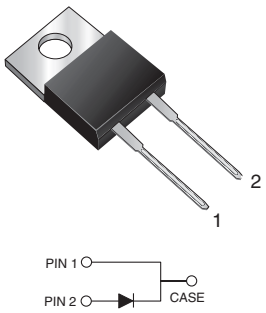
Ultrafast Plastic Rectifier

TO-220AC



FEATURES

- Power pack
- Glass passivated pellet chip junction
- Ultrafast recovery time
- Low switching losses, high efficiency
- Low leakage current
- High forward surge capability
- Solder dip 275 °C max., 10 s per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, inverters, freewheeling diodes, DC/DC converters, and other power switching application.

MECHANICAL DATA

Case: TO-220AC

Molding compound meets UL 94V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD22-B102
E3 suffix meets JESD 201 class 1A whisker test

Polarity: as marked

Mounting Torque: 10 in-lbs max.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	8.0 A
V_{RRM}	50 V, 100 V, 150 V, 200 V
I_{FSM}	125 A
t_{rr}	35 ns
V_F at I_F	0.895 V
T_J max.	150 °C
Package	TO-220AC
Diode variation	Single

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	GI1401	GI1402	GI1403	GI1404	UNIT
Max. repetitive peak reverse voltage	V_{RRM}	50	100	150	200	V
Max. RMS voltage	V_{RMS}	35	70	105	140	V
Max. DC blocking voltage	V_{DC}	50	100	150	200	V
Max. average forward rectified current at T_C = 125 °C	$I_{F(AV)}$	8.0				A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	125				A
Operating and storage temperature range	T_J, T_{STG}	-65 to +150				°C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	GI1401	GI1402	GI1403	GI1404	UNIT
Max. instantaneous forward voltage	I_F = 4 A	T_J = 25 °C	V_F	0.900				V
	I_F = 8 A	T_J = 25 °C		0.975				
	I_F = 4 A	T_J = 100 °C		0.800				
	I_F = 8 A	T_J = 100 °C		0.895				
Max. DC reverse current at rated DC blocking voltage		T_C = 25 °C	I_R	5.0				μA
		T_C = 100 °C		150				
Max. reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	35				ns
Typical junction capacitance	4.0 V, 1 MHz		C_J	85				pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	GI1401	GI1402	GI1403	GI1404	UNIT
Typical thermal resistance (1)(2)	$R_{\theta JA}$	15				°C/W
	$R_{\theta JC}$	2.2				

Notes

(1) Thermal resistance from junction to ambient in free air, no heatsink

(2) Thermal resistance from junction to case and ambient mounted on heatsink

ORDERING INFORMATION (Example)					
PACKAGE	PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
TO-220AC	GI1401-E3/45	1.80	45	50/tube	Tube

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

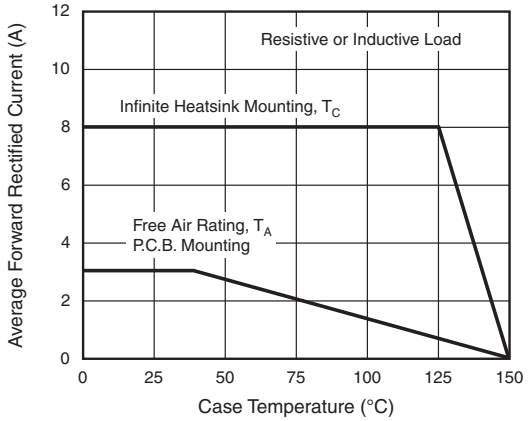


Fig. 1 - Max. Forward Current Derating Curve

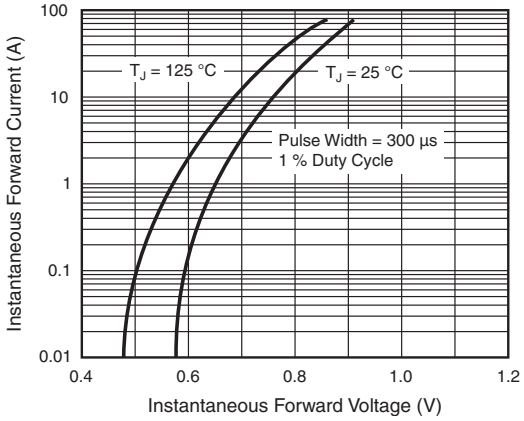


Fig. 3 - Typical Instantaneous Forward Characteristics

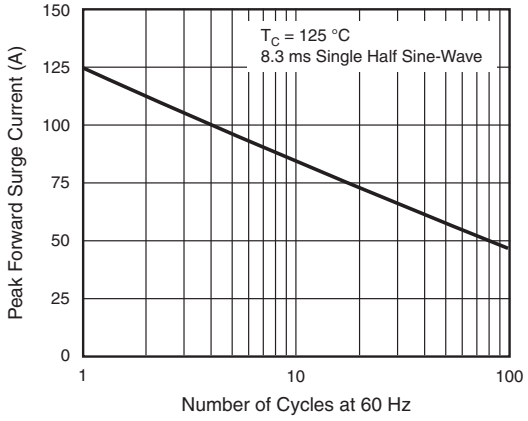


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

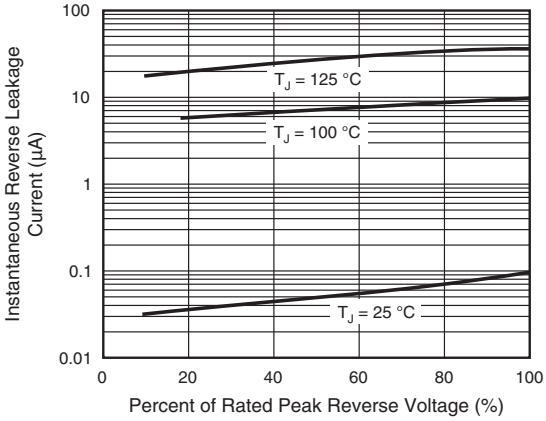


Fig. 4 - Typical Reverse Leakage Characteristics

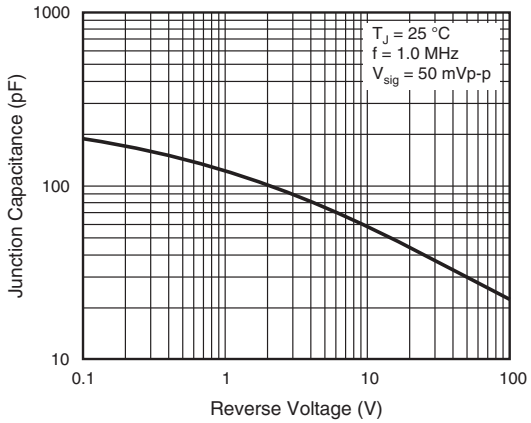
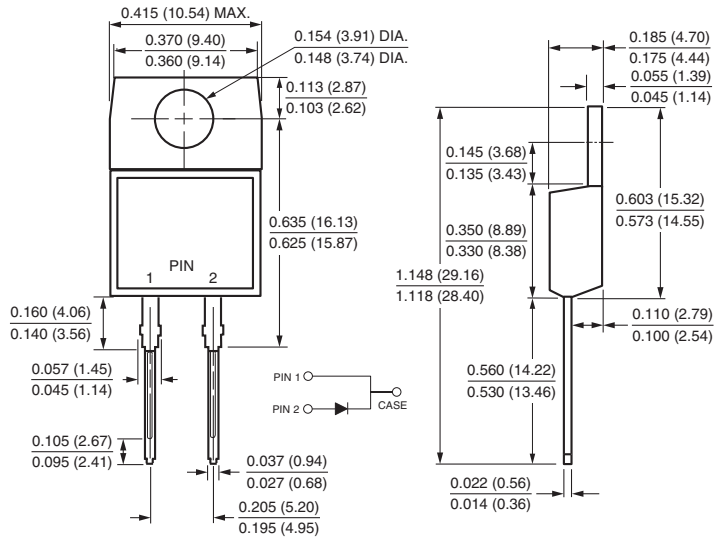


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AC



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