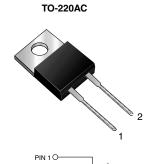
ROHS



Vishay General Semiconductor

Ultrafast Plastic Rectifier



PIN 2 O-

PRIMARY CHARACTERISTICS						
I _{F(AV)}	8.0 A					
V_{RRM}	50 V to 200 V					
I _{FSM}	125 A					
t _{rr}	35 ns					
V _F	0.895 V					
T _J max.	150 °C					

FEATURES





· Low switching losses, high efficiency

· Low leakage current

High forward surge capability

• Solder dip 260 °C, 40 s

 Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: TO-220AC

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2

whisker test

Polarity: As marked

Mounting Torque: 10 in-lbs maximum

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	GI1401	GI1402	GI1403	GI1404	UNIT	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	V	
Maximum RMS voltage	V _{RMS}	35	70	105	140	V	
Maximum DC blocking voltage	V_{DC}	50	100	150	200	V	
Maximum 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					

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	TEST CONDITIONS SYMBOL			GI1401	GI1402	GI1403	GI1404	UNIT	
Maximum instantaneous forward voltage	I _F = 4 A I _F = 8 A I _F = 4 A I _F = 8 A	$T_J = 25 ^{\circ}\text{C}$ $T_J = 25 ^{\circ}\text{C}$ $T_J = 100 ^{\circ}\text{C}$ $T_J = 100 ^{\circ}\text{C}$	V _F	0.900 0.975 0.800 0.895				٧	
Maximum DC reverse current at rated DC blocking voltage		T _C = 25 °C T _C = 100 °C	I _R	5.0 150				μΑ	
Maximum 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		CJ	85				pF	

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

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	45 50/tube				
TO-220AC	GI1401HE3/45 ⁽¹⁾	1.80	45	50/tube	Tube			

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

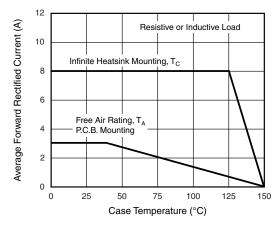


Figure 1. Maximum Forward Current Derating Curve

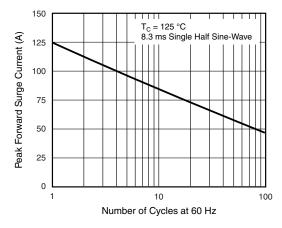


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current



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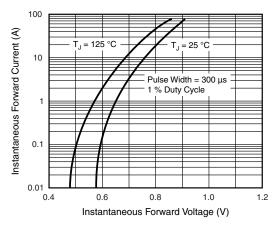


Figure 3. Typical Instantaneous Forward Characteristics

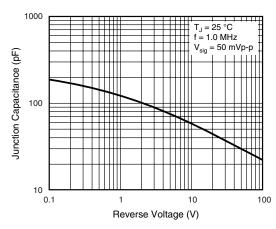


Figure 5. Typical Junction Capacitance

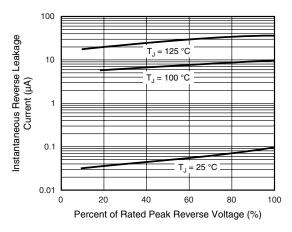
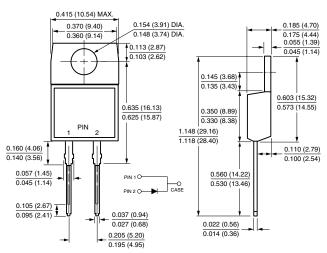


Figure 4. Typical Reverse Leakage Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

TO-220AC





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