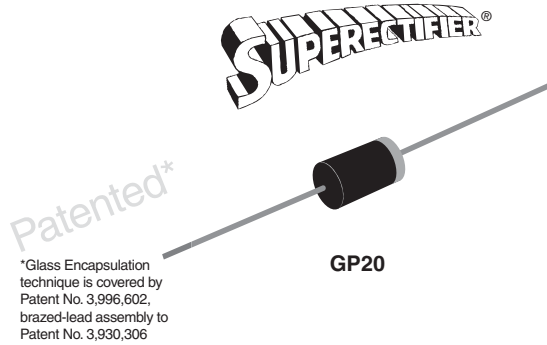




**THE DATASHEET OF
EGP50A-E3/54**



Glass Passivated Ultrafast Rectifier



FEATURES

- Cavity-free glass-passivated junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



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: GP20, molded epoxy over glass body

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	5.0 A
V_{RRM}	50 V to 400 V
I_{FSM}	150 A
t_{rr}	50 ns
V_F	0.95 V, 1.25 V
$T_J \text{ max.}$	150 °C

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)								
PARAMETER	SYMBOL	EGP50A	EGP50B	EGP50C	EGP50D	EGP50F	EGP50G	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_L = 55\text{ °C}$	$I_{F(AV)}$	5						A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	150						A
Operating and storage temperature range	T_J, T_{STG}	- 65 to + 150						°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
PARAMETER	TEST CONDITIONS	SYMBOL	EGP50A	EGP50B	EGP50C	EGP50D	EGP50F	EGP50G	UNIT
Maximum instantaneous forward voltage	5.0 A	V_F	0.95				1.25		V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 125\text{ }^\circ\text{C}$	I_R	5.0 50						μA
Maximum reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$	t_{rr}	50						ns
Typical junction capacitance	4.0 V, 1 MHz	C_J	95				75		pF

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	EGP50A	EGP50B	EGP50C	EGP50D	EGP50F	EGP50G	UNIT	
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$ $R_{\theta JL}$	20 5.0						$^\circ\text{C/W}$	

Note:

(1) Thermal resistance from junction to ambient, and from junction to lead at 0.375" (9.5 mm) lead length, P.C.B. mounted

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
EGP50G-E3/54	1.01	54	1400	13" diameter paper tape and reel
EGP50G-E3/73	1.01	73	1000	Ammo pack packaging
EGP50GHE3/54 ⁽¹⁾	1.01	54	1400	13" diameter paper tape and reel
EGP50GHE3/73 ⁽¹⁾	1.01	73	1000	Ammo pack packaging

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

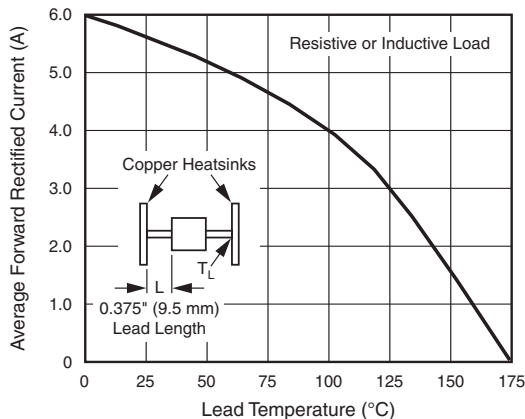


Figure 1. Maximum Forward Current Derating Curve

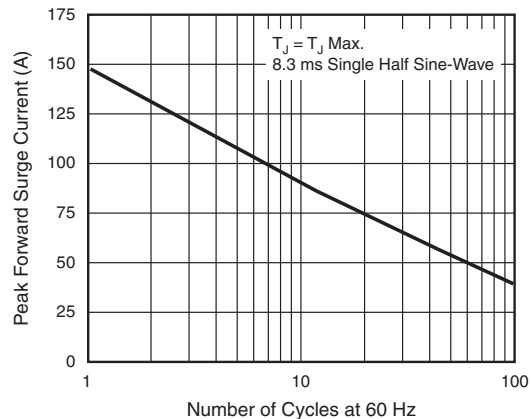


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

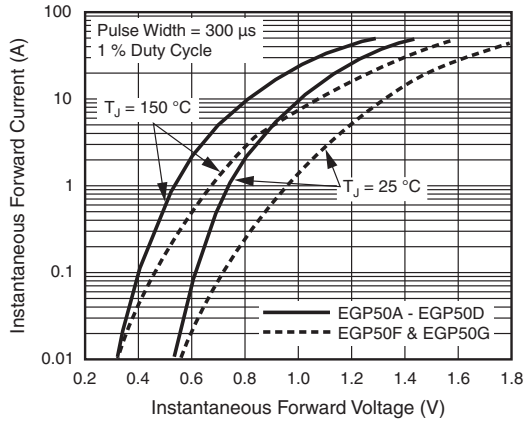


Figure 3. Typical Instantaneous Forward Characteristics

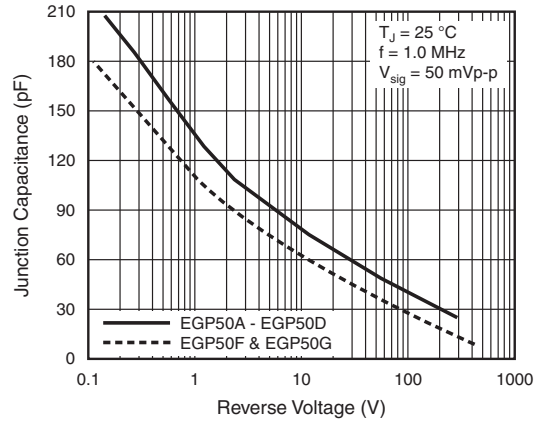


Figure 5. Typical Junction Capacitance

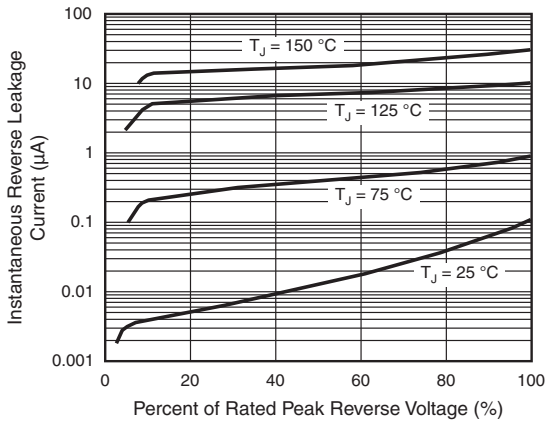


Figure 4. Typical Reverse Leakage Characteristics

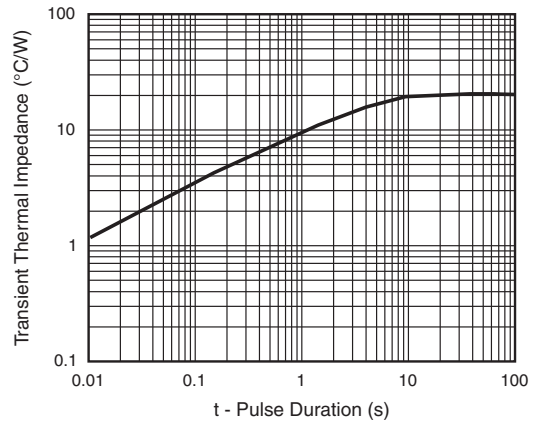
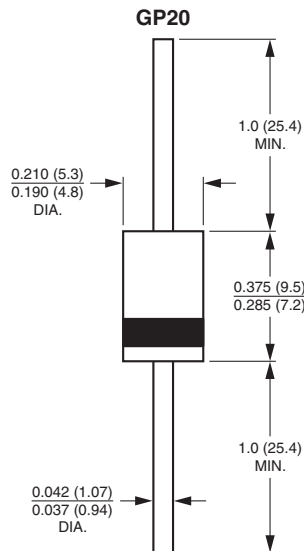


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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