

# EGP20A - EGP20K

## 2.0 A Glass-Passivated High-Efficiency Rectifiers

### 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



**DO-15 Glass case**  
COLOR BAND DENOTES CATHODE

### Absolute Maximum Ratings<sup>(1)</sup>

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Units
$I_{F(AV)}$	Average Rectified Current .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	$^\circ\text{C}$

**Note:**

1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### Thermal Characteristics

$P_D$	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	$^\circ\text{C/W}$
$R_{\theta JL}$	Thermal Resistance, Junction to Lead	15	$^\circ\text{C/W}$

**Electrical Characteristics<sup>(2)</sup>** $T_A = 25^\circ\text{C}$  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 $V_R$ )	50	100	150	200	300	400	600	800	V
Maximum Reverse Current at Rated $V_R$	$T_A = 25^\circ\text{C}$		5.0						$\mu\text{A}$
	$T_A = 125^\circ\text{C}$		100						$\mu\text{A}$
Maximum Reverse-Recovery Time $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	50						75		ns
Maximum Forward Voltage at 2.0 A	0.95				1.25		1.70		V
Typical Junction Capacitance $V_R = 4.0\text{ V}$ , $f = 1.0\text{ MHz}$	70				45				pF

**Note:**2. Pulse test: pulse width  $\leq 300\ \mu\text{s}$ , duty cycle  $\leq 2\%$ .

## Typical Performance Characteristics

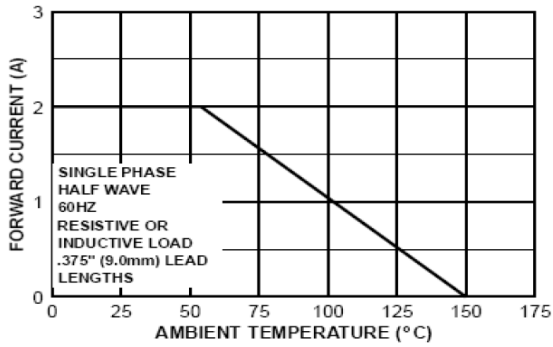


Figure 1. Forward Current Derating Curve

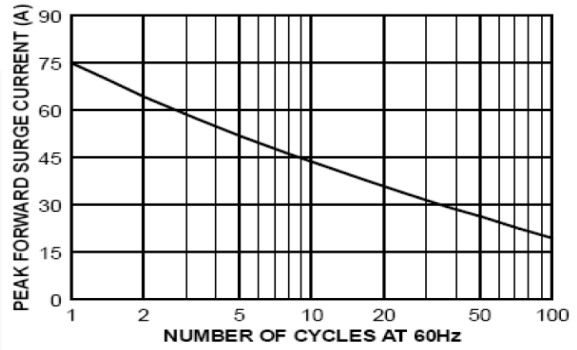


Figure 2. Non-Repetitive Surge Current

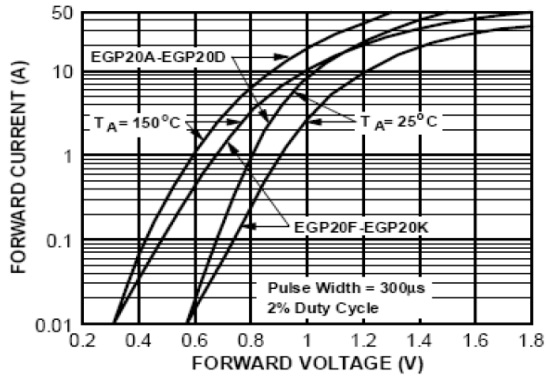


Figure 3. Forward Characteristics

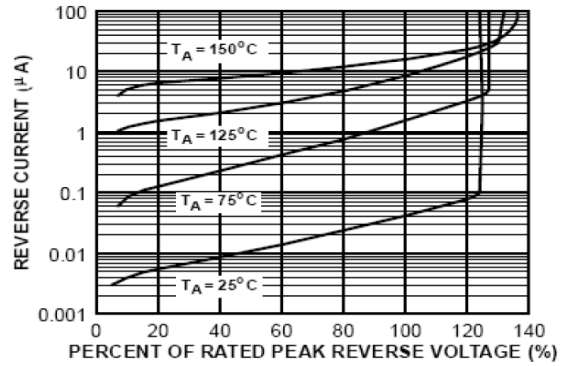


Figure 4. Reverse Characteristics

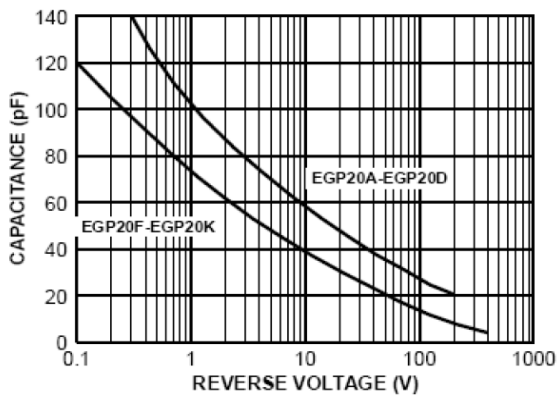
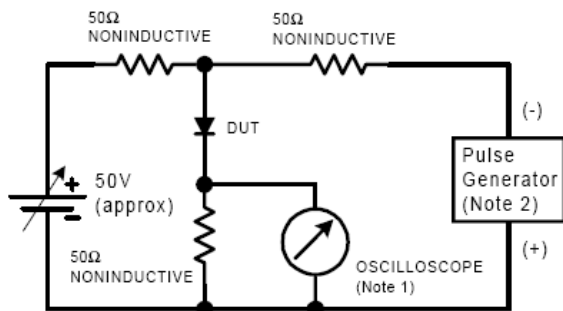
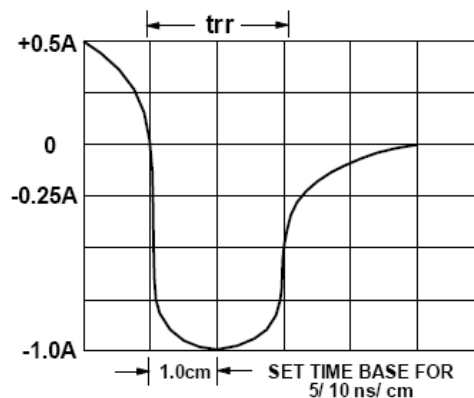


Figure 5. Junction Capacitance

### Reverse Recovery Time Characteristic and Test Circuit Diagram

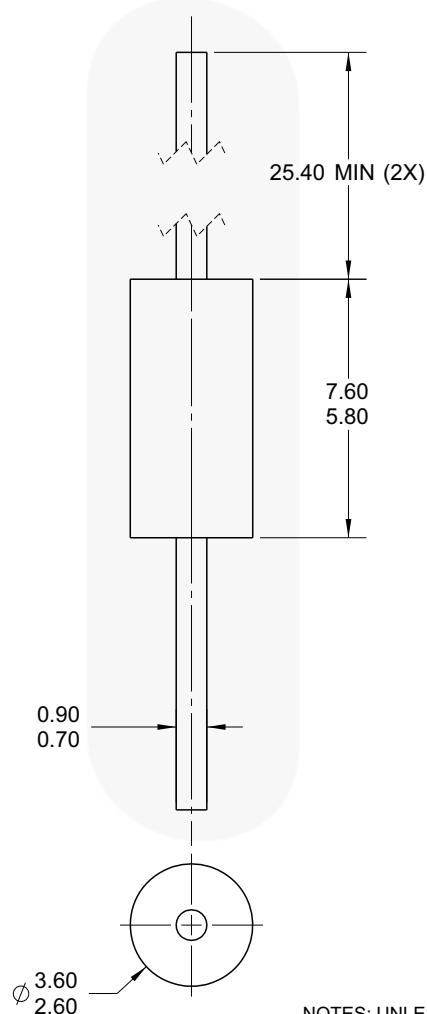


- NOTES:
3. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.
  4. Rise time = 10 ns max; Source impedance = 50 ohms.



## Physical Dimensions

## DO-15



NOTES: UNLESS OTHERWISE SPECIFIED

- A) PACKAGE STANDARD REFERENCE:  
JEDEC DO-204 VARIATION AC.
- B) PLASTIC PACKAGE BODY.
- D) ALL DIMENSIONS ARE IN MILLIMETERS.
- E) DRAWING FILE NAME: DO15AREV1

**Figure 6. AXIAL LEADED, JEDEC DO204, VARIATION (ACTIVE)**

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| BitSiC™   | Global Power Resource <sup>SM</sup>            | Programmable Active Droop™  | TinyBuck™   |
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| FAST®   | OptoHiT™                                       | SupreMOS®   | VoltagePlus™  |
| FastvCore™  | OPTOLOGIC®                                     | SyncFET™  | XS™   |
| FETBench™   | OPTOPLANAR®                                    |   |   |

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