0.5A, 50V - 1000V Fast Recovery Surface Mount Rectifier

FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- High temperature metallurgically bonded construction
- 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	0.5	A
V_{RRM}	50 - 1000	V
I_{FSM}	10	A
$T_{J\ MAX}$	150	°C
Package	Sub SMA	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE



Sub SMA



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	RSF AL	RSF BL	RSF DL	RSF GL	RSF JL	RSF KL	RSF ML	UNIT
Marking code on the device		FAL	FBL	FDL	FGL	FJL	FKL	FML	
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	0.5							A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	10							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-case thermal resistance	$R_{\Theta JC}$	32	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	150	°C/W

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	-	1.3	V
Reverse current @ rated V_R[2]		T_J = 25°C	I_R	-	5	μA
		T_J = 125°C		-	50	μA
Junction capacitance		1MHz, V_R = 4.0V	C_J	4	-	pF
Reverse recovery time	RSFAL RSFBL RSFDL RSFGL	I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	t_{rr}	-	150	ns
	RSFJL			-	250	ns
	RSFKL RSFML			-	500	ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE[1]	PACKAGE	PACKING
RSFxL	Sub SMA	10,000 / Tape & Reel

Notes:

1. "x" defines voltage from 50V(RSFAL) to 1000V(RSFML)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

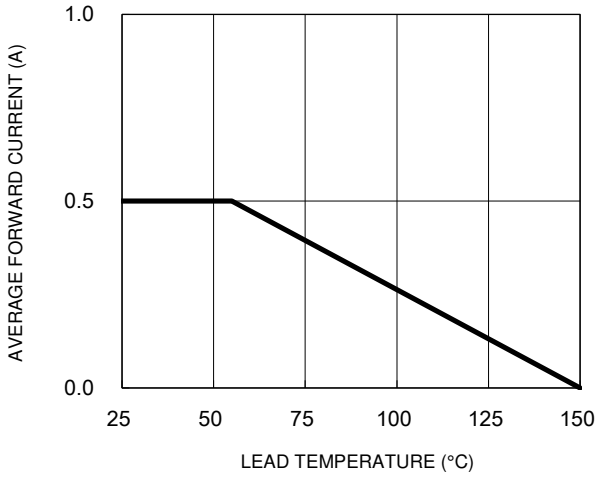


Fig.2 Typical Junction Capacitance

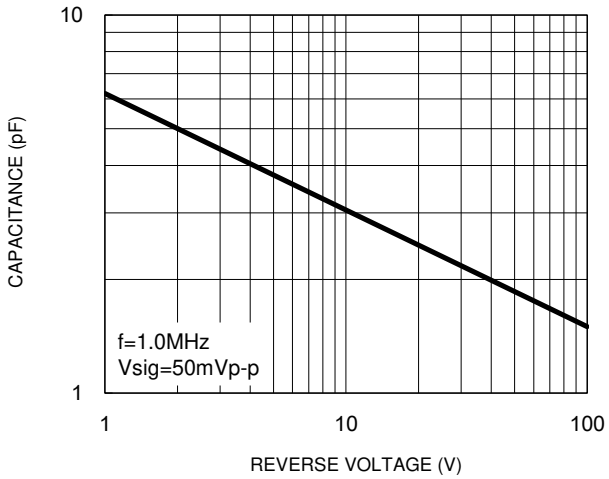


Fig.3 Typical Reverse Characteristics

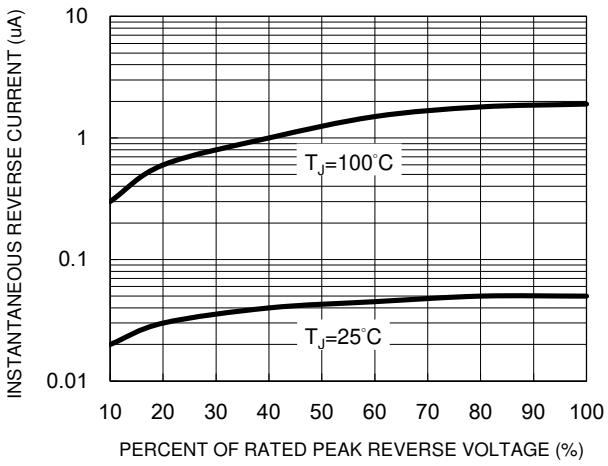


Fig.4 Typical Forward Characteristics

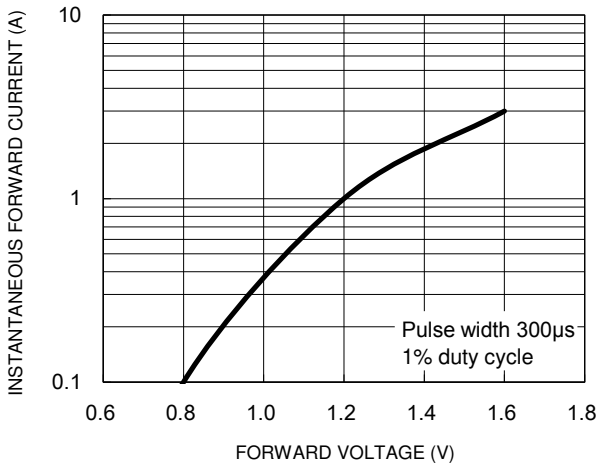
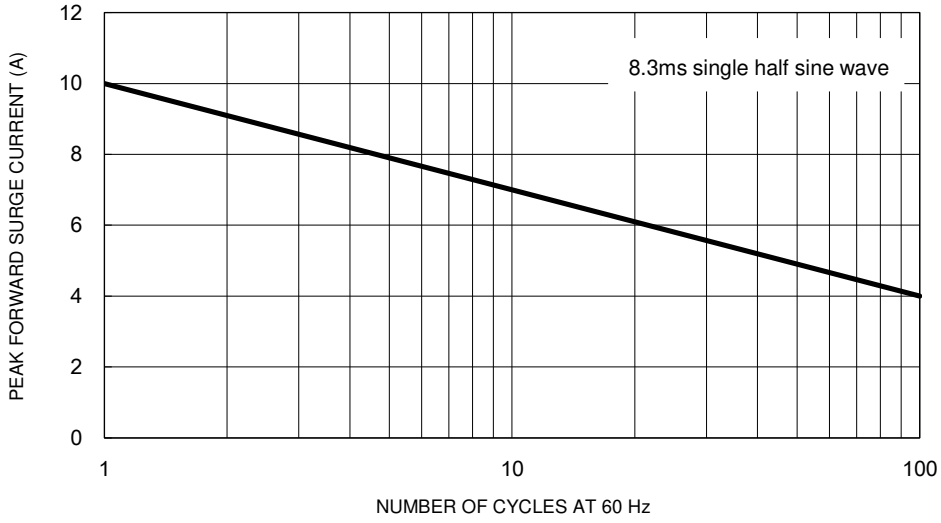


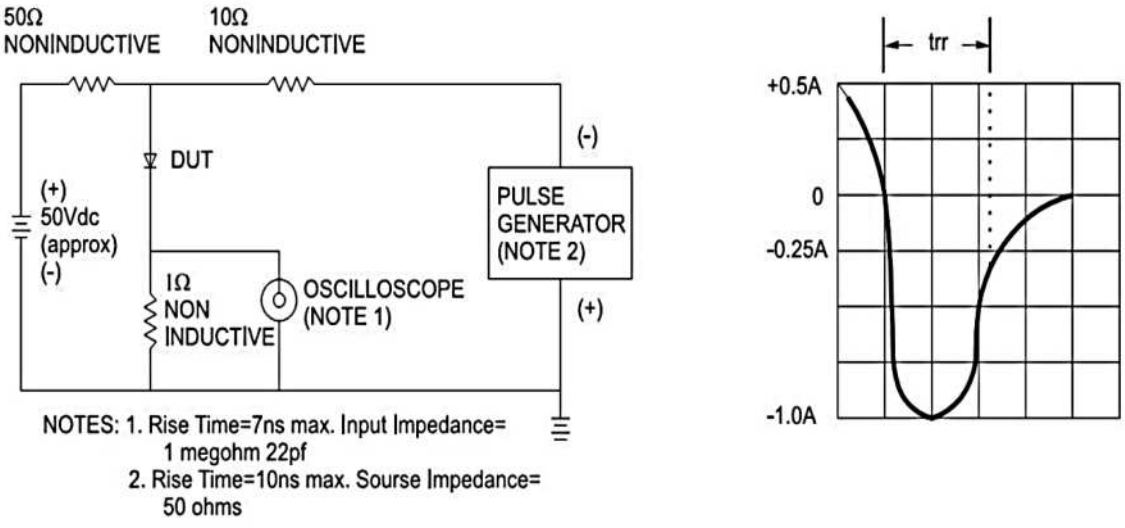
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

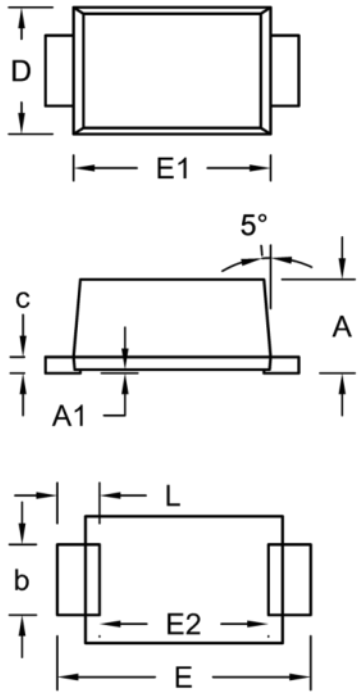
(T_A = 25°C unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram



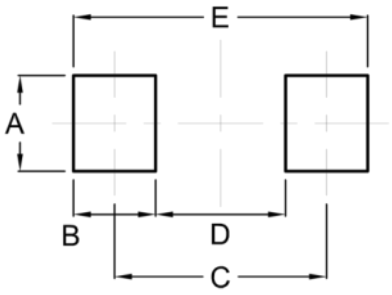
PACKAGE OUTLINE DIMENSIONS

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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