

# High Efficiency Rectifiers 2.0 A Glass Passivated



## EGP20A - EGP20K

### Features

- Glass–Passivated Cavity–Free Junction
- High Surge Current Capability
- Low Leakage Current
- Super–Fast Recovery Time for High Efficiency
- Low Forward Voltage, High Current Capability

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AXIAL LEAD DO 204  
CASE 017AJ

### MARKING DIAGRAM



EGP20K = Specific Device Code  
\$Y = ON Semiconductor Logo  
&Z = Assembly Code  
&3 = Date Code

### ABSOLUTE MAXIMUM RATINGS $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$I_{F(AV)}$	Average Rectified Current 0.375 inch lead length at $T_A = 55^\circ\text{C}$	2.0	A
$I_{FSM}$	Peak Forward Surge Current 8.3 ms single half-sine-wave Superimposed on rated load (JEDEC method)	75	A
$T_J, T_{STG}$	Junction and Storage Temperature Range	-65 to 150	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### THERMAL CHARACTERISTICS

Symbol	Parameter	Value	Units
$P_D$	Total Device Dissipation	3.13	W
	Derate above $25^\circ\text{C}$	25	$\text{mW}/^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	40	$^\circ\text{C}/\text{W}$
$R_{\theta JL}$	Thermal Resistance, Junction to Lead	15	$^\circ\text{C}/\text{W}$

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

Parameter		Device							Units	
		20A	20B	20C	20D	20F	20G	20J		20K
Peak Repetitive Reverse Voltage		50	100	150	200	300	400	600	800	V
Maximum RMS Voltage		35	70	105	140	210	280	420	560	V
DC Reverse Voltage (Rated V <sub>R</sub> )		50	100	150	200	300	400	600	800	V
Maximum Reverse Current at Rated V <sub>R</sub>	T <sub>A</sub> = 25°C	5.0							μA	
	T <sub>A</sub> = 125°C	100							μA	
Maximum Reverse Recovery Time I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A		50					75		nS	
Maximum Forward Voltage @ 2.0 A		0.95			1.25		1.7		V	
Typical Junction Capacitance V <sub>R</sub> = 4.0 V, f = 1.0 MHz		70			45				pF	

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

\*Pulse Test: Pulse Width  $\leq 300\text{ }\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

# EGP20A – EGP20K

## TYPICAL PERFORMANCE CHARACTERISTICS

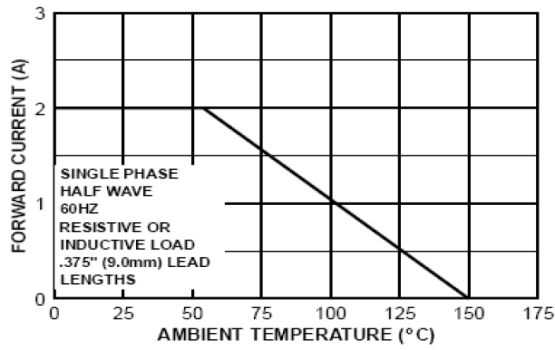


Figure 1. Forward Current Derating Curve

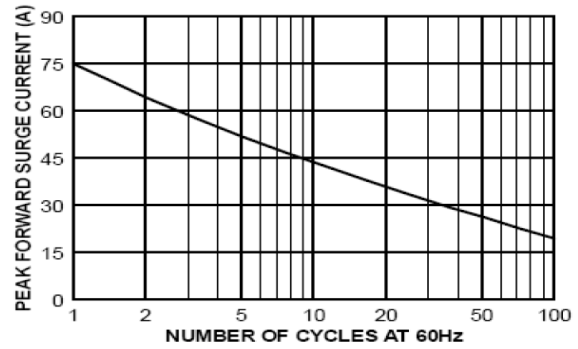


Figure 2. Non-Repetitive Surge Current

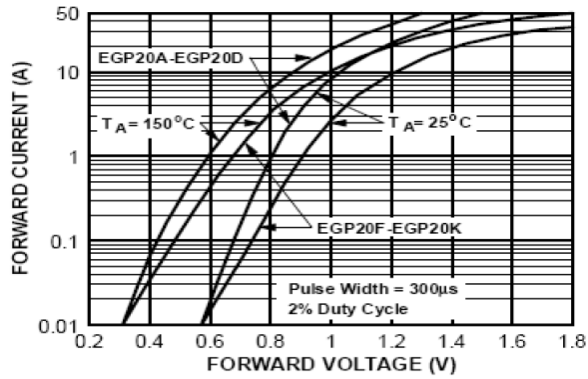


Figure 3. Forward Characteristics

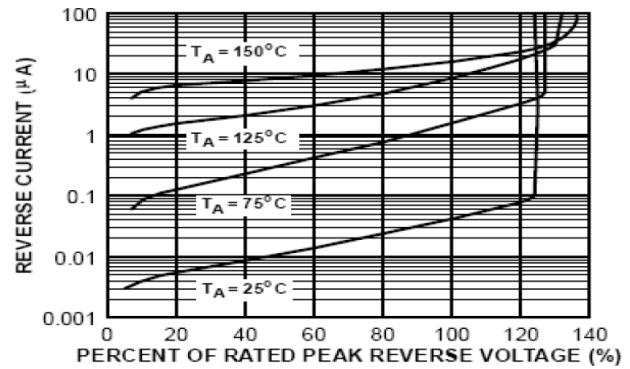


Figure 4. Reverse Characteristics

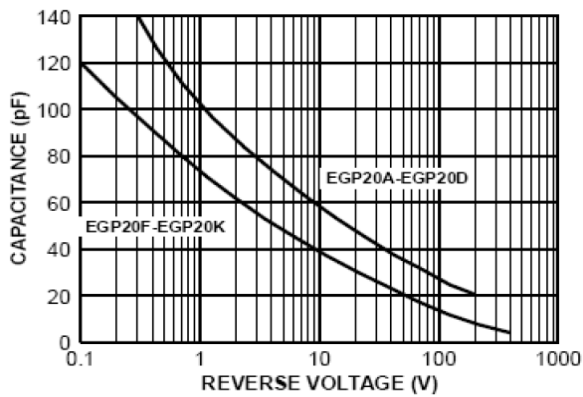
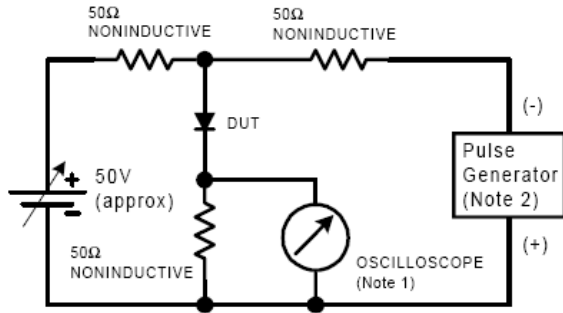


Figure 5. Junction Capacitance

## EGP20A – EGP20K

### Reverse Recovery Time Characteristic and Test Circuit Diagram



NOTES:

1. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.
2. Rise time = 10 ns max; Source impedance = 50 ohms.

Figure 6.

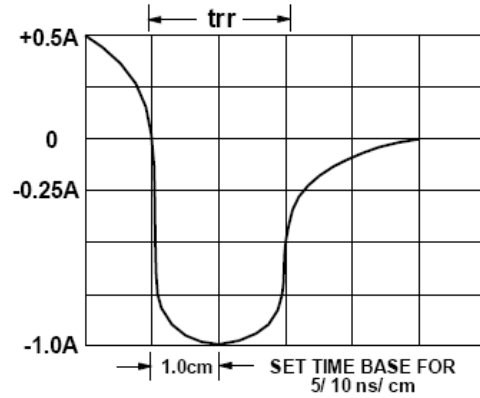


Figure 7.

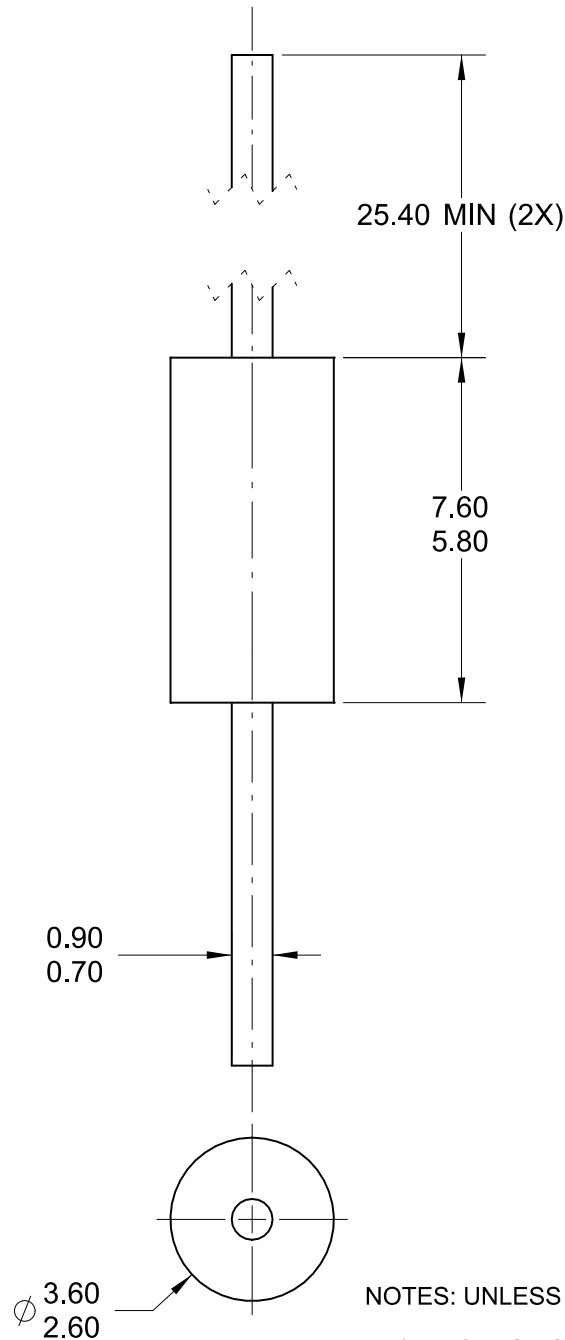
### ORDERING INFORMATION

Device	Package	Shipping
EGP20K	Axial Lead / DO-204 CASE 017AJ	4000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

**AXIAL LEAD DO 204**  
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ISSUE O


DATE 30 NOV 2016



NOTES: UNLESS OTHERWISE SPECIFIED

- A) PACKAGE STANDARD REFERENCE:  
JEDEC DO-204 VARIATION AC.
- B) PLASTIC PACKAGE BODY.
- D) ALL DIMENSIONS ARE IN MILLIMETERS.

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