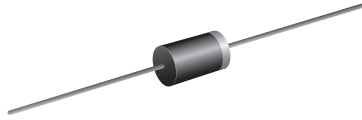


Miniature Ultrafast Plastic Rectifier


MPG06

FEATURES

- Glass passivated pellet chip junction
- Ultrafast reverse recovery time
- Soft recovery characteristics
- Low forward voltage drop
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

MECHANICAL DATA

Case: MPG06

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: Color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	0.6 A
V_{RRM}	50 V, 100 V, 150 V, 200 V
I_{FSM}	40 A
t_{rr}	15 ns
V_F	0.95 V
T_J max.	150 °C
Package	MPG06
Diode variations	Single die

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)						
PARAMETER	SYMBOL	UG06A	UG06B	UG06C	UG06D	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	
Maximum DC blocking voltage	V_{DC}	50	100	150	200	
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	0.6				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	40				
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150				°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ °C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS	SYMBOL	VALUE	UNIT		
Maximum instantaneous forward voltage	$I_F = 0.6\text{ A}$	$V_F^{(1)}$	0.95	V		
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ °C}$ $T_A = 100\text{ °C}$	I_R	5.0	μA		
			100			
Maximum reverse recovery time	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$	t_{rr}	15	ns		
Maximum reverse recovery time	$I_F = 0.6\text{ A}, V_R = 30\text{ V}, dI/dt = 50\text{ A}/\mu\text{s}, I_{rr} = 10\% I_{RM}$	t_{rr}	$T_J = 25\text{ °C}$			25
			$T_J = 100\text{ °C}$			35
Maximum stored charge	$I_F = 0.6\text{ A}, V_R = 30\text{ V}, dI/dt = 50\text{ A}/\mu\text{s}, I_{rr} = 10\% I_{RM}$	Q_{rr}	$T_J = 25\text{ °C}$	8.0	nC	
			$T_J = 100\text{ °C}$	20		
Typical junction capacitance	4 V, 1 MHz	C_J	9.0	pF		

Note

(1) Pulse test: 300 μs pulse width, 1 % duty cycle



THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	UG06A	UG06B	UG06C	UG06D	UNITS
Typical thermal resistance	$R\theta_{JA}^{(1)}$	97				$^\circ\text{C/W}$
	$R\theta_{JL}^{(1)}$	28				

Note

(1) Thermal resistance from junction to ambient and junction to lead at 0.375" (9.5 mm) lead length, PCB mounted with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pads

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
UG06D-E3/54	0.181	54	5500	13" diameter paper tape and reel
UG06D-E3/73	0.181	73	3000	Ammo pack packaging

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

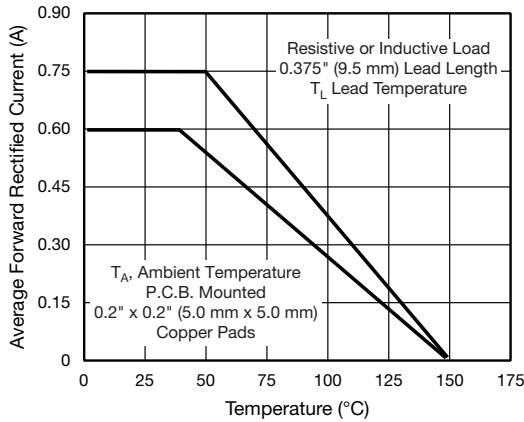


Fig. 1 - Maximum Forward Current Derating Curves

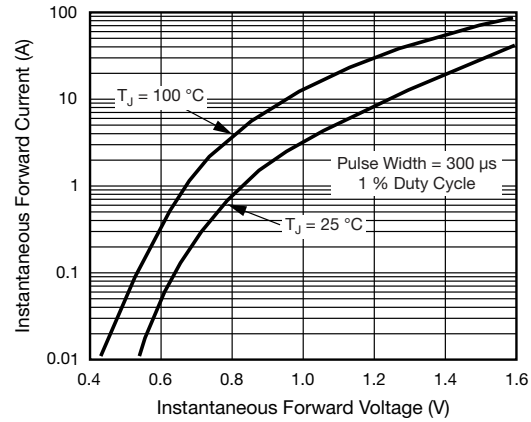


Fig. 3 - Typical Instantaneous Forward Characteristics

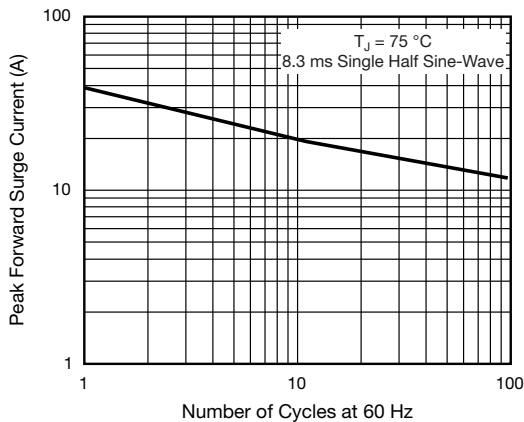


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

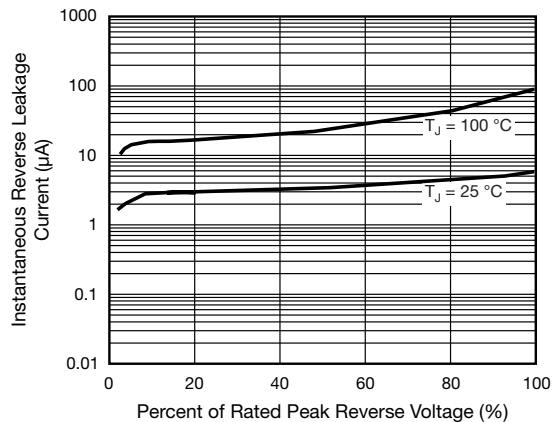


Fig. 4 - Typical Reverse Leakage Characteristics

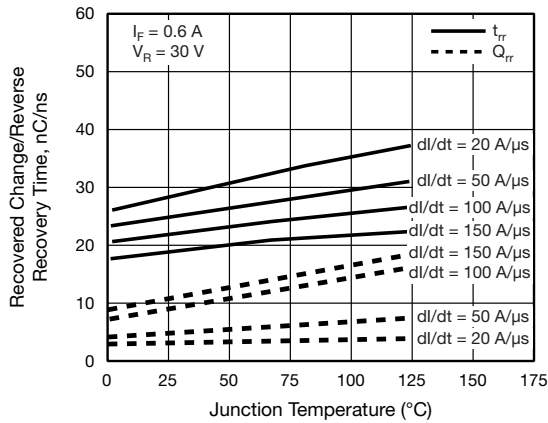


Fig. 5 - Reverse Switching Characteristics

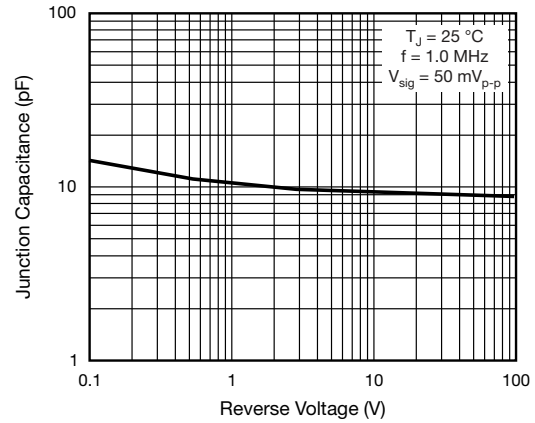
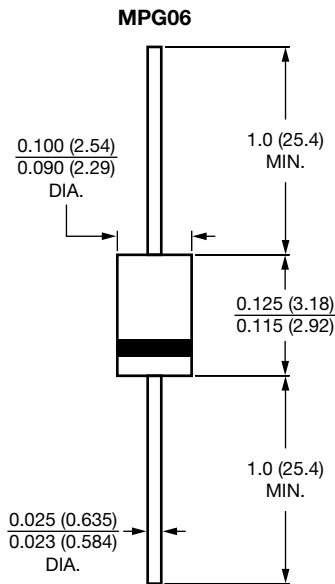


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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