2A, 400V ESD Capability Rectifier

FEATURES

- High ESD capability
- Glass passivated chip junction
- Ideal for automated placement
- Low forward voltage drop
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- AEC-Q101 qualified available:
  ordering code with suffix “H”
- Compliant to RoHS Directive 2011/65/EU and
  in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
$I_{F(AV)}$	2	A
V_{RRM}	400	V
I_{FSM}	50	A
V_F at I_F=2A	1	V
$T_{J\ MAX}$	175	°C
Package	DO-214AA (SMB)	
Configuration	Single die	

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- Converter

MECHANICAL DATA

- Case: DO-214AA (SMB)
- 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: 0.09 g (approximately)

DO-214AA (SMB)

SOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**TSD2G**	**UNIT**
Marking code on the device		TSD2G	
Repetitive peak reverse voltage	V_{RRM}	400	V
Reverse voltage, total rms value	$V_{R(RMS)}$	280	V
Forward current	$I_{F(AV)}$	2	A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	50	A
Junction temperature	T_J	- 55 to +175	°C
Storage temperature	T_{STG}	- 55 to +175	°C

THERMAL PERFORMANCE			
PARAMETER	**SYMBOL**	**TYP**	**UNIT**
Junction-to-lead thermal resistance	$R_{\Theta JL}$	26	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	73	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	27	°C/W

Thermal Performance Note: Units mounted on PCB (10mm x 10mm Cu pad test board)

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)					
PARAMETER	**CONDITIONS**	**SYMBOL**	**TYP**	**MAX**	**UNIT**
Forward voltage per diode (1)	I_F = 1A, T_J = 25°C	V_F	0.87	0.95	V
	I_F = 2A, T_J = 25°C		0.90	1.00	V
	I_F = 1A, T_J = 125°C		0.80	0.90	V
	I_F = 2A, T_J = 125°C		0.75	0.85	V
Reverse current @ rated V_R per diode (2)	T_J = 25°C	I_R	-	1	μA
	T_J = 125°C		-	50	μA
Junction capacitance	1 MHz, V_R=4.0V	C_J	20	-	pF

Notes:

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

IMMUNITY TO ELECTRICAL STATIC DISCHARGE TO THE FOLLOWING STANDARDS (T_A = 25°C unless otherwise noted)						
Standard	**Test Type**	**Test Conditions**	**SYMBOL**	**CLASS**	**Value**	**Typical**
AEC-Q101-001	Human body model(contact mode)	C=100pF,R=1.5kΩ	Vc	H3B	≥8kV	N/A
IEC 61000-4-2	Contact mode	C=150pF,R=330Ω		4	≥8kV	25kV
	Air-discharge mode	C=150pF,R=330Ω		4	≥15kV	30kV
ISO 10605	Contact mode	C=330pF,R=330Ω		L4	≥15kV	25kV
	Air-discharge mode	C=330pF,R=330Ω		L4	≥25kV	30kV

ORDERING INFORMATION			
ORDERING CODE (Note 1,2)	**PACKAGE**	**PACKING**	**STATUS**
TSD2GHR5G	SMB	850 / 7" Plastic reel	Active
TSD2GHR4G	SMB	3,000 / 13" Paper reel	NRND
TSD2GHM4G	SMB	3,000 / 13" Plastic reel	Active
TSD2G R5G	SMB	850 / 7" Plastic reel	Active
TSD2G R4G	SMB	3,000 / 13" Paper reel	NRND
TSD2G M4G	SMB	3,000 / 13" Plastic reel	Active

Note 1:
"H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

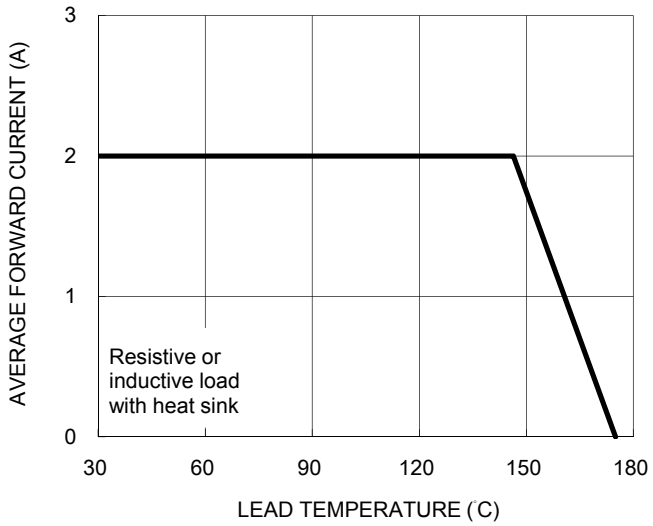


Fig.2 Typical Junction Capacitance

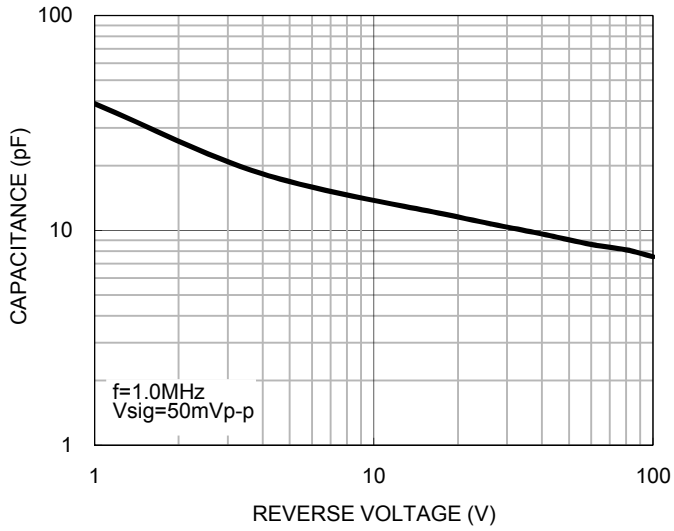


Fig.3 Typical Reverse Characteristics

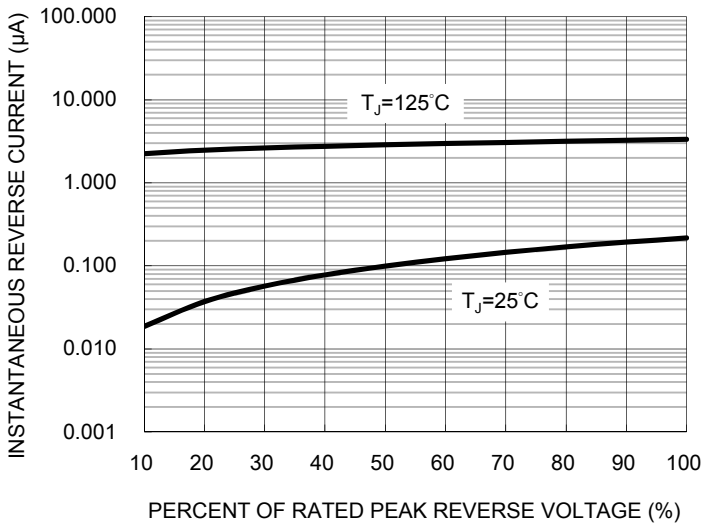
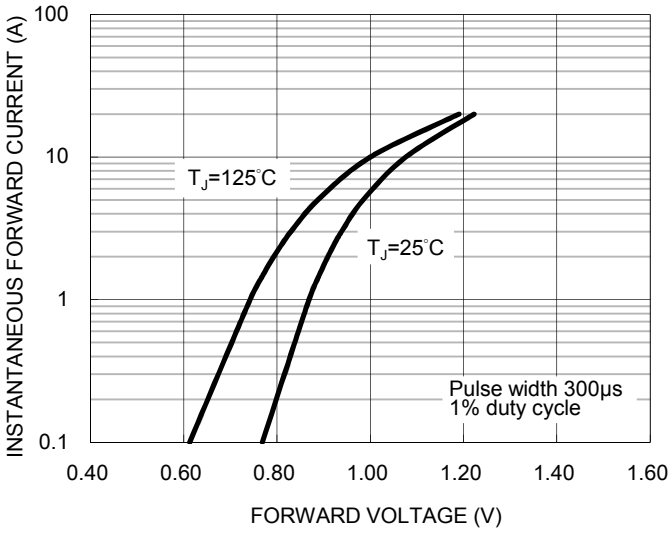
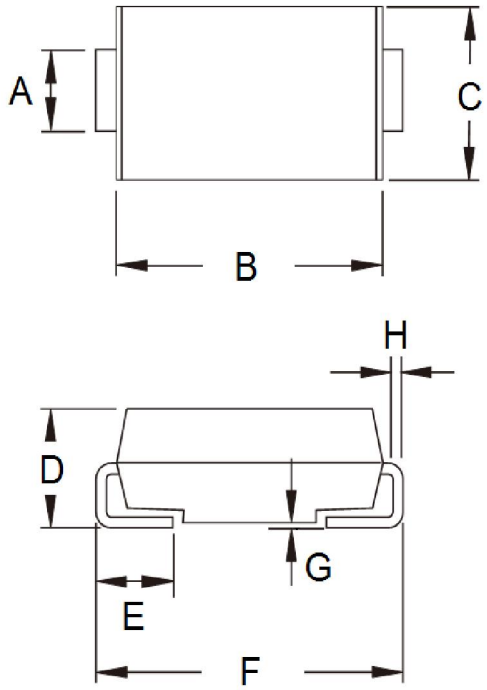


Fig.4 Typical Forward Characteristics



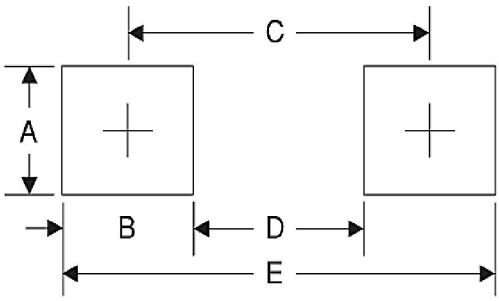
PACKAGE OUTLINE DIMENSIONS

DO-214AA (SMB)



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.95	2.20	0.077	0.087
B	4.05	4.60	0.159	0.181
C	3.30	3.95	0.130	0.156
D	1.95	2.65	0.077	0.104
E	0.75	1.60	0.030	0.063
F	5.10	5.60	0.201	0.220
G	0.05	0.20	0.002	0.008
H	0.15	0.31	0.006	0.012

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	2.3	0.091
B	2.5	0.098
C	4.3	0.169
D	1.8	0.071
E	6.8	0.268

MARKING DIAGRAM

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

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Purchasers are solely responsible for the choice, selection, and use of TSC products and TSC assumes no liability for application assistance or the design of Purchasers' products.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Other Tools ***category:***

Click to view products by Taiwan Semiconductor ***manufacturer:***

Other Similar products are found below :

CR-05FL7--150R CR-05FL7--698K 899-2-KT46 899-5-KT46 CR-0AFL4--332K CR-12FP4--260R CRCW04021961FRT7 5800-0090 CRCW0603102JRT5 59065-5 00-8273-RDPP 00-8729-WHPP 593033 593058 593072 593564100 593575 593591 593593 011349-000 LTILA506SBLAMNBL LUC-012S070DSM LUC-018S070DSP 599-2021-3-NME 599-JJ-2021-03 00-5080-YWPP 5E4750/01-20R0-T/R LW1A-L1-GL LW1A-P1-GD LW1L-A1C10V-GL LW1L-M1C70-A 0202-0173 00-9089-RDPP 00-9300-RDPP 01-1003W-8/32-10 601-GP-08-KT39 601-JJ-06 601YSY 602-JJ-03 602SPB 602Z 603-JJ-07-FP 603-JJY-04 604J 604-JJ-05 CRTN1013 CS16 6-1579014-0 CSB2 C-S-C