

1A, 600V Standard Rectifier

FEATURES

- AEC-Q101 qualified available
- Ideal for automated placement
- Compact package size
- High surge current capability
- Low power loss, high efficiency
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

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

MECHANICAL DATA

- Case: A-405
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.200g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	1	A
V_{RRM}	600	V
I_{FSM}	30	A
$T_{J\ MAX}$	150	°C
Package	A-405	
Configuration	Single die	



A-405



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

PARAMETER	SYMBOL	1N4005SG	UNIT
Marking code on the device		1N4005SG	
Repetitive peak reverse voltage	V_{RRM}	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	420	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-lead thermal resistance	$R_{\theta JL}$	26	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	46	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	27	°C/W

Thermal Performance Note: Units mounted on PCB (5mm x 5mm Cu pad test board)

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 0.5\text{A}, T_J = 25^\circ\text{C}$	V_F	0.89	0.94	V
	$I_F = 1.0\text{A}, T_J = 25^\circ\text{C}$		0.94	1.00	V
	$I_F = 0.5\text{A}, T_J = 125^\circ\text{C}$		0.77	0.82	V
	$I_F = 1.0\text{A}, T_J = 125^\circ\text{C}$		0.83	0.88	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	5	μA
	$T_J = 125^\circ\text{C}$		-	100	μA
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	C_J	14	-	pF

Notes:

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

ORDERING INFORMATION

ORDERING CODE ⁽¹⁾	PACKAGE	PACKING
1N4005SG	A-405	5,000 / Tape & Reel
1N4005SG A0G	A-405	3,000 / Ammo box
1N4005SGH	A-405	5,000 / Tape & Reel
1N4005SGHA0G	A-405	3,000 / Ammo box

Notes:

1. "H" means ACE-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

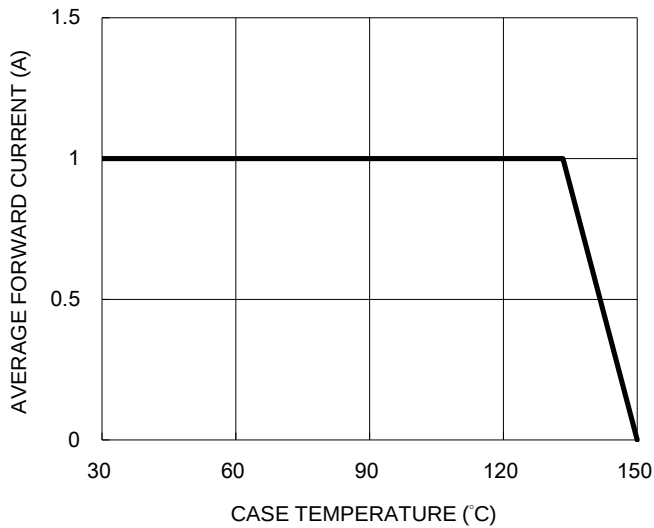


Fig.2 Typical Junction Capacitance

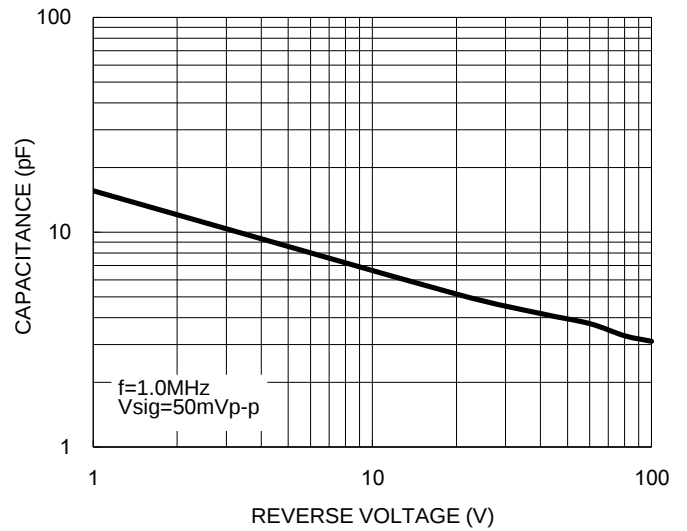


Fig.3 Typical Reverse Characteristics

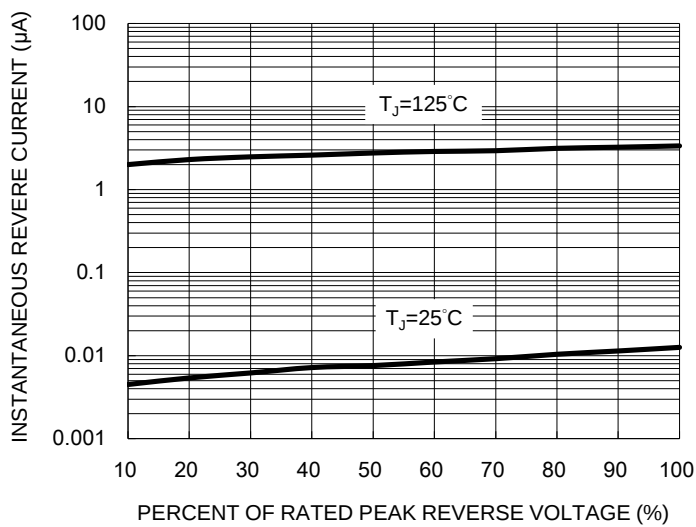
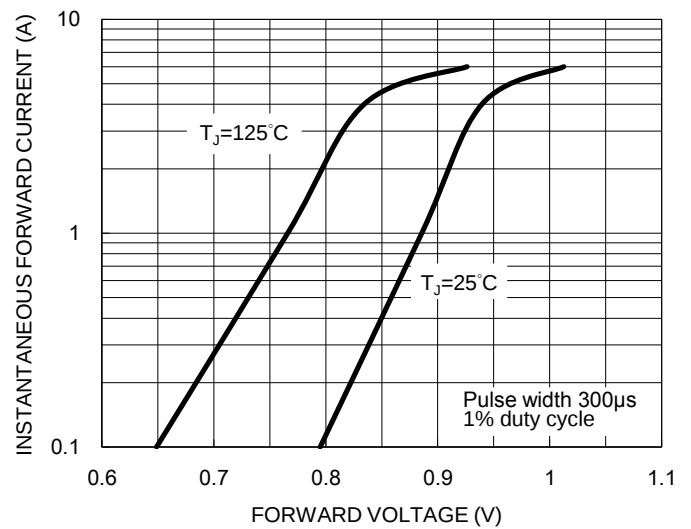
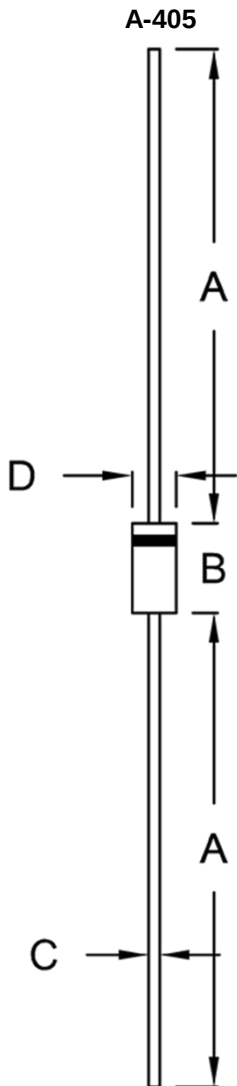


Fig.4 Typical Forward Characteristics



PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	4.20	5.40	0.165	0.213
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
 YWW = Date Code
 F = Factory Code

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