1A, 600V Glass Passivated Rectifier

FEATURES

- Ideal for automated placement
- Compact package size
- High surge current capability
- Low power loss, high efficiency
- 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,automotive and telecommunication

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
$I_{F(AV)}$	1	A
V_{RRM}	600	V
I_{FSM}	30	A
V_F at I_F=1A	1.0	V
$T_{J\ MAX}$	150	°C
Package	A-405	
Configuration	Single Die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

MECHANICAL DATA

- Case: A-405
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Part no. with suffix "H" means AEC-Q101 qualified
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.2 g (approximately)

A-405

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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	$I_{F(AV)}$	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**	**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 recommended PCB (5mm x 5mm Cu pad test board)

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)					
PARAMETER	**CONDITIONS**	**SYMBOL**	**TYP**	**MAX**	**UNIT**
Forward voltage (1)	I_F = 0.5A, T_J = 25°C	V_F	0.89	0.94	V
	I_F = 1A, T_J = 25°C		0.94	1.00	V
	I_F =0.5A, T_J = 125°C		0.77	0.82	V
	I_F = 1A, T_J = 125°C		0.83	0.88	V
Reverse current @ rated V_R per diode (2)	T_J = 25°C	I_R	-	5	μA
	T_J = 125°C		-	100	μA
Junction capacitance	1 MHz, V_R=4V	C_J	14	-	pF

Notes:

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

ORDERING INFORMATION					
PART NO.	**PART NO. SUFFIX**	**PACKING CODE**	**PACKING CODE SUFFIX**	**PACKAGE**	**PACKING**
1N4005SG (Note 1)	H	A0	G	A-405	3K / AMMO box
		R0		A-405	5K / 13" Reel
		B0		A-405	1K / Bulk packing

Note :

1. Whole series with green compound (halogen-free)

EXAMPLE					
EXAMPLE P/N	**PART NO.**	**PART NO. SUFFIX**	**PACKING CODE**	**PACKING CODE SUFFIX**	**DESCRIPTION**
1N4005SGHA0G	1N4005SG	H	A0	G	AEC-Q101 qualified Green compound

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig1. Forward Current Derating Curve

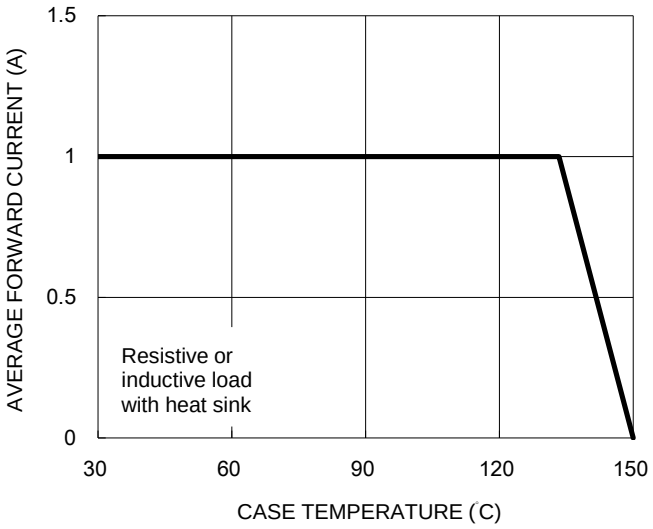


Fig2. Typical Junction Capacitance

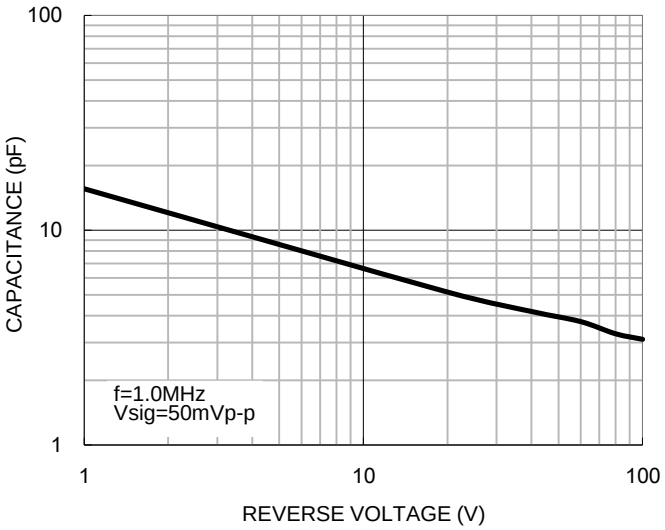


Fig3. Typical Reverse Characteristics

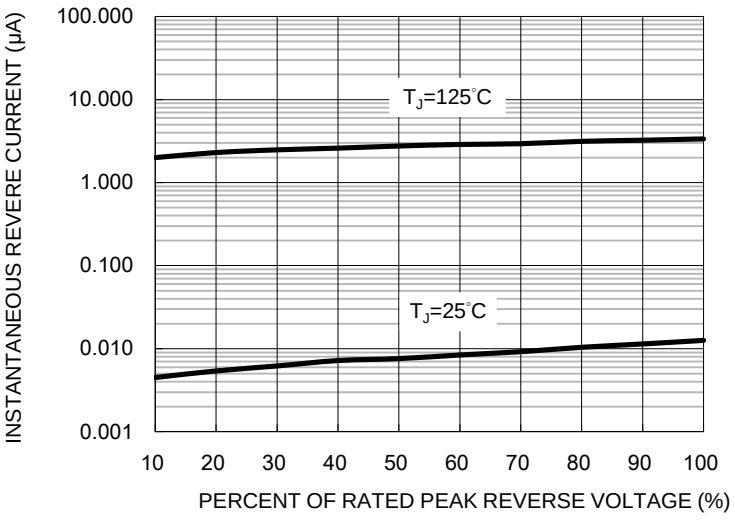
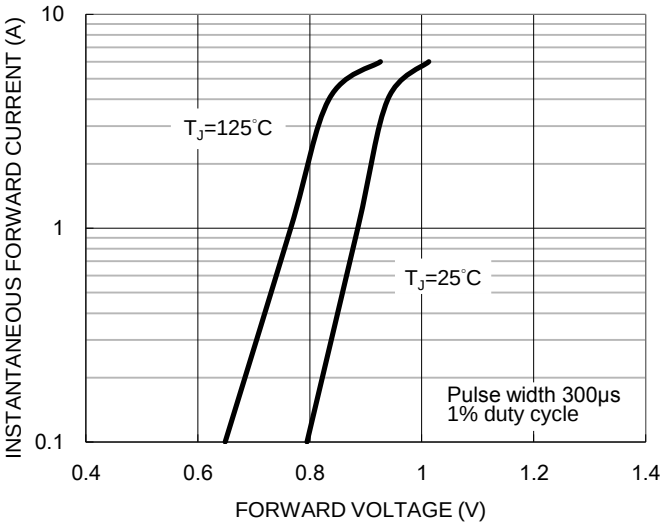
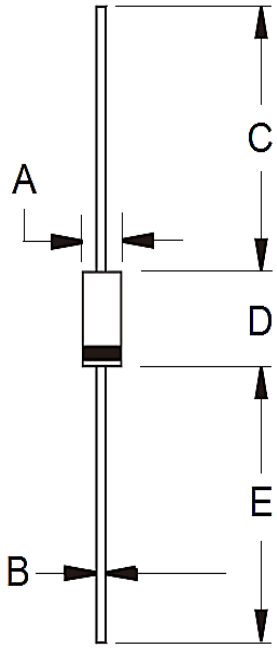


Fig4. Typical Forward Characteristics



PACKAGE OUTLINE DIMENSIONS

A-405



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	4.20	5.20	0.165	0.205
E	25.40	-	1.000	-

MARKING DIAGRAM

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

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