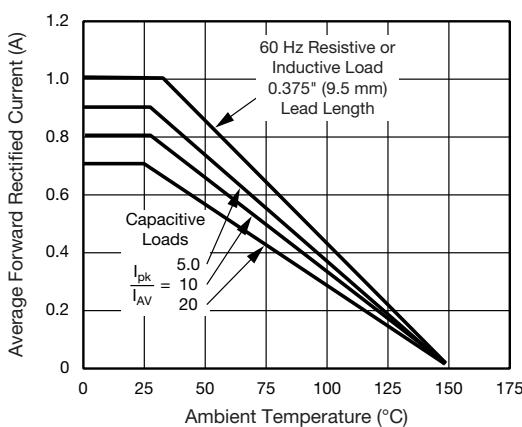
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

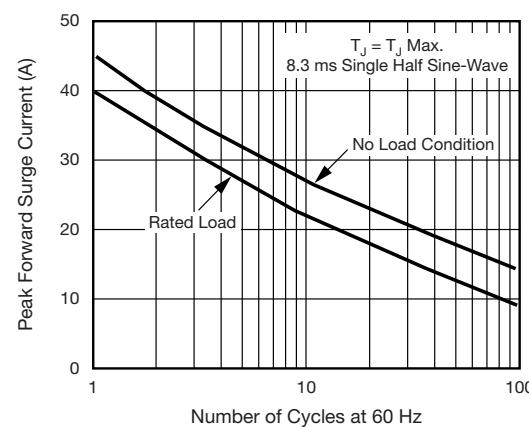
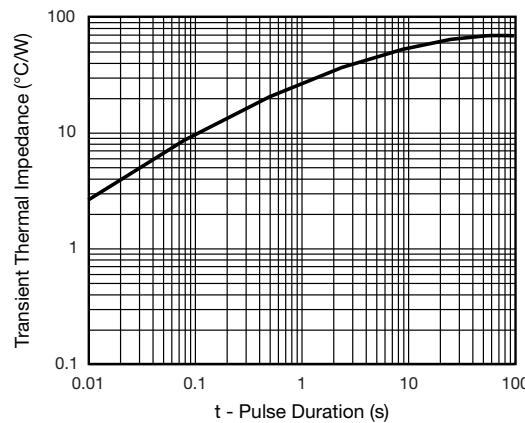
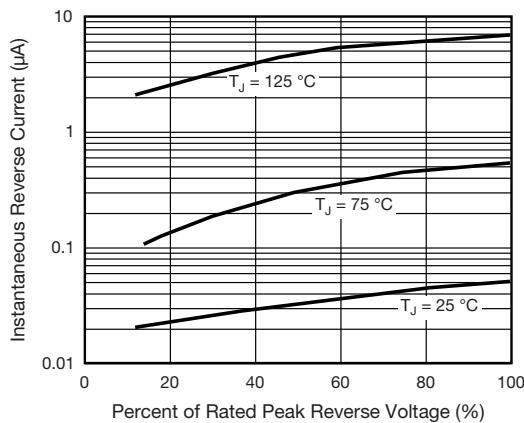
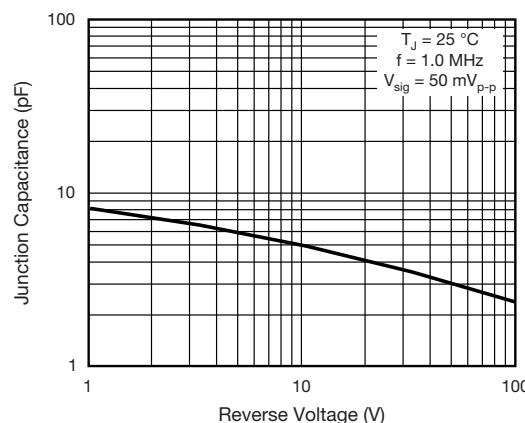
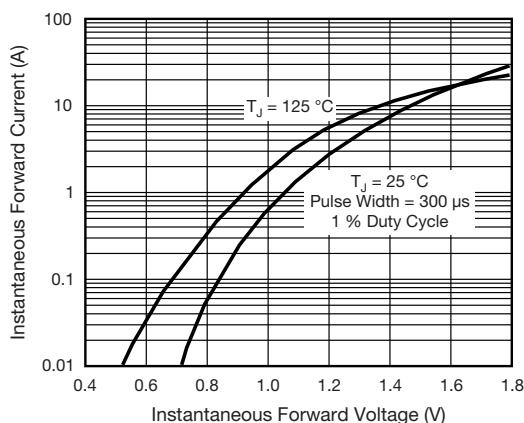
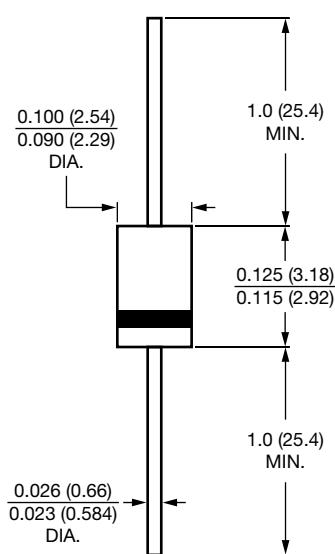


Fig. 2 - Maximum Peak Forward Surge Current


**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**MPG06**


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