

# 3.0 Ampere Glass Passivated High Efficiency Rectifiers

## EGP30A, EGP30B, EGP30C, EGP30D, EGP30F, EGP30G, EGP30J, EGP30K

### Features

- Glass Passivated Cavity-free Junction
- High Surge Current Capability
- Low Leakage Current
- Superfast Recovery Time for High Efficiency
- Low Forward Voltage, High Current Capability
- These Devices are Pb-Free, Halide Free and are RoHS Compliant

### ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub> = 25°C unless otherwise noted)

| Symbol                            | Parameter                                                                                               | Value      | Unit       |
|-----------------------------------|---------------------------------------------------------------------------------------------------------|------------|------------|
| I <sub>O</sub>                    | Average Rectified Current<br>.375" Lead Length @ T <sub>L</sub> = 55°C                                  | 3.0        | A          |
| I <sub>F(surge)</sub>             | Peak Forward Surge Current<br>8.3 ms Single Half-sine-wave<br>Superimposed on Rated Load (JEDEC Method) | 125        | A          |
| P <sub>D</sub>                    | Total Device Dissipation<br>Derate Above 25°C                                                           | 6.25<br>50 | W<br>mW/°C |
| R <sub>θJA</sub>                  | Thermal Resistance, Junction to Ambient                                                                 | 20         | °C/W       |
| R <sub>θJL</sub>                  | Thermal Resistance, Junction to Lead                                                                    | 8.5        | °C/W       |
| T <sub>J</sub> , T <sub>STG</sub> | Junction and Storage Temperature Range                                                                  | -65~150    | °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.



COLOR BAND DENOTES CATHODE

AXIAL LEAD  
(DO-201AD Glass Case)  
CASE 017AF

### MARKING DIAGRAM

EGP30x  
\$Y&Z&3

EGP30x = Specific Device Code (x = A, B, C, D, F, G, J, K)

\$Y = Logo

&Z = Assembly Plant Code

&3 = 3-Digit Date Code

### ORDERING INFORMATION

| Device | Package                                                             | Shipping <sup>†</sup> |
|--------|---------------------------------------------------------------------|-----------------------|
| EGP30A | AXIAL LEAD<br>(DO-201AD<br>Glass Case)<br>(Pb-Free,<br>Halide Free) | 1250 / Tape &<br>Reel |
| EGP30B |                                                                     |                       |
| EGP30C |                                                                     |                       |
| EGP30D |                                                                     |                       |
| EGP30F |                                                                     |                       |
| EGP30G |                                                                     |                       |
| EGP30J |                                                                     |                       |
| EGP30K |                                                                     |                       |

<sup>†</sup>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](http://BRD8011/D).

# EGP30A, EGP30B, EGP30C, EGP30D, EGP30F, EGP30G, EGP30J, EGP30K

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

| Parameter                                                                                                 | Device     |     |     |     |      |     |     |     | Unit     |
|-----------------------------------------------------------------------------------------------------------|------------|-----|-----|-----|------|-----|-----|-----|----------|
|                                                                                                           | 30A        | 30B | 30C | 30D | 30F  | 30G | 30J | 30K |          |
| 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 @ Rated V <sub>R</sub><br>T <sub>A</sub> = 25°C<br>T <sub>A</sub> = 125°C         | 5.0<br>100 |     |     |     |      |     |     |     | μA<br>μA |
| Maximum Reverse Recovery Time<br>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 @ 3.0 A                                                                           | 0.95       |     |     |     | 1.25 |     | 1.7 |     | V        |
| Typical Junction Capacitance V <sub>R</sub> = 4.0 V, f = 1.0 MHz                                          | 95         |     |     |     | 75   |     |     |     | 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  $\leq 2\%$

TYPICAL CHARACTERISTICS

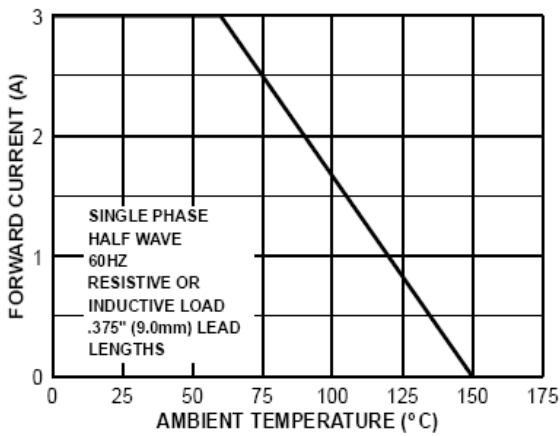


Figure 1. Forward Current Derating Curve

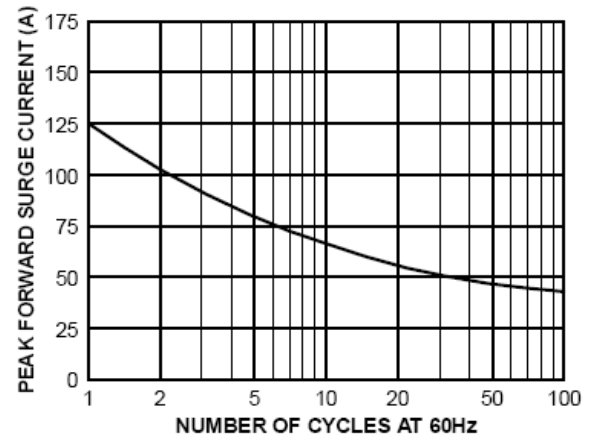


Figure 2. Non-Repetitive Surge Current

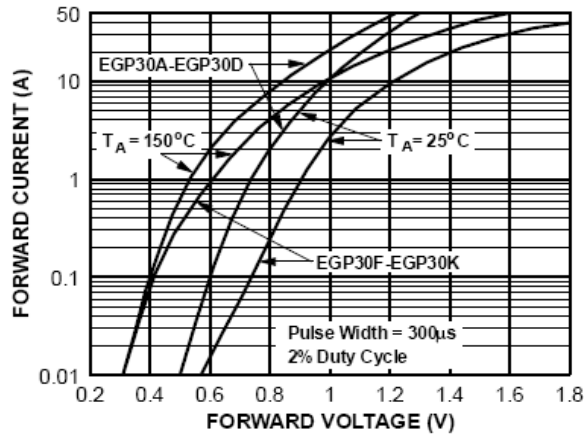


Figure 3. Forward Characteristics

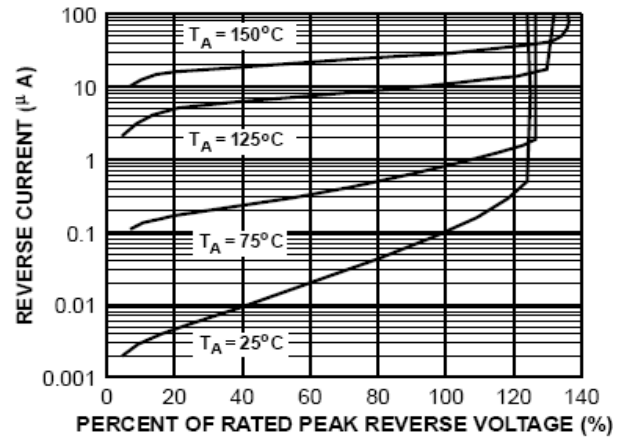


Figure 4. Reverse Characteristics

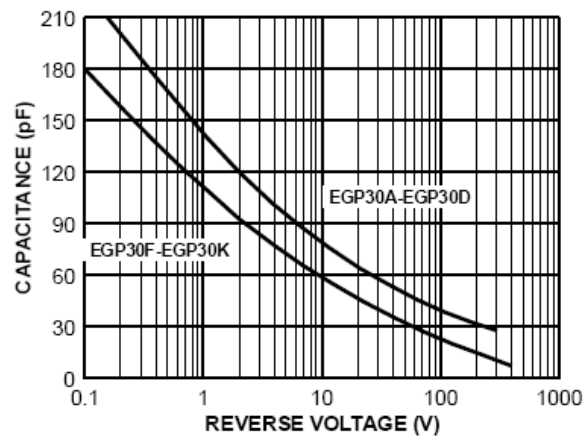
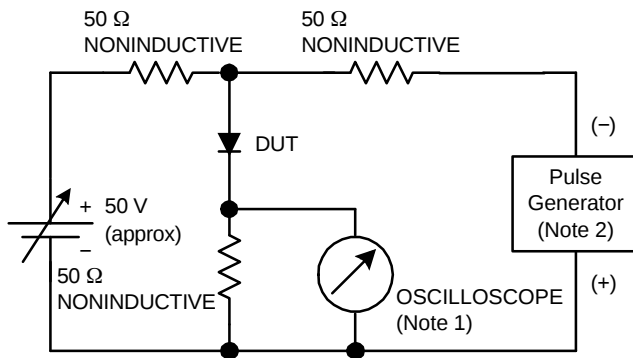


Figure 5. Junction Capacitance

REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES:

1. Rise time = 7.0 ns max; Input impedance = 1.0 MΩ 22 pF.
2. Rise time = 10 ns max; Source impedance = 50 Ω.

Figure 6. Test Circuit Diagram

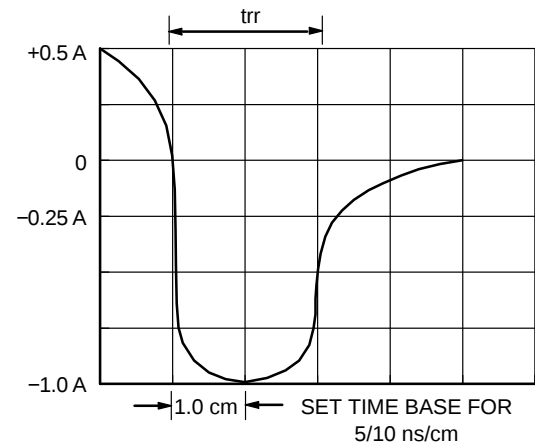
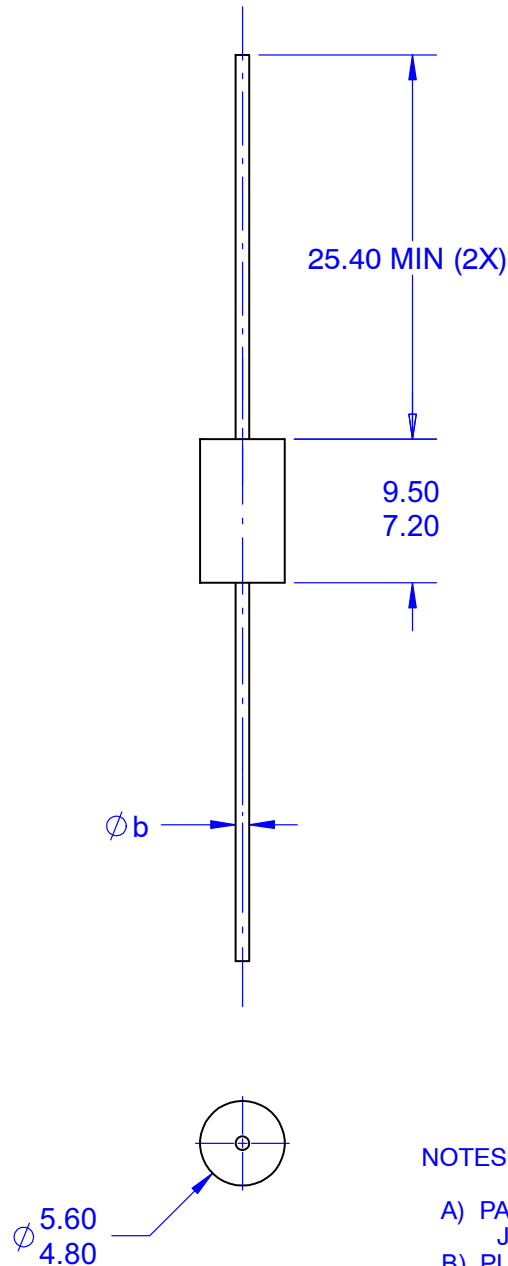


Figure 7. Reverse Recovery Time Characteristic

**AXIAL LEAD**  
**CASE 017AF**  
**ISSUE O**

DATE 31 AUG 2016



**NOTES: UNLESS OTHERWISE SPECIFIED**

- A) PACKAGE STANDARD REFERENCE:  
JEDEC DO-201 VARIATION AD.
- B) PLASTIC PACKAGE BODY.
- C) ALL DIMENSIONS ARE IN MILLIMETERS.
- D)  $\phi b$  DIMENSION REPRESENT LIKE BELOW:  
OPTION AD = 1.20MIN TO 1.30MAX  
OPTION AE = 0.94MIN TO 1.07MAX

|                         |                    |                                                                                                                                                                                     |
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