

3A, 45V Trench Schottky Rectifier

FEATURES

- Patented Trench Schottky technology
- Low power loss, high efficiency
- High surge current capability
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Trench Schottky barrier rectifier are designed for high frequency miniature switched mode power supplies such as adapters, lighting

MECHANICAL DATA

- Case: DO-214AC (SMA)
- Molding compound meets UL 94V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Packing code with suffix "G" means green compound (halogen-free)
- Part no. with suffix "H" means AEC-Q101 qualified
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.06 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	3	A
V_{RRM}	45	V
I_{FSM}	50	A
$T_{J\ MAX}$	150	°C
Package	DO-214AC (SMA)	
Configuration	Single dice	



DO-214AC (SMA)

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	TSSA3U45	UNIT
Marking code on the device		3U45	
Repetitive peak reverse voltage	V_{RRM}	45	V
Reverse voltage, total rms value	V_{RMS}	31	V
Forward current	$I_{F(AV)}$	3	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 +150	°C
Storage temperature	T_{STG}	- 55 to +150	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	LIMIT	UNIT
Junction to Lead Thermal Resistance ⁽¹⁾	$R_{\theta JL}$	10	°C/W
Junction to Ambient Thermal Resistance ⁽¹⁾	$R_{\theta JA}$	70	°C/W

Note:

1. RthjL test according to JESD51-14

ELECTRICAL SPECIFICATIONS (TA = 25°C unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 3A, T_J = 25^\circ C$	V_F	0.42	0.48	V
	$I_F = 3A, T_J = 125^\circ C$		0.30	0.40	
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^\circ C$	I_R	-	500	μA
	$T_J = 125^\circ C$		50	100	mA

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
TSSA3U45	N/A	E3	G	Clip SMA	1,800 / 7" Plastic reel
		E2		Clip SMA	7,500 / 13" Plastic reel
		F3		Folded SMA	1,800 / 7" Plastic reel
		F2		Folded SMA	7,500 / 13" Paper reel
		F4		Folded SMA	7,500 / 13" Paper reel
	H	M2		SMA	7,500 / 13" Plastic reel
		R3		SMA	1,800 / 7" Plastic reel

*: Optional available

EXAMPLE					
EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
TSSA3U45HR3G	TSSA3U45	H	R3	G	Green compound AEC-Q101 qualified
TSSA3U45 E3G	TSSA3U45		E3	G	Green compound

CHARACTERISTICS CURVES

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

Fig1. Forward Current Derating Curve

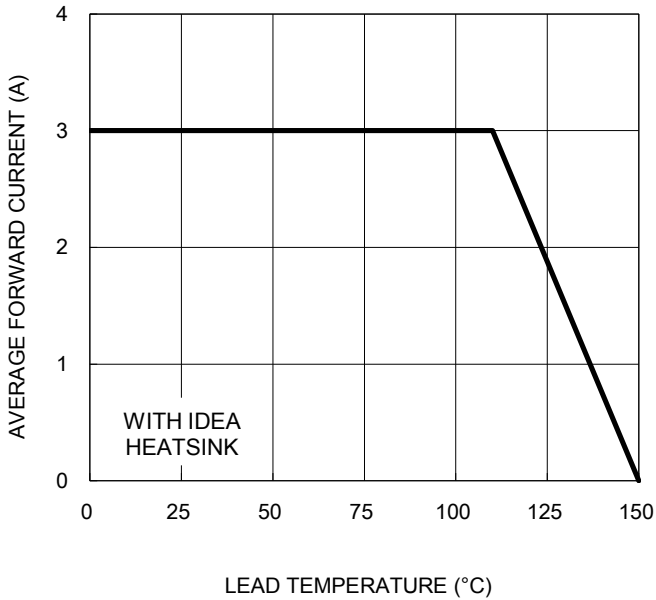


Fig2. Total Capacitance Characteristics

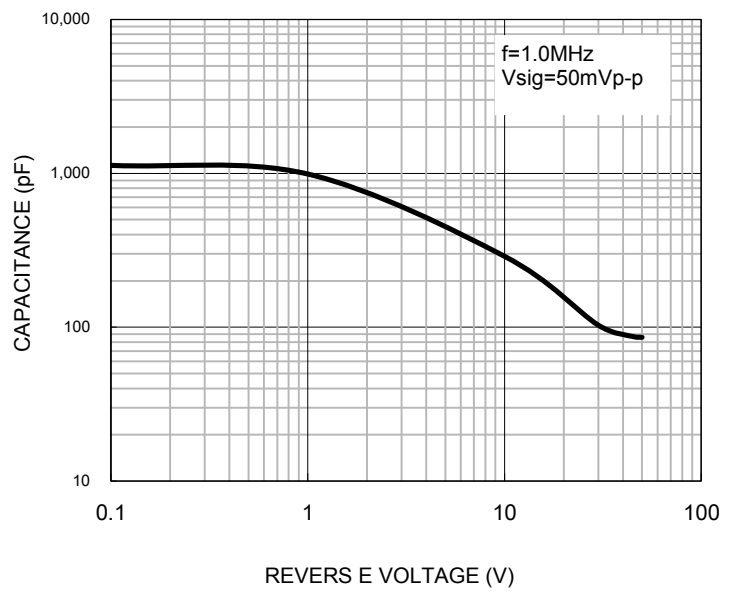


Fig3. Typical Reverse Characteristics

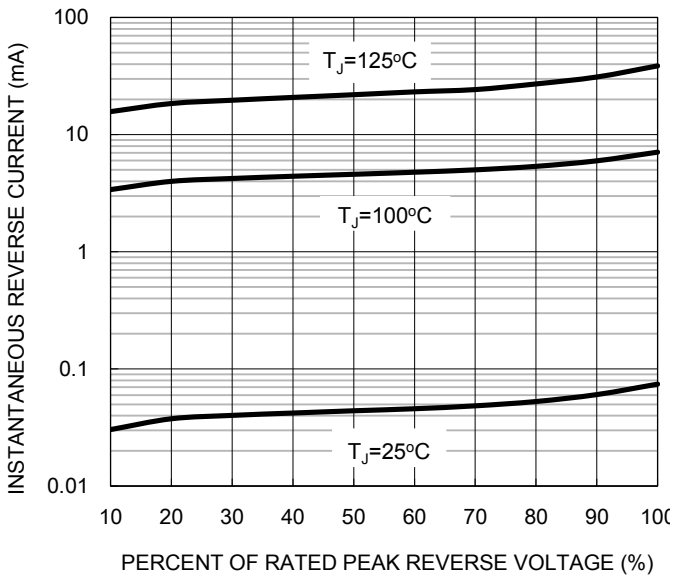
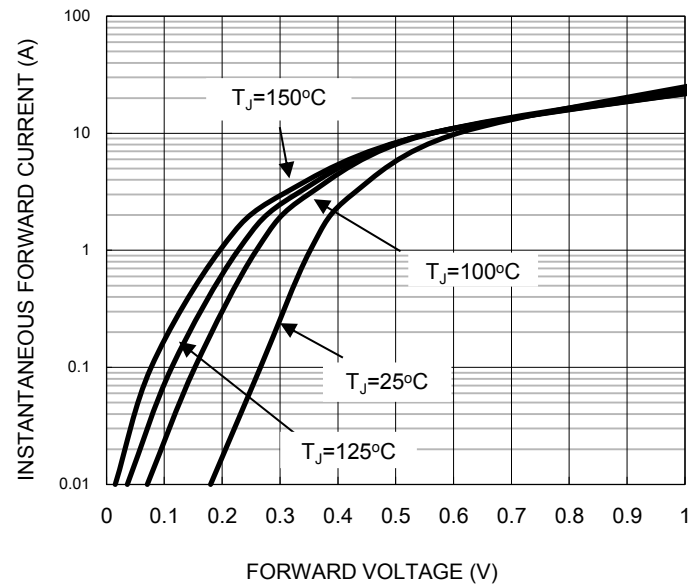
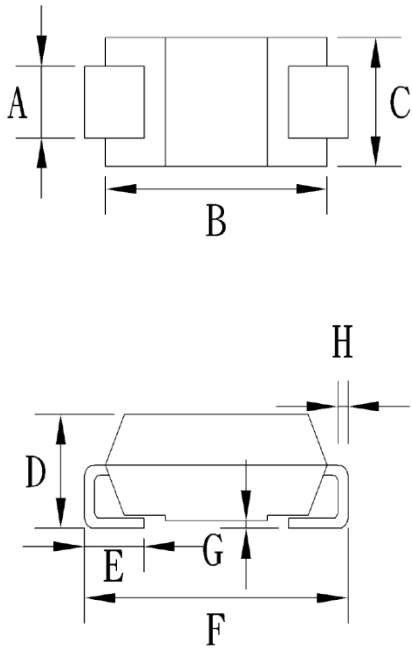


Fig4. Typical Forward Characteristics



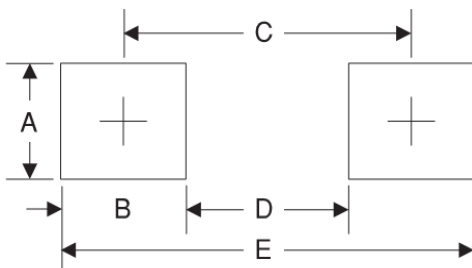
PACKAGE OUTLINE DIMENSIONS

DO-214AC (SMA)



DIM	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.27	1.58	0.050	0.062
B	4.06	4.60	0.160	0.181
C	2.29	2.83	0.090	0.111
D	1.99	2.50	0.078	0.098
E	0.90	1.41	0.035	0.056
F	4.95	5.33	0.195	0.210
G	0.10	0.20	0.004	0.008
H	0.15	0.31	0.006	0.012

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.68	0.066
B	1.52	0.060
C	3.93	0.155
D	2.41	0.095
E	5.45	0.215

MARKING DIAGRAM



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

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