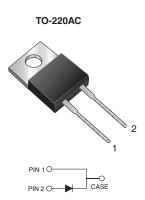


GI1401, GI1402, GI1403, GI1404

Vishay General Semiconductor

Ultrafast Plastic Rectifier



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					

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 <u>www.vishay.com/doc?99912</u>

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.

MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ 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					
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	125					
Operating and storage temperature range	T _J , T _{STG}	-65 to +150					

ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)									
PARAMETER	TEST CO	NDITIONS	SYMBOL	GI1401	GI1402	GI1403	GI1404	UNIT	
Max. instantaneous forward voltage	$I_F = 4 A$	T _J = 25 °C		0.900					
	I _F = 8 A	T _J = 25 °C	V _F	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	5.0						
		T _C = 100 °C	I _R	150				μA	
Max. reverse recovery time	I _F = 0.5 A, I _R = I _{rr} = 0.25 A	= 1.0 A, t _{rr}		35				ns	
Typical junction capacitance	4.0 V, 1 MHz	4.0 V, 1 MHz		C _J 85			pF		

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THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	SYMBOL	GI1401	GI1402	GI1403	GI1404	UNIT	
Typical thermal resistance ⁽¹⁾⁽²⁾	$R_{\theta JA}$			°C/W			
	$R_{\theta JC}$	2.2			0/10		

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)

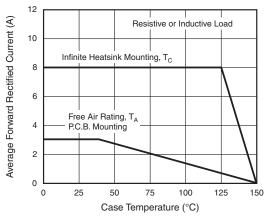


Fig. 1 - Max. Forward Current Derating Curve

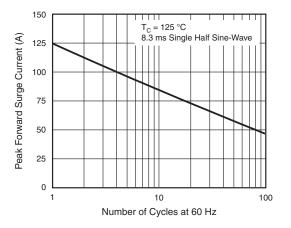


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

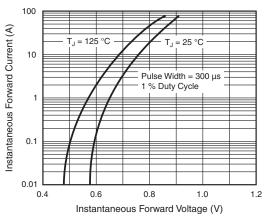


Fig. 3 - Typical Instantaneous Forward Characteristics

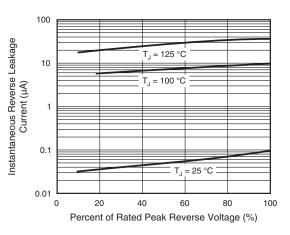


Fig. 4 - Typical Reverse Leakage Characteristics

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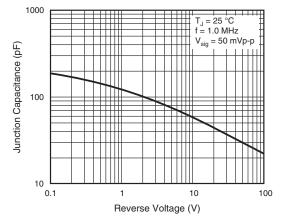
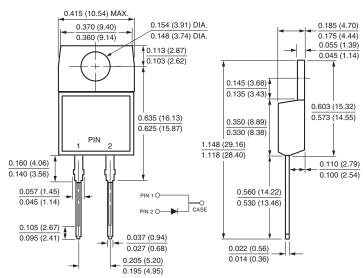


Fig. 5 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



TO-220AC



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