



# THE DATASHEET OF UG06A



## 0.6A, 50V - 200V Ultra Fast Rectifier

### FEATURES

- AEC-Q101 qualified available
- Ultrafast recovery time for high efficiency
- Excellent high temperature switching
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- DC to DC converter
- Switching mode converters and inverters
- Freewheeling application

### MECHANICAL DATA

- Case: TS-1
- 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: 0.200g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	0.6	A
$V_{RRM}$	50 - 200	V
$I_{FSM}$	40	A
$T_{JMAX}$	150	°C
Package	TS-1	
Configuration	Single die	



TS-1



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER	SYMBOL	UG06A	UG06B	UG06C	UG06D	UNIT
Marking code on the device		UG06A	UG06B	UG06C	UG06D	
Repetitive peak reverse voltage	$V_{RRM}$	50	100	150	200	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	105	140	V
Forward current	$I_F$	0.6				A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	40				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-lead thermal resistance	$R_{\theta JL}$	28	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	97	°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>	$I_F = 0.6\text{A}$ , $T_J = 25^\circ\text{C}$	$V_F$	-	0.95	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	5	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		-	150	$\mu\text{A}$
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	$C_J$	9	-	pF
Reverse recovery time	$I_F = 0.5\text{A}$ , $I_R = 1.0\text{A}$ $I_{rr} = 0.25\text{A}$	$t_{rr}$	-	15	ns

**Notes:**

1. Pulse test with  $PW = 0.3\text{ms}$
2. Pulse test with  $PW = 30\text{ms}$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b> <sup>(1)(2)</sup>	<b>PACKAGE</b>	<b>PACKING</b>
UG06x	TS-1	5,000 / Tape & Reel
UG06x A0G	TS-1	3,000 / Ammo box
UG06xH	TS-1	5,000 / Tape & Reel
UG06xHA0G	TS-1	3,000 / Ammo box

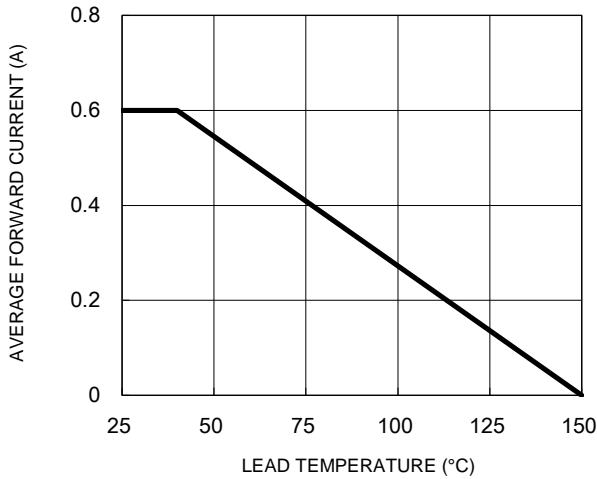
**Notes:**

1. "x" defines voltage from 50V (UG06A) to 200V (UG06D)
2. "H" means AEC-Q101 qualified

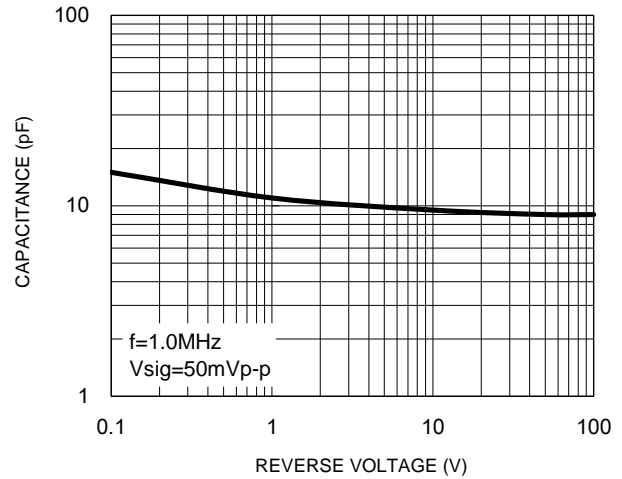
**CHARACTERISTICS CURVES**

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

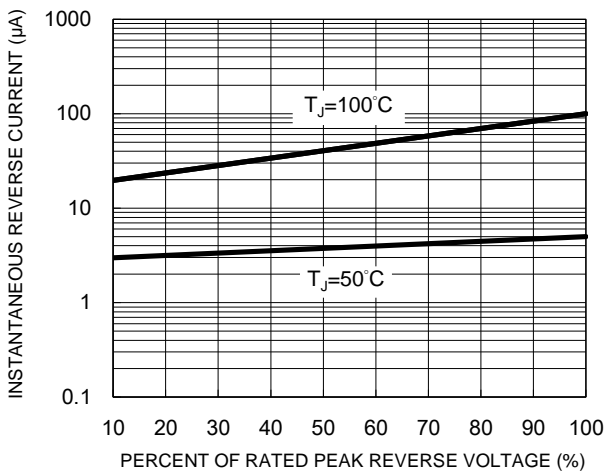
**Fig.1 Forward Current Derating Curve**



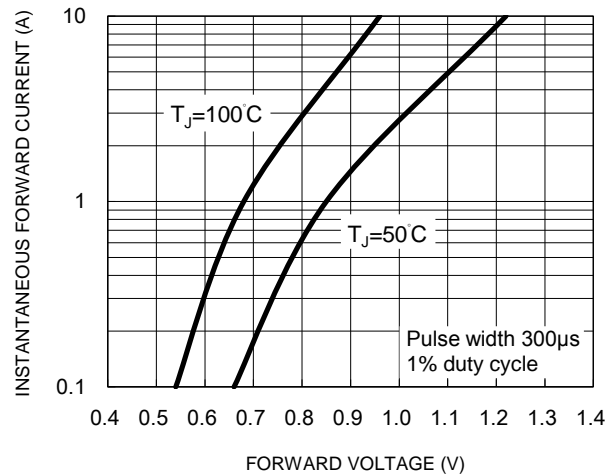
**Fig.2 Typical Junction Capacitance**



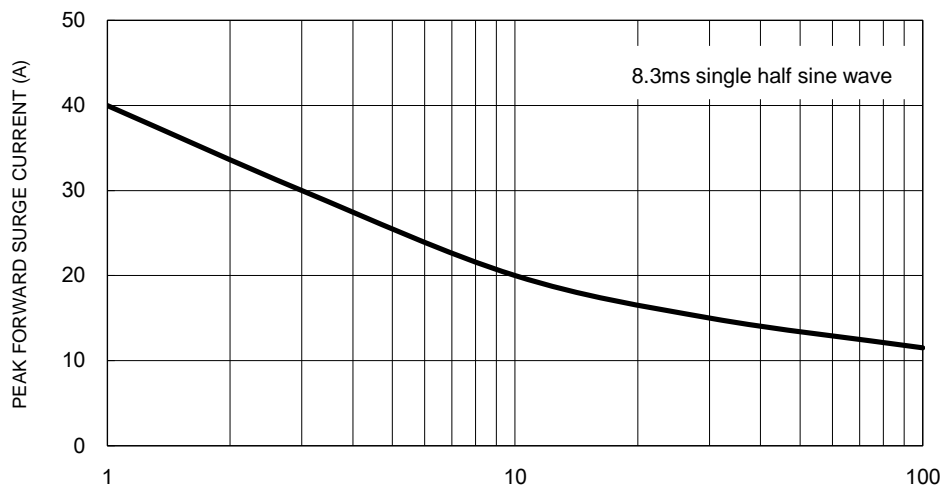
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



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



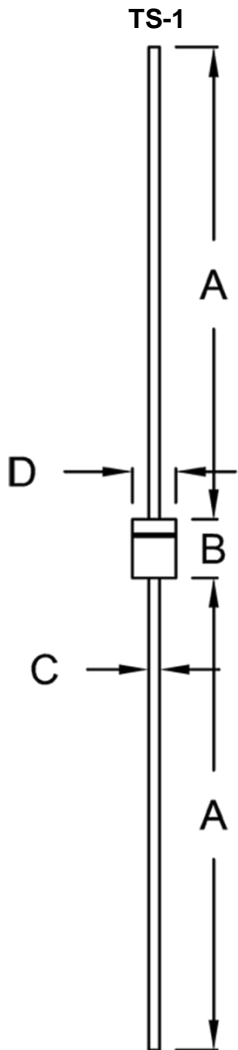
**CHARACTERISTICS CURVES**

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

**Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram**



**PACKAGE OUTLINE DIMENSIONS**



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	3.00	3.30	0.118	0.130
C	0.53	0.64	0.021	0.025
D	2.00	2.70	0.079	0.106

**MARKING DIAGRAM**



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

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