

## 6A, 50V - 1000V Standard Rectifier

### FEATURES

- AEC-Q101 qualified available
- Glass passivated chip junction
- High current capability, Low  $V_F$
- High reliability
- High surge current capability
- Low power loss
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- General purpose

### MECHANICAL DATA

- Case: R-6
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 1.65g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	6	A
$V_{RRM}$	50 - 1000	V
$I_{FSM}$	250	A
$T_{JMAX}$	150	°C
Package	R-6	
Configuration	Single die	



R-6



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	6A 05G	6A 10G	6A 20G	6A 40G	6A 60G	6A 80G	6A 100G	UNIT
Marking code on the device		6A 05G	6A 10G	6A 20G	6A 40G	6A 60G	6A 80G	6A 100G	
Repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Forward current	$I_F$	6							A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	250							A
Junction temperature	$T_J$	-55 to +150							°C
Storage temperature	$T_{STG}$	-55 to +150							°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-ambient thermal resistance	$R_{\theta JA}$	35	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)						
<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>	
Forward voltage <sup>(1)</sup>	$I_F = 6\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	1.1	V	
Reverse current @ rated $V_R$ <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	10	$\mu\text{A}$	
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	$C_J$	60	-	pF	

**Notes:**

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b> <sup>(1)(2)</sup>	<b>PACKAGE</b>	<b>PACKING</b>
6AxG	R-6	1,000 / Tape & Reel
6AxG A0G	R-6	700 / Ammo box
6AxGH	R-6	1,000 / Tape & Reel
6AxGHA0G	R-6	700 / Ammo box

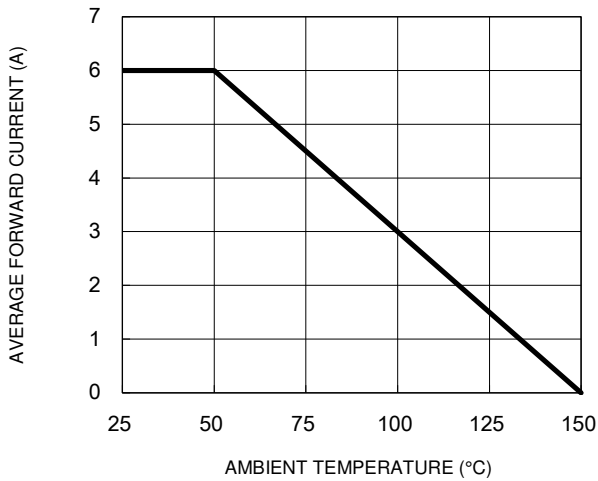
**Notes:**

1. "x" defines voltage from 50V (6A05G) to 1000V (6A100G)
2. "H" means AEC-Q101 qualified

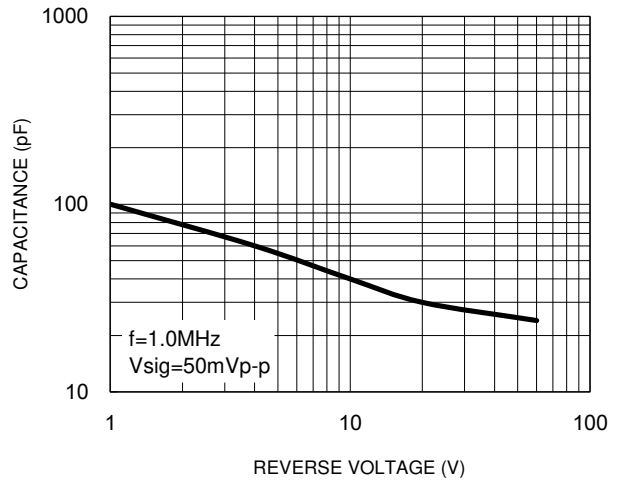
**CHARACTERISTICS CURVES**

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

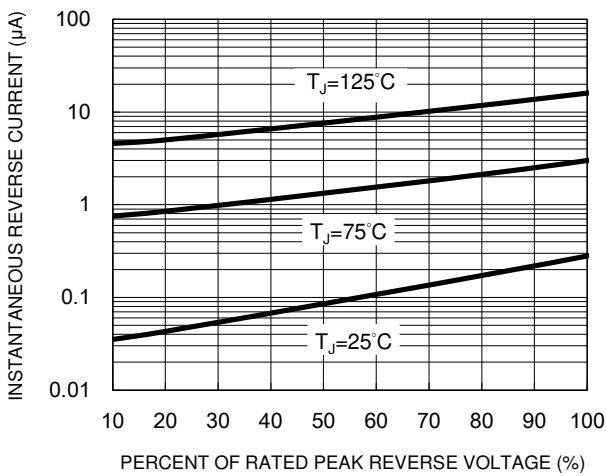
**Fig.1 Forward Current Derating Curve**



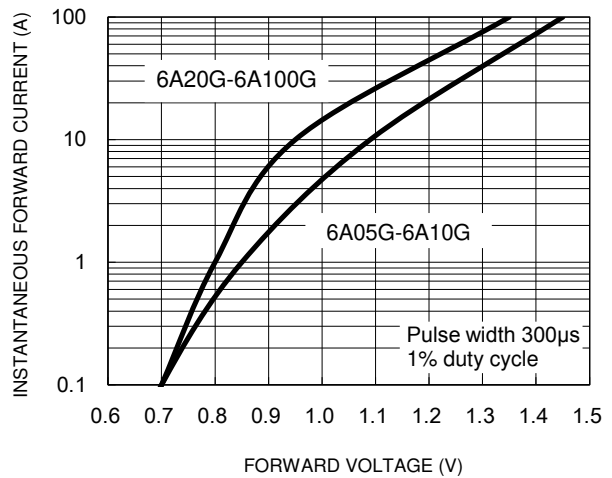
**Fig.2 Typical Junction Capacitance**



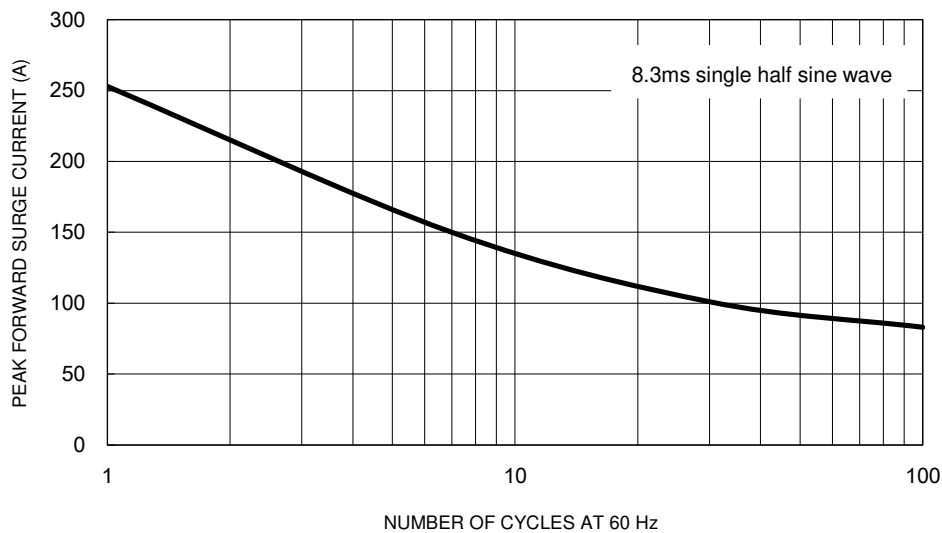
**Fig.3 Typical Reverse Characteristics**



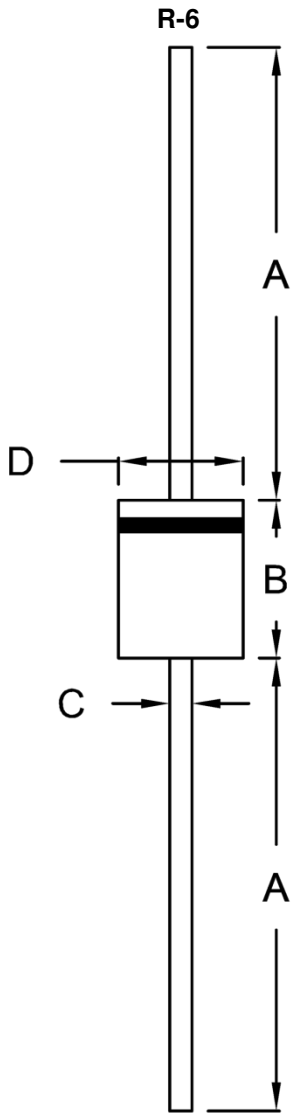
**Fig.4 Typical Forward Characteristics**



**Fig.5 Maximum Non-Repetitive Forward Surge Current**



**PACKAGE OUTLINE DIMENSIONS**



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	8.60	9.10	0.339	0.358
C	1.20	1.30	0.047	0.051
D	6.80	7.20	0.268	0.283

**MARKING DIAGRAM**



- P/N = Marking Code
- G = Green Compound
- YWW = Date Code
- F = Factory Code

## **Notice**

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies.

Purchasers are solely responsible for the choice, selection, and use of TSC products and TSC assumes no liability for application assistance or the design of Purchasers' products.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.