

## Surface Mount Glass Passivated Ultrafast Rectifier

### Major Ratings and Characteristics

$I_{F(AV)}$	1.0 A
$V_{RRM}$	1300 V
$I_{FSM}$	20 A
$t_{rr}$	75 ns
$E_{AS}$	15 mJ
$T_j \text{ max.}$	150 °C


*Patented\**

\* Glass-plastic encapsulation technique is covered by patent No. 3,996,602, brazed-lead assembly by Patent No. 3,930,306 and lead forming by Patent No. 5,151,846

**DO-214BA (GF1)**

### Features

- Cavity-free glass-passivated junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- Avalanche surge energy capability
- Meets environmental standard MIL-S-19500
- Meets MSL level 1, per J-STD-020C
- Solder Dip 260 °C, 40 seconds



### Mechanical Data

**Case:** DO-214BA, molded plastic 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

### Typical Applications

For use in high voltage rectification of photoflash application

### Maximum Ratings

$T_A = 25\text{ °C}$  unless otherwise specified

Parameter	Symbol	EGF1T	Unit
Device Marking Code		ET	
Maximum repetitive peak reverse voltage	$V_{RRM}$	1300	V
Maximum RMS voltage	$V_{RMS}$	910	V
Maximum DC blocking	$V_{DC}$	1300	V
Maximum average forward rectified current	$I_{F(AV)}$	1.0	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	20	A
Non-repetitive avalanche energy at $T_A = 25\text{ °C}$ , $I_{AS} = 1\text{ A}$ , $L = 30\text{ mH}$	$E_{AS}$	15	mJ
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150	°C

## Electrical Characteristics

$T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Test condition	Symbol	EGF1T	Unit
Maximum instantaneous	at 1.0 A, $T_j = 25\text{ }^\circ\text{C}$	$V_F$	3.0	V
Maximum DC reverse current	at $V_{RM}^{(1)}$ $T_j = 25\text{ }^\circ\text{C}$ $T_j = 125\text{ }^\circ\text{C}$	$I_R$	5.0 50	$\mu\text{A}$
Typical reverse recovery time	at $I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$	75	ns
Typical junction capacitance	at 4.0 V, 1 MHz	$C_J$	8.0	pF

Notes:

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

## Thermal Characteristics

$T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	EGF1T	Unit
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$ $R_{\theta JL}$	50 20	$^\circ\text{C/W}$

Notes:

(1) Thermal resistance from junction to ambient and from junction to lead, P.C.B. mounted on 0.95 x 0.95" (24 x 24 mm) copper pad areas

## Ratings and Characteristics Curves

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

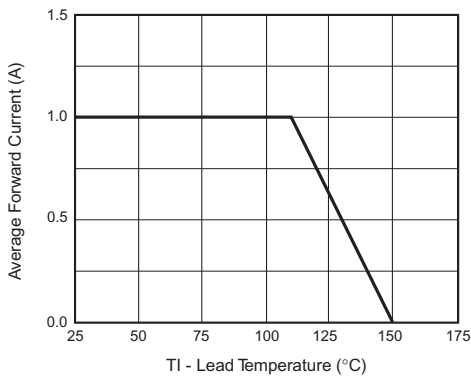


Figure 1. Maximum Forward Current Derating Curve

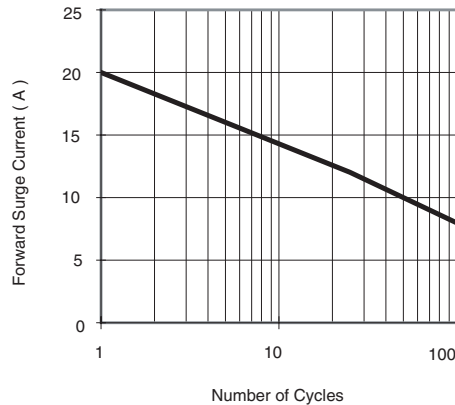


Figure 2. Maximum Non-Repetitive Forward Surge Current

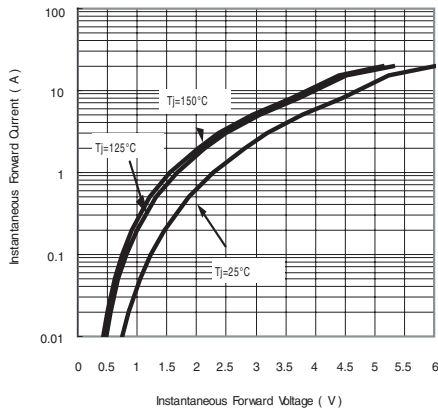


Figure 3. Typical Instantaneous Forward Characteristics

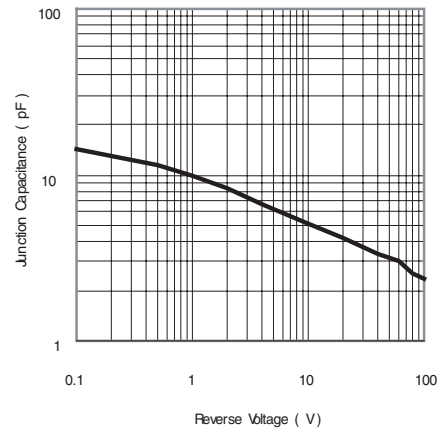


Figure 5. Typical Junction Capacitance Per Leg

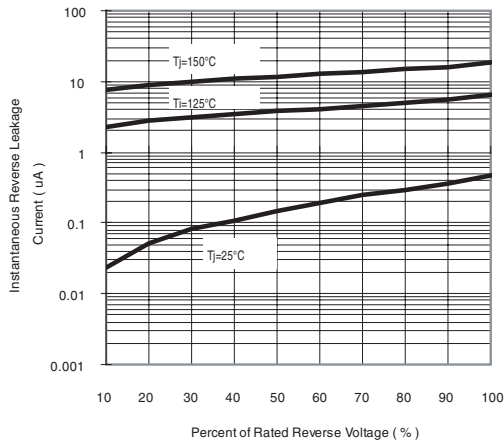


Figure 4. Typical Reverse Leakage Characteristics

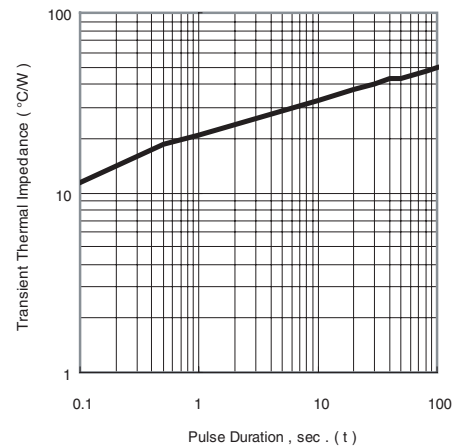
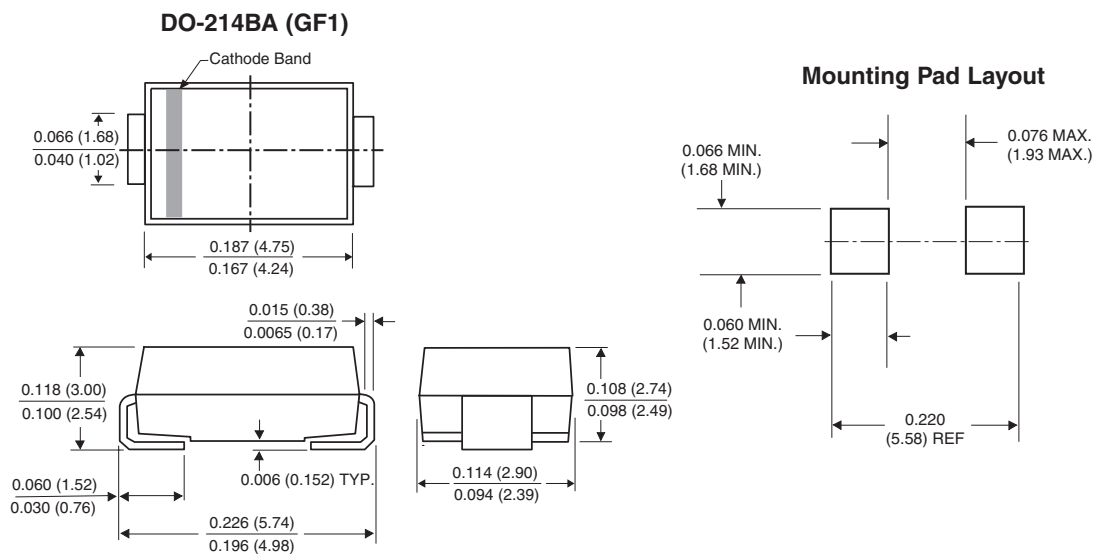


Figure 6. Typical Transient Thermal Impedance

## Package outline dimensions in inches (millimeters)





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