



# 1A, 200V - 1000V Standard Surface Mount Rectifier

#### **FEATURES**

- AEC-Q101 qualified
- Glass passivated chip junction
- Ideal for automated placement
- Low profile package
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

#### **APPLICATIONS**

- Freewheeling
- Snubber
- DC/DC converters
- Automotive application

#### **MECHANICAL DATA**

- · Case: Thin SMA
- 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: Indicated by cathode band
- Weight: 0.029g (approximately)

KEY PARAMETERS			
PARAMETER	VALUE	UNIT	
I <sub>F</sub>	1	Α	
$V_{RRM}$	200 - 1000	V	
I <sub>FSM</sub>	30	Α	
T <sub>J MAX</sub>	150	°C	
Package	Thin SMA		
Configuration	Single die		







Thin SMA



PARAMETER		SYMBOL	S1D	S1G	S1J	S1K	S1M	UNIT
			ALH	ALH	ALH	ALH	ALH	
Marking code on the device			S1DAH	S1GAH	S1JAH	S1KAH	S1MAH	
Repetitive peak reverse volta	ge	$V_{RRM}$	200	400	600	800	1000	V
Reverse voltage, total rms va	lue	V <sub>R(RMS)</sub>	140	280	420	560	700	V
Forward current		I <sub>F</sub>			1			Α
Surge peak forward current, t = 8.3ms			30		Α			
single half sine-wave superimposed on rated load	t = 1.0ms	I <sub>FSM</sub>	100				Α	
Junction temperature		TJ	T <sub>J</sub> -55 to +150			°C		
Storage temperature		T <sub>STG</sub> -55 to +150			°C			

THERMAL PERFORMANCE				
PARAMETER	SYMBOL	TYP	UNIT	
Junction-to-lead thermal resistance	R <sub>eJL</sub>	29	°C/W	
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	82	°C/W	
Junction-to-case thermal resistance	R <sub>eJC</sub>	30	°C/W	

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

ELECTRICAL SPECIFICATIONS (T <sub>A</sub> = 25°C unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage <sup>(1)</sup>	$I_F = 0.5A, T_J = 25^{\circ}C$		0.90	-	V
	$I_F = 1.0A, T_J = 25^{\circ}C$		0.96	1.10	V
	I <sub>F</sub> = 0.5A, T <sub>J</sub> = 125°C	V <sub>F</sub>	0.78	-	V
	I <sub>F</sub> = 1.0A, T <sub>J</sub> = 125°C		0.85	0.98	V
Reverse current @ rated V <sub>R</sub> <sup>(2)</sup>	T <sub>J</sub> = 25°C		-	1	μA
	T <sub>J</sub> = 125°C	– I <sub>R</sub>	-	50	μA
Junction capacitance	1MHz, V <sub>R</sub> = 4.0V	CJ	8	-	pF

#### Notes:

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

ORDERING INFORMATION			
ORDERING CODE <sup>(1)</sup>	PACKAGE	PACKING	
S1xALH	Thin SMA	14,000 / Tape & Reel	

#### Notes:

1. "x" defines voltage from 200V(S1DALH) to 1000V(S1MALH)



### **CHARACTERISTICS CURVES**

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

**Fig.1 Forward Current Derating Curve** 

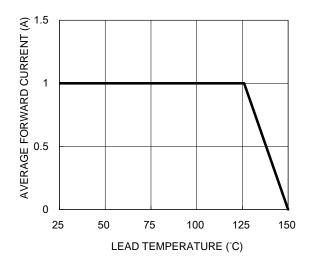
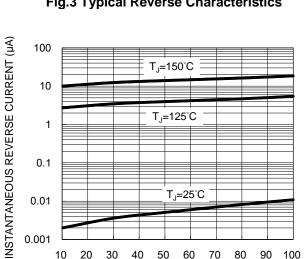


Fig.3 Typical Reverse Characteristics



50 60 70

PERCENT OF RATED PEAK REVERSE VOLTAGE (%)

30

Fig.2 Typical Junction Capacitance

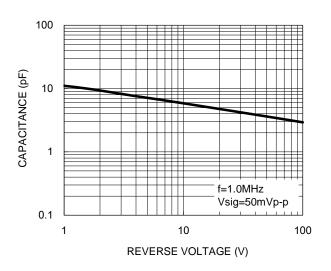


Fig.4 Typical Forward Characteristics

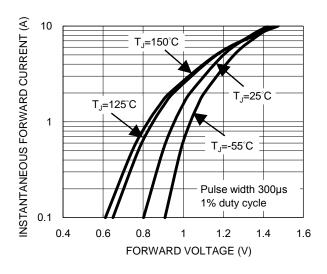
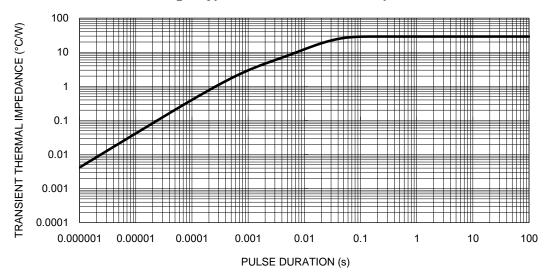


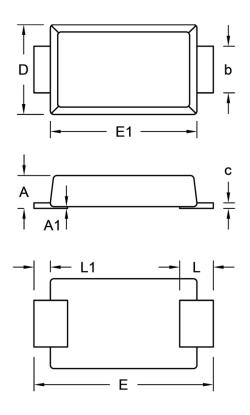
Fig.5 Typical Transient Thermal Impedance





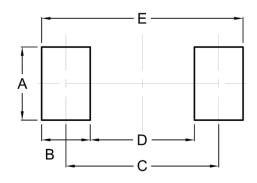
# **PACKAGE OUTLINE DIMENSIONS**

Thin SMA



DIM.	Unit (mm)		Unit (	(inch)	
Dilvi.	Min.	Max.	Min.	Max.	
Α	0.90	1.00	0.035	0.039	
A1	0.00	0.10	0.000	0.004	
b	1.25	1.45	0.049	0.057	
С	0.10	0.22	0.004	0.009	
D	2.50	2.70	0.098	0.106	
Е	5.05	5.35	0.199	0.211	
E1	4.15	4.35	0.163	0.171	
L	0.75	1.20	0.030	0.047	
L1	0.30	0.60	0.012	0.024	

# **SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
Α	2.10	0.083
В	1.40	0.055
С	4.40	0.173
D	3.00	0.118
E	5.80	0.228

# **MARKING DIAGRAM**



P/N = Marking Code ΥW = Date Code F = Factory Code



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