

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	μA
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 μs pulse width, 1 % duty cycle

Thermal Characteristics

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

Parameter	Symbol	EGF1T	Unit
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$ $R_{\theta JL}$	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)

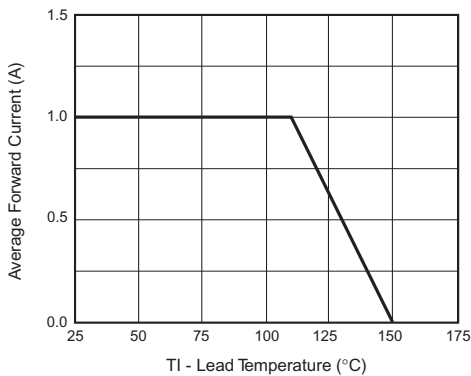


Figure 1. Maximum Forward Current Derating Curve

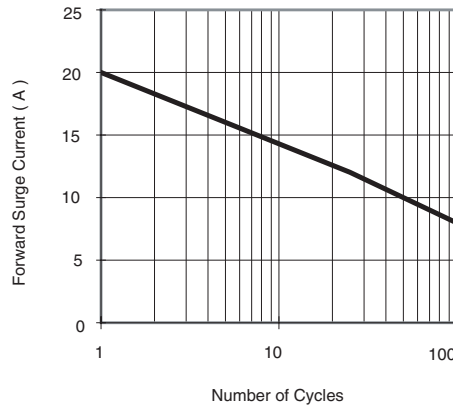


Figure 2. Maximum Non-Repetitive Forward Surge Current

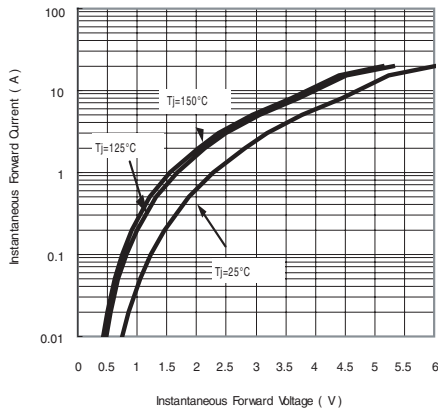


Figure 3. Typical Instantaneous Forward Characteristics

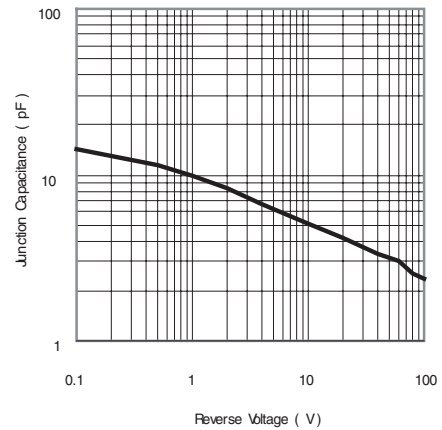


Figure 5. Typical Junction Capacitance Per Leg

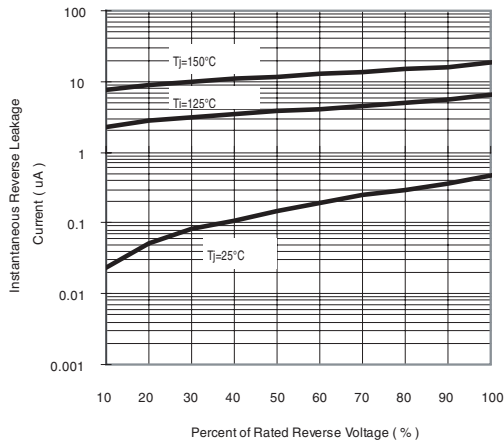


Figure 4. Typical Reverse Leakage Characteristics

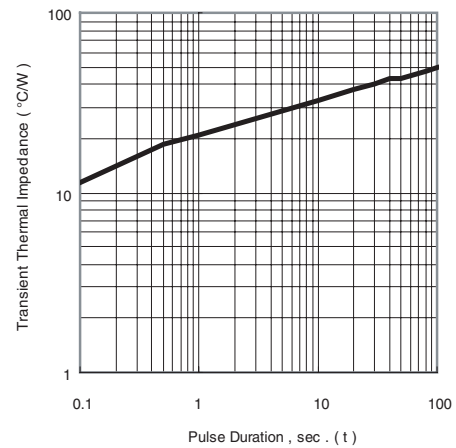
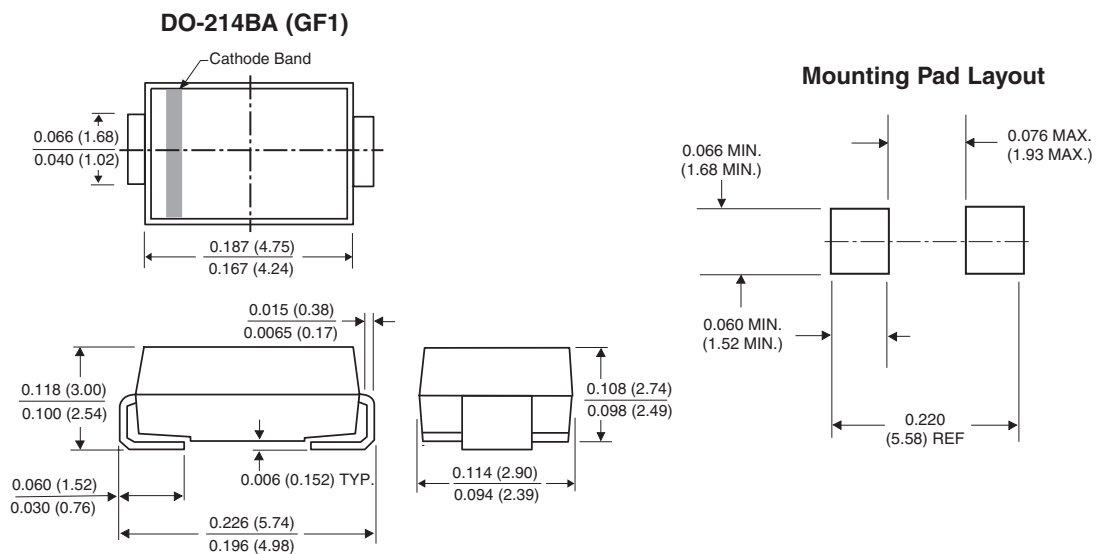


Figure 6. Typical Transient Thermal Impedance

Package outline dimensions in inches (millimeters)





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