

## 1A, 50V - 1000V High Efficient Rectifier

### FEATURES

- AEC-Q101 qualified available
- Glass passivated chip junction
- High current capability
- High reliability
- High surge current capability
- High efficiency, Low  $V_F$
- 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
$I_F$	1	A
$V_{RRM}$	50 - 1000	V
$I_{FSM}$	30	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	HT 11G	HT 12G	HT 13G	HT 14G	HT 15G	HT 16G	HT 17G	HT 18G	UNIT
Marking code on the device		HT 11G	HT 12G	HT 13G	HT 14G	HT 15G	HT 16G	HT 17G	HT 18G	
Repetitive peak reverse voltage	$V_{RRM}$	50	100	200	300	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	210	280	420	560	700	V
Forward current	$I_F$	1								A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	30								A
Junction temperature	$T_J$	-55 to +150								°C
Storage temperature	$T_{STG}$	-55 to +150								°C

<b>THERMAL PERFORMANCE</b>			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	95	°C/W

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage <sup>(1)</sup>	HT11G HT12G HT13G HT14G	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	1.0	V
	HT15G			-	1.3	V
	HT16G HT17G HT18G			-	1.7	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	HT11G HT12G HT13G HT14G HT15G	1MHz, $V_R = 4.0\text{V}$	$C_J$	15	-	pF
	HT16G HT17G HT18G			10	-	pF
Reverse recovery time	HT11G HT12G HT13G HT14G HT15G	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $t_{rr} = 0.25\text{A}$	$t_{rr}$	-	50	ns
	HT16G HT17G HT18G			-	75	ns

**Notes:**

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

<b>ORDERING INFORMATION</b>		
ORDERING CODE <sup>(1)(2)</sup>	PACKAGE	PACKING
HT1xG	TS-1	5,000 / Tape & Reel
HT1xG A0G	TS-1	3,000 / Ammo box
HT1xGH	TS-1	5,000 / Tape & Reel
HT1xGHA0G	TS-1	3,000 / Ammo box

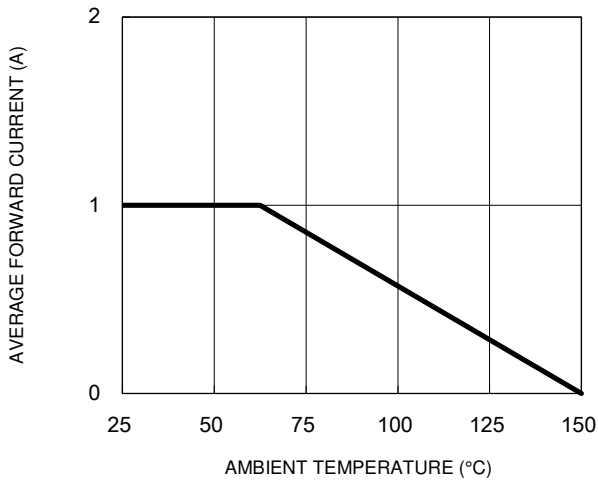
**Notes:**

1. "x" defines voltage from 50V (HT11G) to 1000V (HT18G)
2. "H" means AEC-Q101 qualified

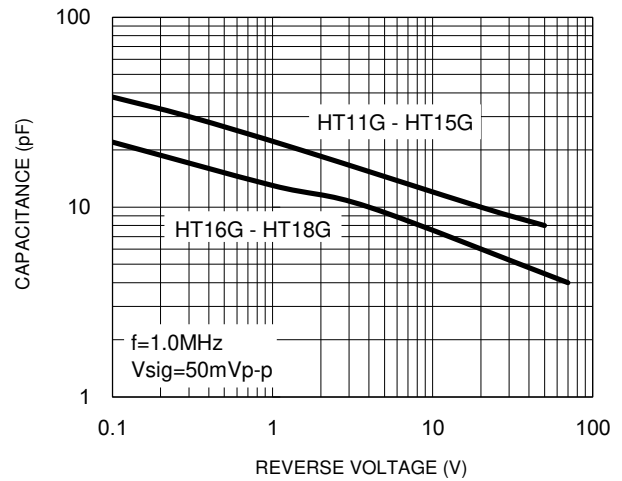
**CHARACTERISTICS CURVES**

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

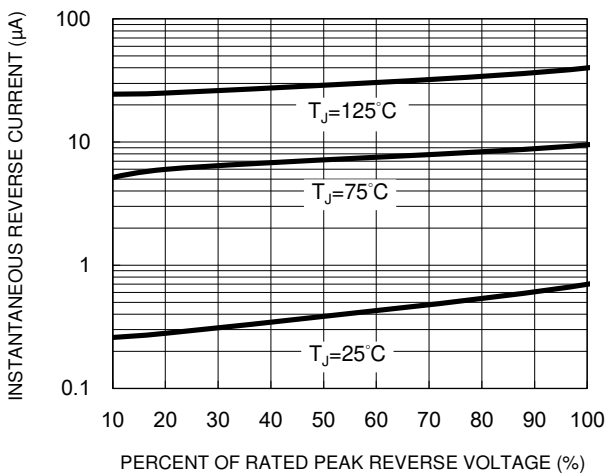
**Fig.1 Forward Current Derating Curve**



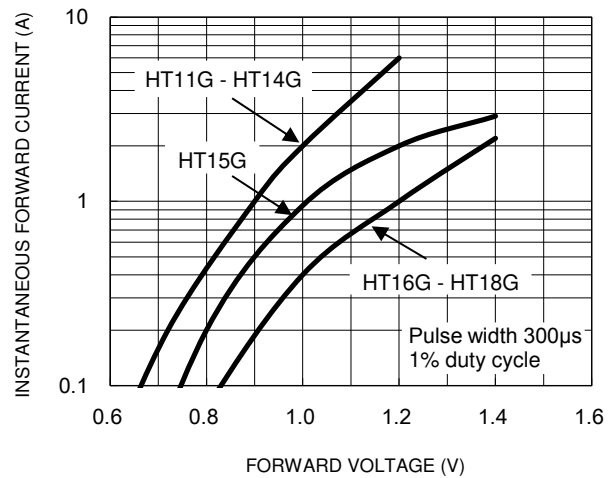
**Fig.2 Typical Junction Capacitance**



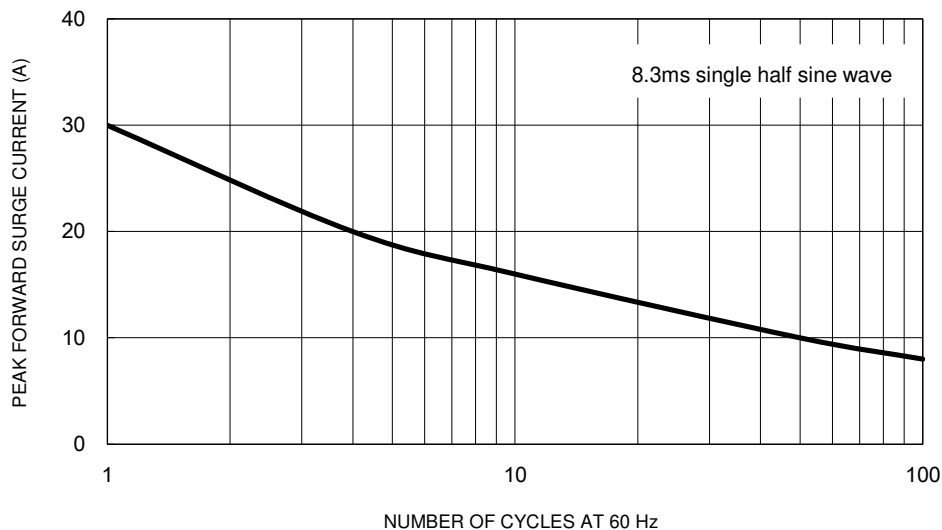
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



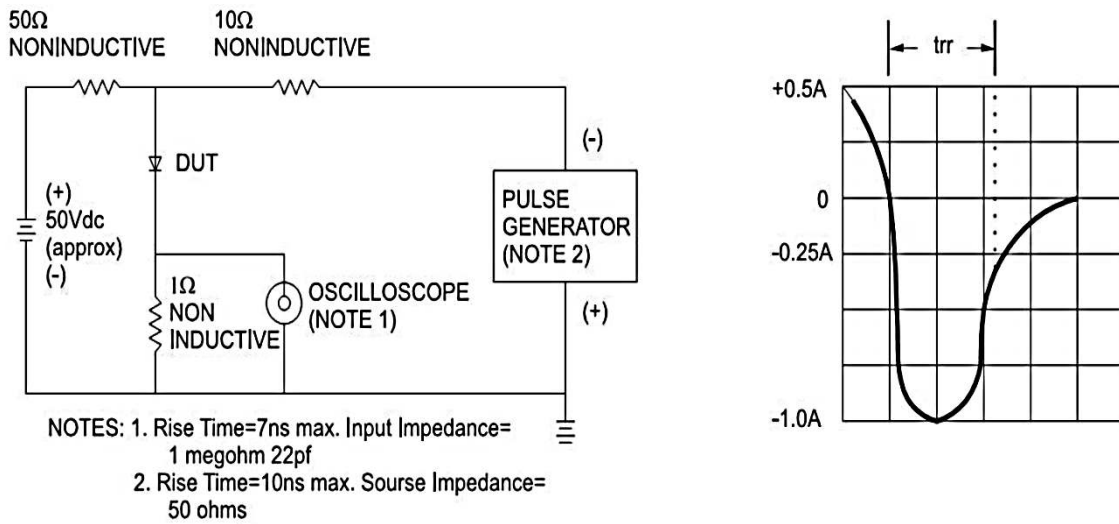
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



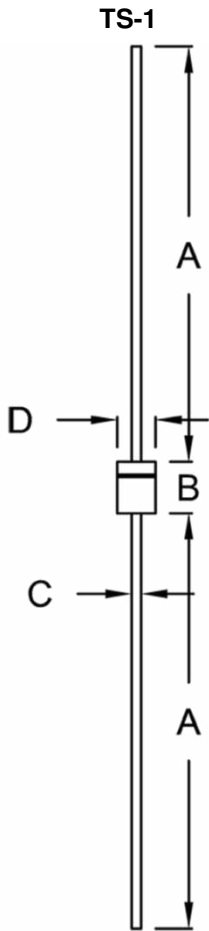
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  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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