

## 0.8A, 50V - 1000V Fast Recovery Surface Mount Rectifier

### FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Fast switching for high efficiency
- Moisture sensitivity level: level 1, per J-STD-020
- 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: Sub 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: 0.019g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	0.8	A
$V_{RRM}$	50 - 1000	V
$I_{FSM}$	30	A
$T_{J\ MAX}$	150	°C
Package	Sub SMA	
Configuration	Single die	


**HALOGEN  
FREE**


Sub SMA



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

PARAMETER	SYMBOL	RS 1AL	RS 1BL	RS 1DL	RS 1GL	RS 1JL	RS 1KL	RS 1ML	UNIT
Marking code on the device		RAL	RBL	RDL	RGL	RJL	RKL	RML	
Repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Forward current	$I_F$	0.8							A
Peak forward surge 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	$R_{\theta JL}$	32	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	105	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage <sup>(1)</sup>		I <sub>F</sub> = 0.8A, T <sub>J</sub> = 25°C	V <sub>F</sub>	-	1.3	V
Reverse current @ rated V <sub>R</sub> <sup>(2)</sup>		T <sub>J</sub> = 25°C	I <sub>R</sub>	-	5	μA
		T <sub>J</sub> = 125°C		-	50	μA
Junction capacitance		1MHz, V <sub>R</sub> = 4.0V	C <sub>J</sub>	10	-	pF
Reverse recovery time	RS1AL RS1BL RS1DL RS1GL	I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0A, I <sub>rr</sub> = 0.25A	t <sub>rr</sub>	-	150	ns
	RS1JL			-	250	ns
	RS1KL RS1ML			-	500	ns

**Notes:**

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

**ORDERING INFORMATION**

ORDERING CODE <sup>(1)</sup>	PACKAGE	PACKING
RS1xL	Sub SMA	10,000 / Tape & Reel

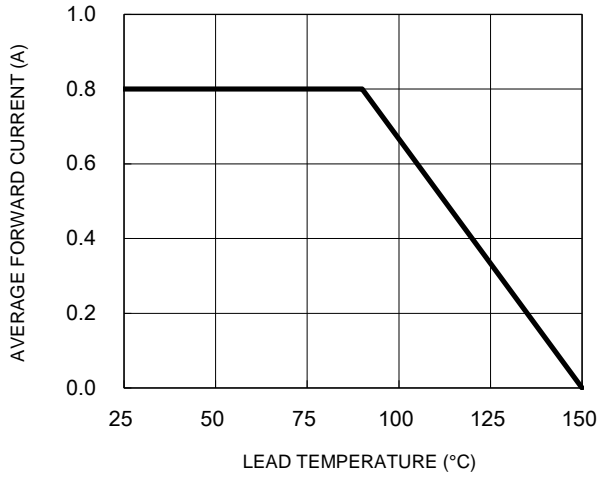
**Notes:**

1. "x" defines voltage from 50V(RS1AL) to 1000V(RS1ML)

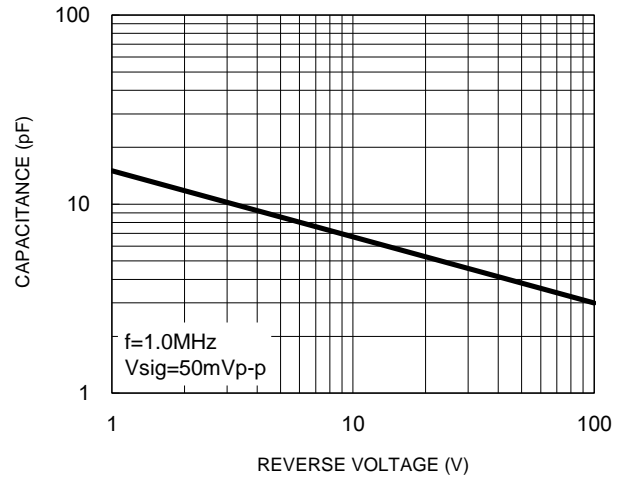
## CHARACTERISTICS CURVES

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

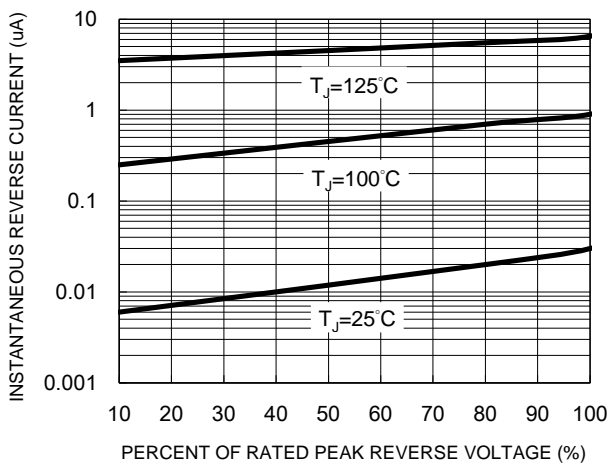
**Fig.1 Forward Current Derating Curve**



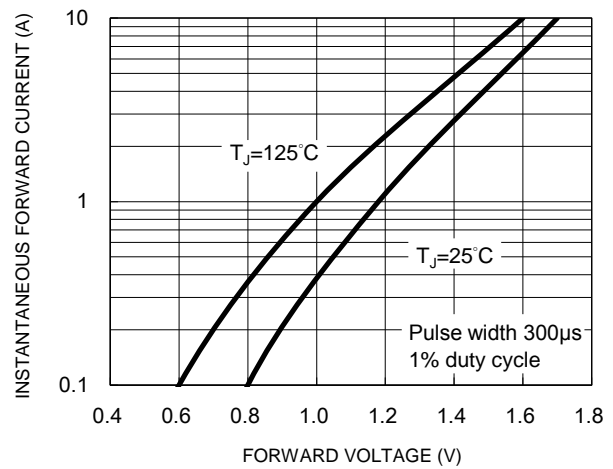
**Fig.2 Typical Junction Capacitance**



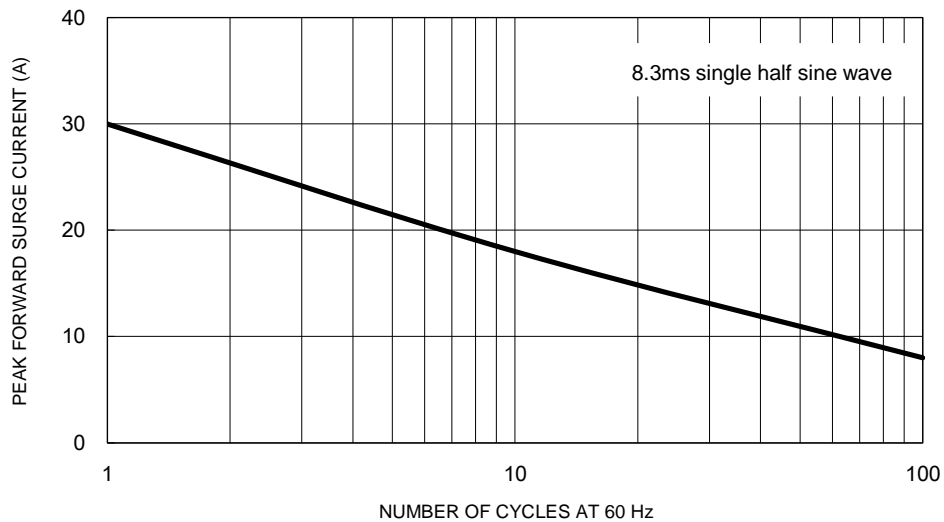
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



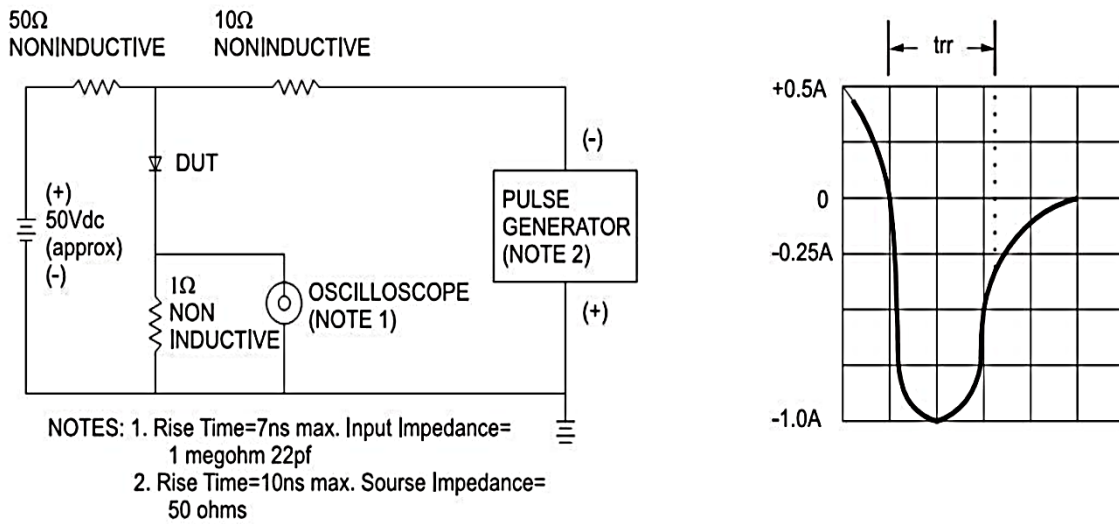
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



## CHARACTERISTICS CURVES

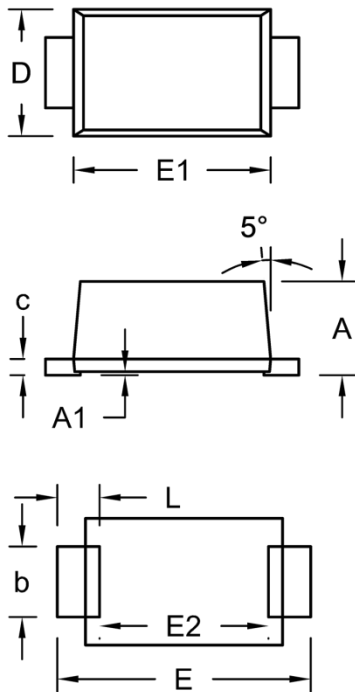
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram**



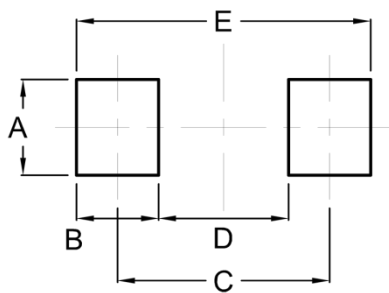
## PACKAGE OUTLINE DIMENSIONS

Sub SMA



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.23	1.43	0.048	0.056
A1	0.00	0.10	0.000	0.004
b	0.80	1.20	0.031	0.047
c	0.16	0.30	0.006	0.012
D	1.70	1.90	0.067	0.075
E	3.40	3.80	0.134	0.150
E1	2.70	2.90	0.106	0.114
E2	2.45	2.60	0.096	0.102
L	0.35	0.85	0.014	0.033

## SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	1.40	0.055
B	1.20	0.047
C	3.10	0.122
D	1.90	0.075
E	4.30	0.169

## MARKING DIAGRAM



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

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