

1A, 50V - 1000V Standard Rectifier

FEATURES

- AEC-Q101 qualified available
- Low forward voltage drop
- High current capability
- High reliability
- High surge current capability
- 3mm miniature body
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	1	A
V_{RRM}	50 - 1000	V
I_{FSM}	30	A
$T_{J MAX}$	150	°C
Package	TS-1	
Configuration	Single die	

APPLICATIONS

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



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)



TS-1



Cathode ————— Anode

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	1T1G	1T2G	1T3G	1T4G	1T5G	1T6G	1T7G	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	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

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	100	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 1A, T_J = 25^\circ C$	V_F	-	1.1	V
			-	1.0	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^\circ C$	I_R	-	5	μA
	$T_J = 125^\circ C$		-	100	μA
Junction capacitance	1MHz, $V_R = 4.0V$	C_J	10	-	pF

Notes:

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

ORDERING INFORMATION

ORDERING CODE ⁽¹⁾⁽²⁾	PACKAGE	PACKING
1TxG	TS-1	5,000 / Tape & Reel
1TxG A0G	TS-1	3,000 / Ammo box
1TxGH	TS-1	5,000 / Tape & Reel
1TxGHA0G	TS-1	3,000 / Ammo box

Notes:

1. "x" defines voltage from 50V (1T1G) to 1000V (1T7G)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

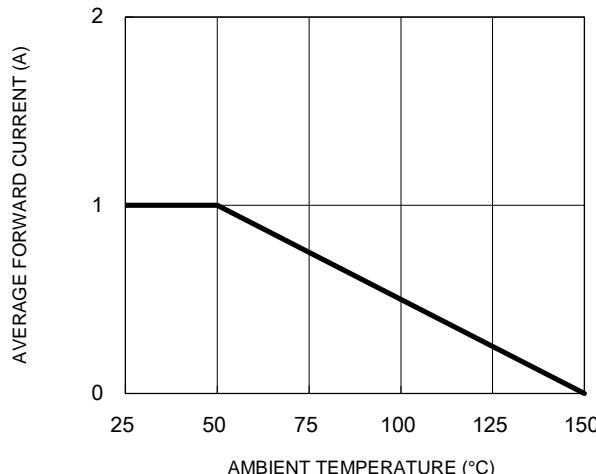


Fig.2 Typical Junction Capacitance

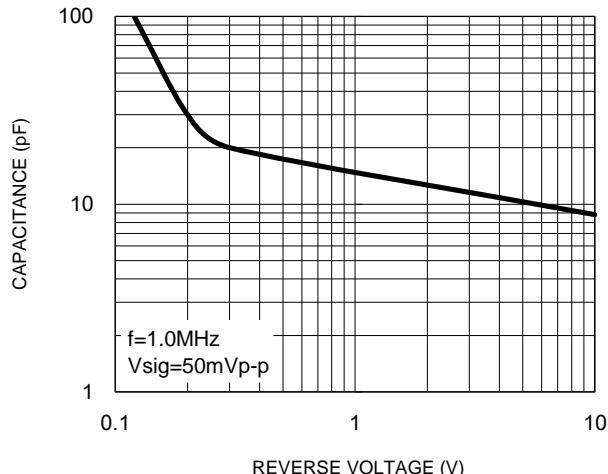


Fig.3 Typical Reverse Characteristics

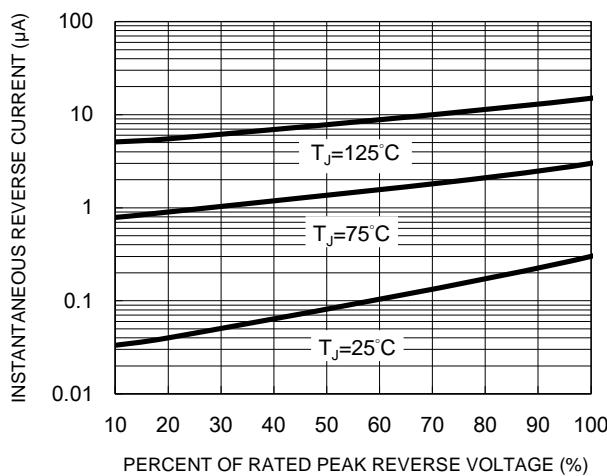


Fig.4 Typical Forward Characteristics

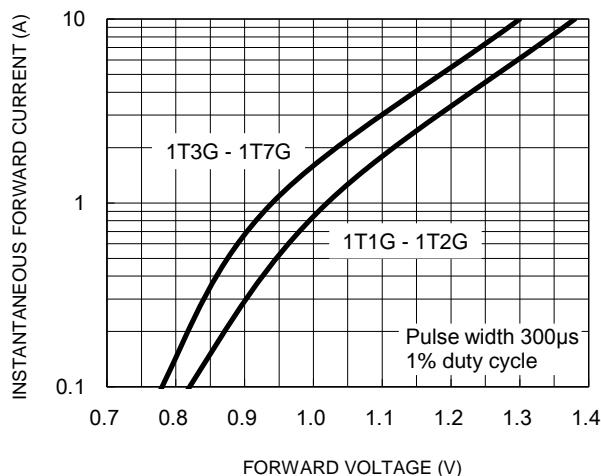
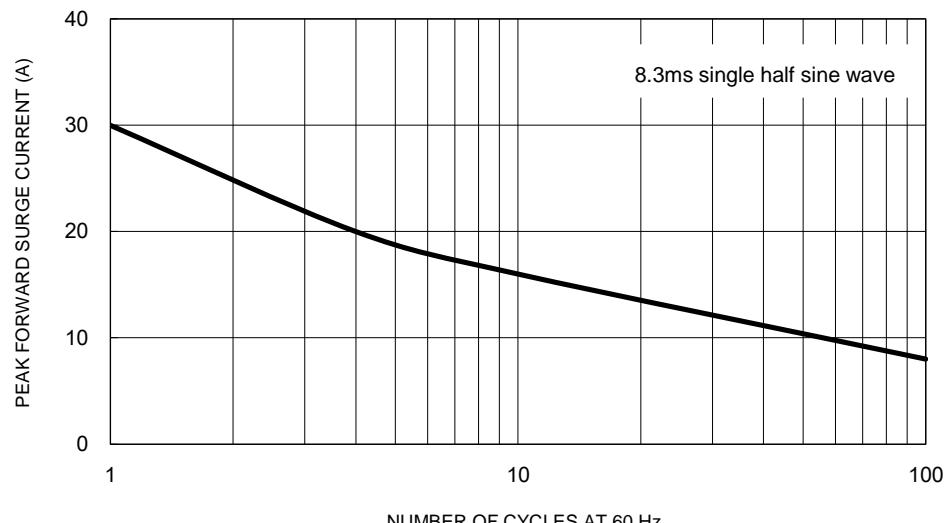
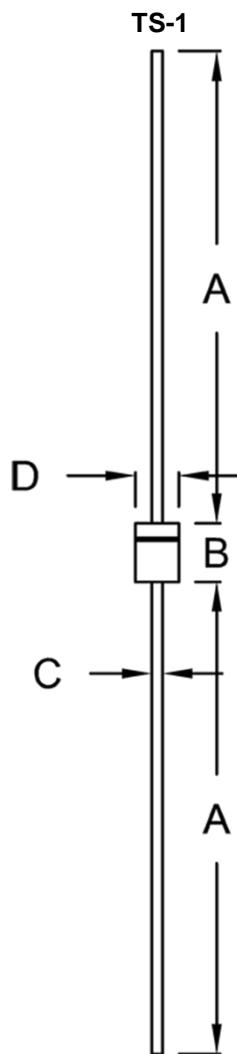


Fig.5 Maximum Non-Repetitive Forward Surge Current



PACKAGE OUTLINE DIMENSIONS


DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	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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