

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

### FEATURES

- Low forward voltage drop
- High current capability
- High reliability
- High surge current capability
- 3mm miniature body
- 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	1T1G-K	1T2G-K	1T3G-K	1T4G-K	1T5G-K	1T6G-K	1T7G-K	UNIT
Marking code on the device		1T1G	1T2G	1T3G	1T4G	1T5G	1T6G	1T7G	
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	$I_{F(AV)}$	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

**THERMAL PERFORMANCE**

PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	100	$^{\circ}C/W$

**ELECTRICAL SPECIFICATIONS** ( $T_A = 25^{\circ}C$  unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT	
Forward voltage per diode <sup>(1)</sup>	$I_F = 1A, T_J = 25^{\circ}C$	$V_F$	-	1.1	V	
				1T1G-K	-	1.0
			1T2G-K			
			1T3G-K			
			1T4G-K			
			1T5G-K			
			1T6G-K			
1T7G-K						
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$T_J = 25^{\circ}C$	$I_R$	-	5	$\mu A$	
	$T_J = 125^{\circ}C$		-	100	$\mu A$	
Junction capacitance	1 MHz, $V_R = 4.0V$	$C_J$	10	-	pF	

**Notes:**

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

**ORDERING INFORMATION**

PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
1TxG-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 (1T1G-K) to 1000V (1T7G-K)
2. Whole series with green compound (halogen-free)

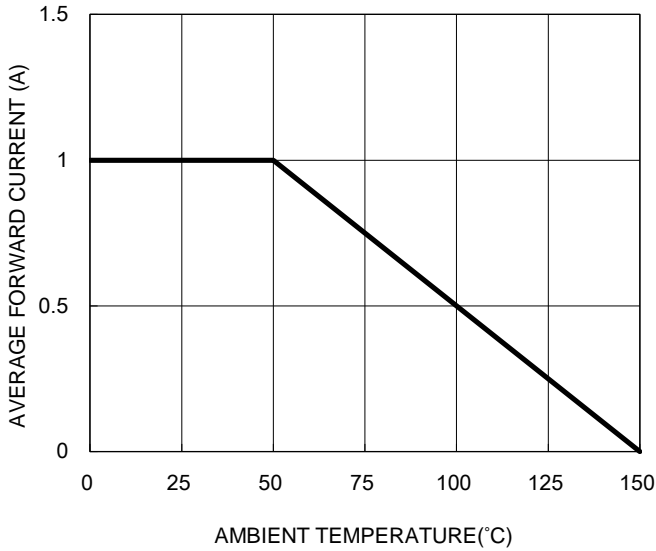
**EXAMPLE P/N**

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
1T1G-K A0G	1T1G-K	A0	G	Green compound

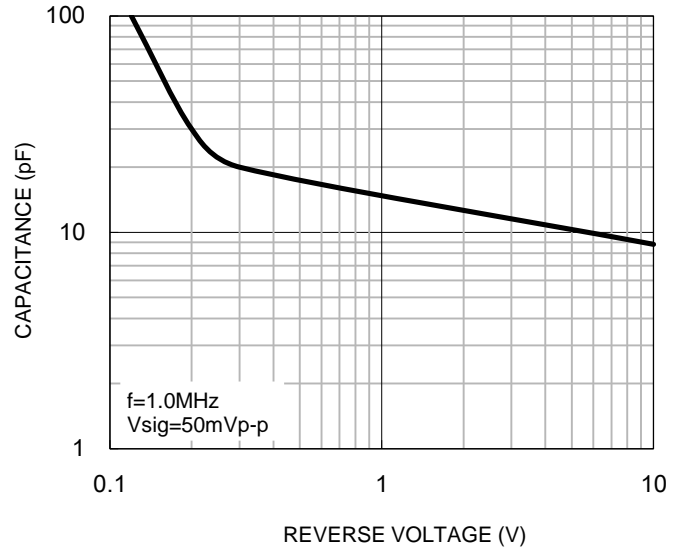
**CHARACTERISTICS CURVES**

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

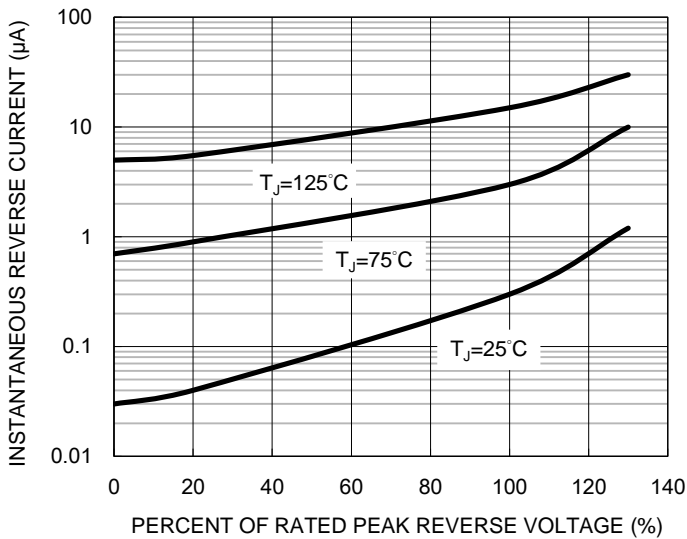
**Fig.1 Forward Current Derating Curve**



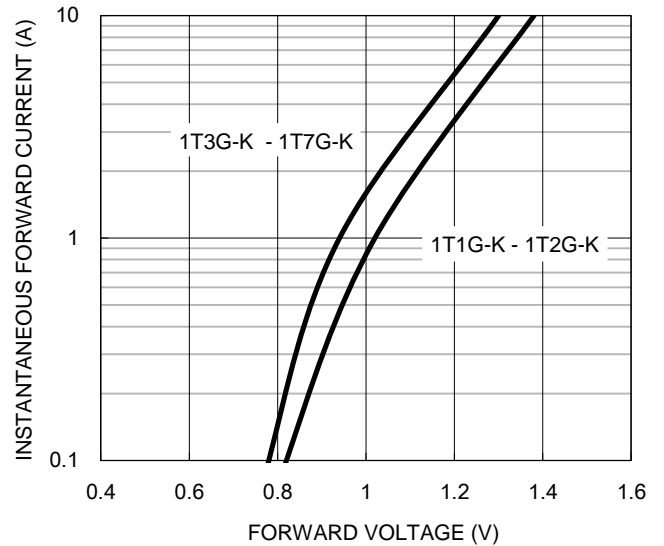
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



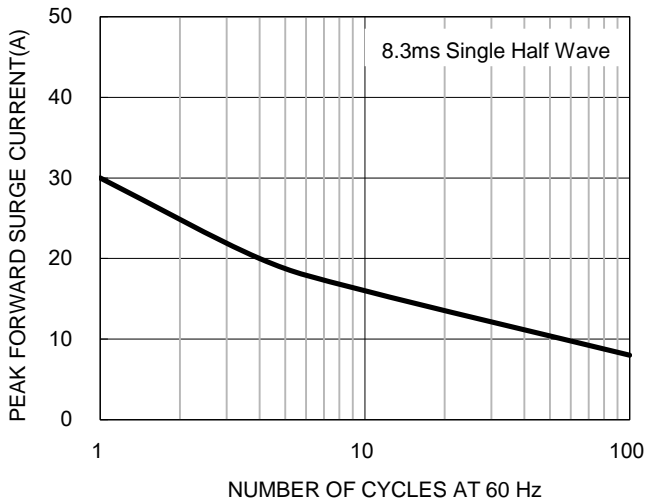
**Fig.4 Typical Forward Characteristics**



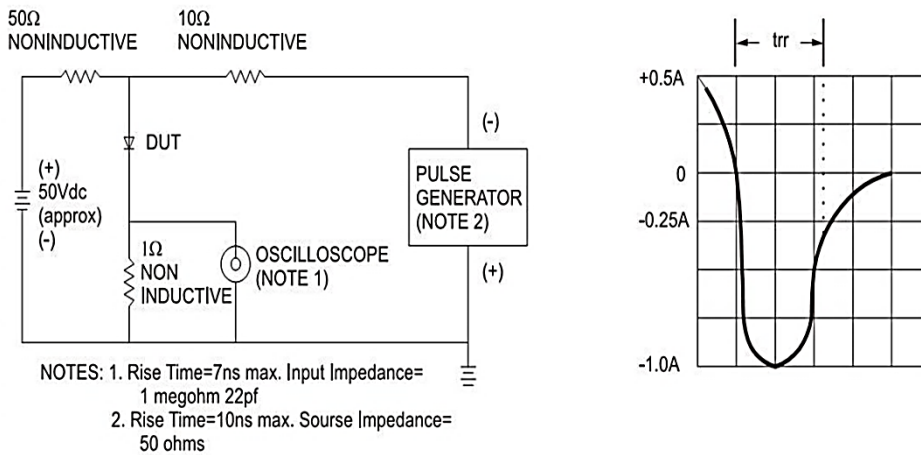
**CHARACTERISTICS CURVES**

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

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

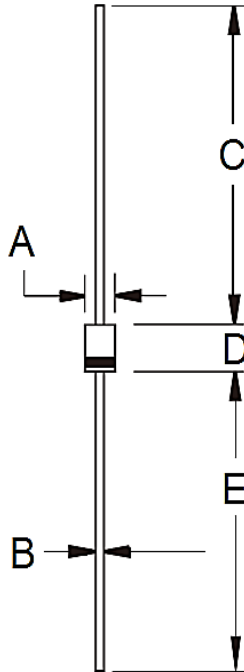


**Fig.6 Reverse Recovery Time Characteristic And Test Circuit Diagram**



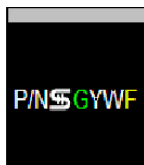
**PACKAGE OUTLINE DIMENSIONS**

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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