


## Glass Passivated Junction Rectifier



### FEATURES

- Superelectifier structure for High Reliability application 
- Cavity-free glass-passivated junction
- Low forward voltage drop
- Low leakage current,  $I_R$  less than  $0.1 \mu A$
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder Dip  $260^\circ C$ , 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

### TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for both consumer and automotive applications.

### 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-002B and JESD22-B102D

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

**Polarity:** Color band denotes cathode end

MAJOR RATINGS AND CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
$V_{RRM}$	50 V to 600 V
$I_{FSM}$	65 A
$V_F$	1.2 V, 1.1 V
$I_R$	$5.0 \mu A$
$T_J$ max.	$175^\circ C$

MAXIMUM RATINGS ( $T_A = 25^\circ C$ unless otherwise noted)							
PARAMETER	SYMBOL	GP20A	GP20B	GP20D	GP20G	GP20J	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	100	200	400	600	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_A = 55^\circ C$	$I_{F(AV)}$	2.0					A
Peak forward surge current 8.3 ms single half sine wave superimposed on rated load	$I_{FSM}$	65					A
Maximum full load reverse current, full cycle average, 0.375" (9.5 mm) lead length at $T_A = 55^\circ C$	$I_{R(AV)}$	100					$\mu A$
Operating junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 175					$^\circ C$

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

PARAMETER	TEST CONDITIONS	SYMBOL	GP20A	GP20B	GP20D	GP20G	GP20J	UNIT
Maximum instantaneous forward voltage	at 2.0 A	$V_F$	1.2		1.1			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			$\mu\text{A}$
Typical reverse recovery time	at $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $t_{rr} = 0.25\text{ A}$	$t_{rr}$			5.0			$\mu\text{s}$
Typical junction capacitance	at 4.0 V, 1 MHz	$C_J$			40			pF

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

PARAMETER	SYMBOL	GP20A	GP20B	GP20D	GP20G	GP20J	UNIT
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$ $R_{\theta JL}$			25 10			$^{\circ}\text{C/W}$

**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**

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GP20J-E3/54	1.013	54	1400	13" Diameter Paper Tape & Reel
GP20J-E3/73	1.013	73	1000	Ammo Pack Packaging

**RATINGS AND CHARACTERISTICS CURVES**

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

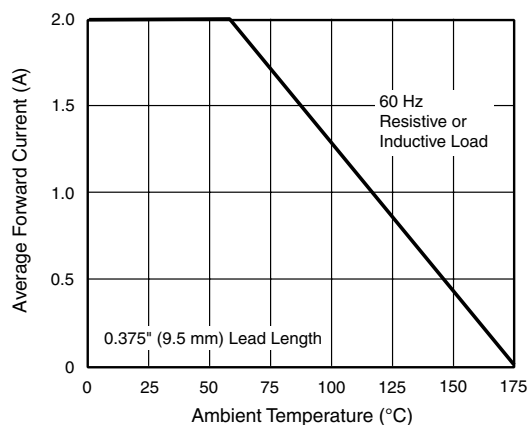


Figure 1. Forward Current Derating Curve

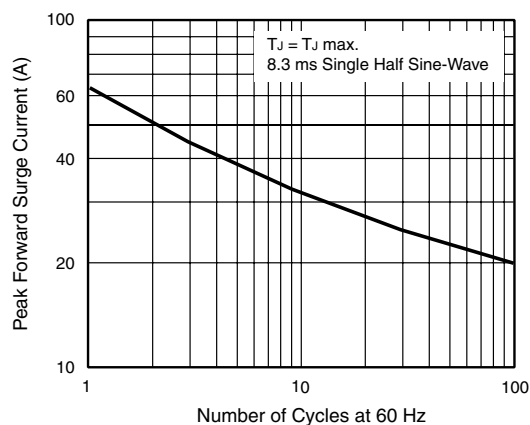


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

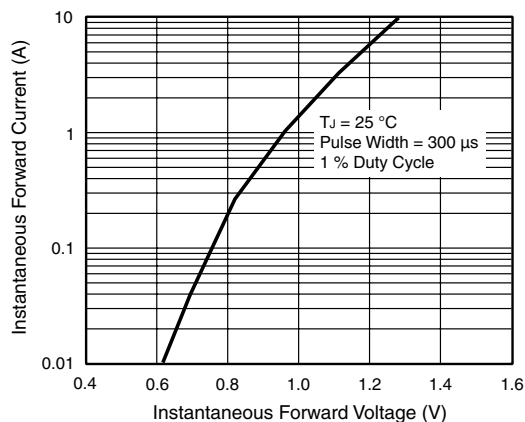


Figure 3. Typical Instantaneous Forward Characteristics

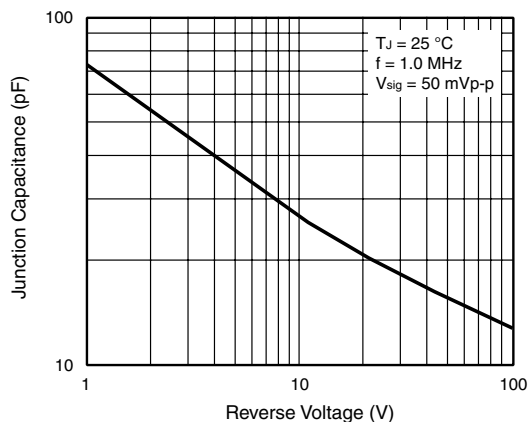


Figure 5. Typical Junction Capacitance

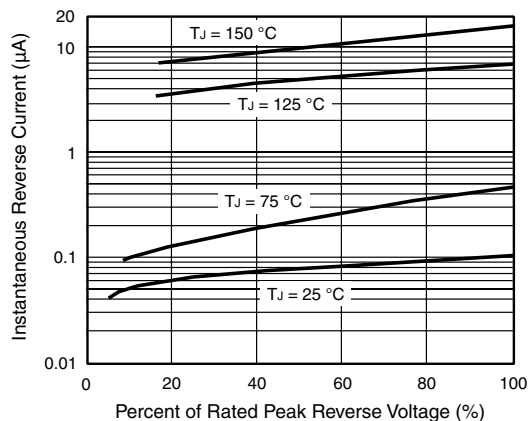


Figure 4. Typical Reverse Characteristics

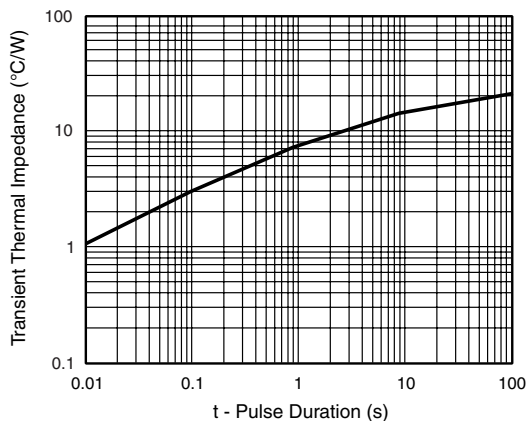
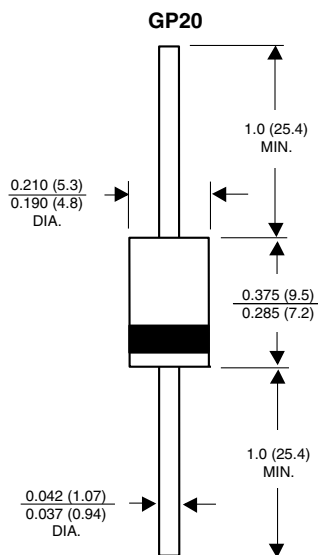


Figure 6. Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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