

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

### FEATURES

- Glass passivated chip junction
- High current capability
- High reliability
- High surge current capability
- High efficiency, Low  $V_F$
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- High frequency rectification
- Freewheeling application
- Switching mode converters and inverters in computer and telecommunication.

### MECHANICAL DATA

- Case: TS-1
- Molding compound meets UL 94V-0 flammability rating
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 0.2 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	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-K	HT 12G-K	HT 13G-K	HT 14G-K	HT 15G-K	HT 16G-K	HT 17G-K	HT 18G-K	UNIT
Marking code on the device		HT11G	HT12G	HT13G	HT14G	HT15G	HT16G	HT17G	HT18G	
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	$I_{F(AV)}$	1								A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	30								A
Junction temperature	$T_J$	- 55 to +150								°C
Storage temperature	$T_{STG}$	- 55 to +150								°C

<b>THERMAL PERFORMANCE</b>			
PARAMETER	SYMBOL	LIMIT	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 per diode <sup>(1)</sup>	HT11G-K HT12G-K HT13G-K HT14G-K	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	$V_F$	-	1.0	V
	HT15G-K			-	1.30	V
	HT16G-K HT17G-K HT18G-K			-	1.70	V
Reverse current @ rated $V_R$ per diode <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-K HT12G-K HT13G-K HT14G-K HT15G-K	1 MHz, $V_R = 4.0\text{V}$	$C_J$	15	-	pF
	HT16G-K HT17G-K HT18G-K			10	-	pF
Reverse recovery time	HT11G-K HT12G-K HT13G-K HT14G-K HT15G-K	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{RR} = 0.25\text{A}$	$t_{rr}$	-	50	ns
	HT16G-K HT17G-K HT18G-K			-	75	ns

**Notes:**

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

<b>ORDERING INFORMATION</b>				
<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>PACKAGE</b>	<b>PACKING</b>
HT1XG-K (Note 1, 2)	A0	G	TS-1	3,000 / Ammo box (52mm taping)
	A1		TS-1	3,000 / Ammo box (26mm taping)
	R0		TS-1	5,000 / 13" Paper reel
	B0		TS-1	1,000 / Bulk packing

**Notes:**

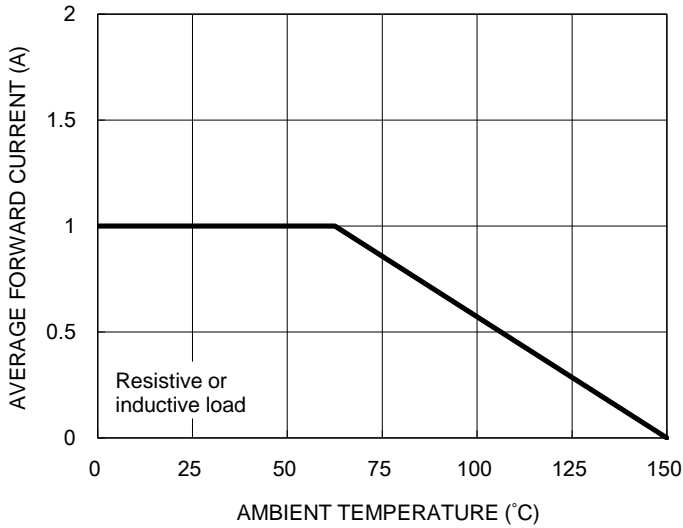
1. "x" defines voltage from 50V (HT11G-K) to 1000V (HT18G-K)
2. Whole series with green compound (halogen-free)

<b>EXAMPLE P/N</b>				
<b>EXAMPLE P/N</b>	<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>DESCRIPTION</b>
HT11G-K A0G	HT11G-K	A0	G	Green compound

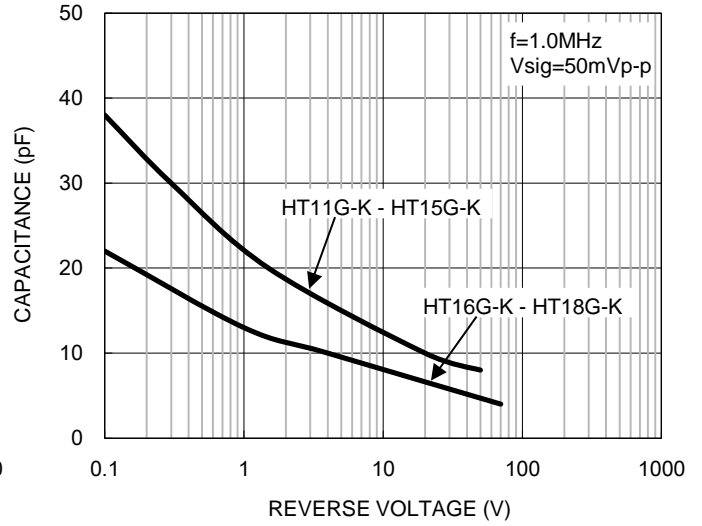
**CHARACTERISTICS CURVES**

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

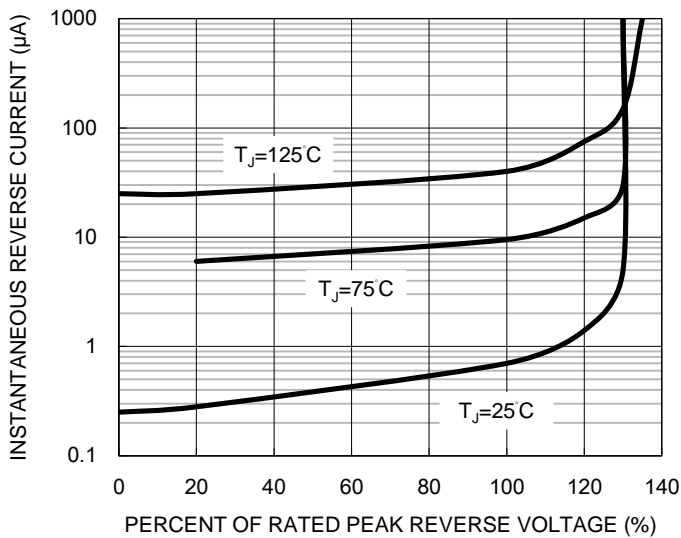
**Fig.1 Forward Current Derating Curve**



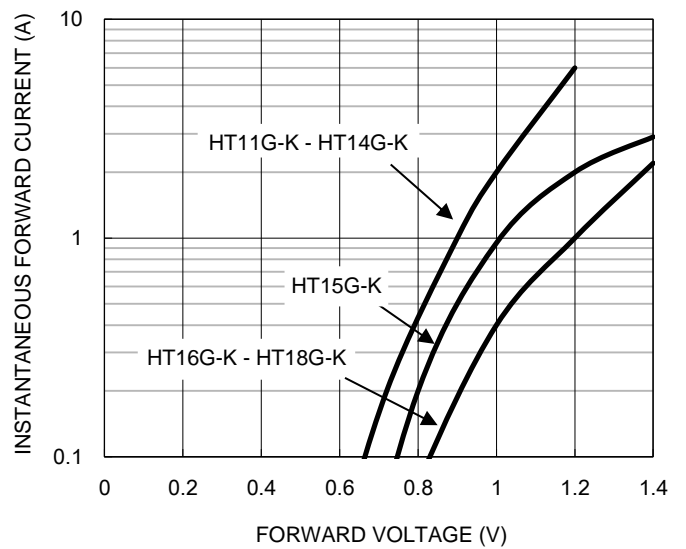
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



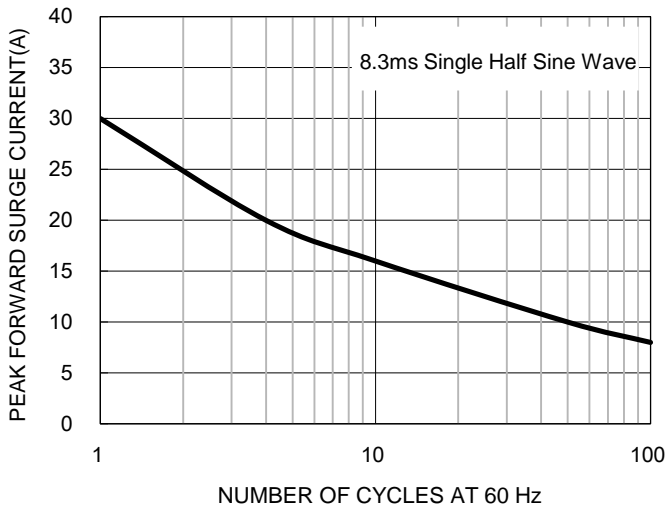
**Fig.4 Typical Forward Characteristics**



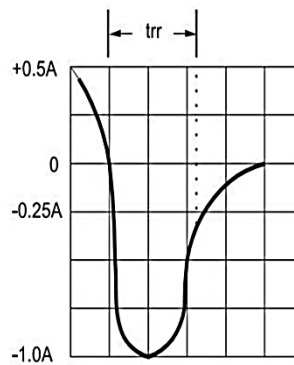
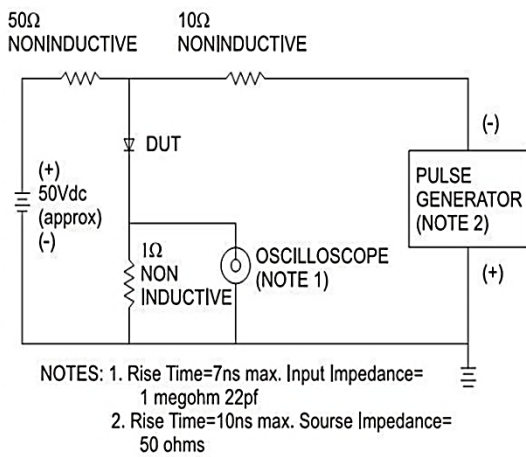
**CHARACTERISTICS CURVES**

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

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

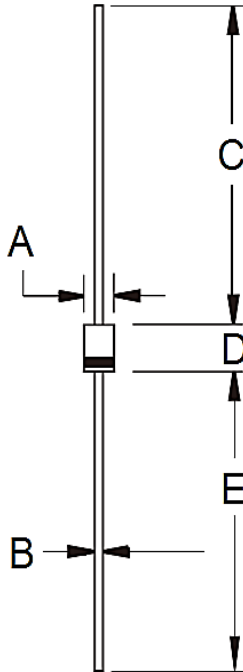


**Fig.6 Reverse Recovery Time Characteristic And Test Circuit Diagram**



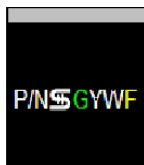
**PACKAGE OUTLINE DIMENSIONS**

TS-1



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

**MARKING DIAGRAM**



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

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