THE DATASHEET OF

RSFAL

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

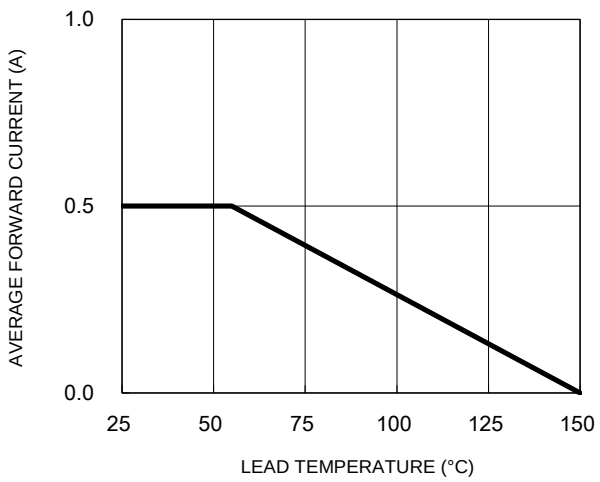


Fig.2 Typical Junction Capacitance

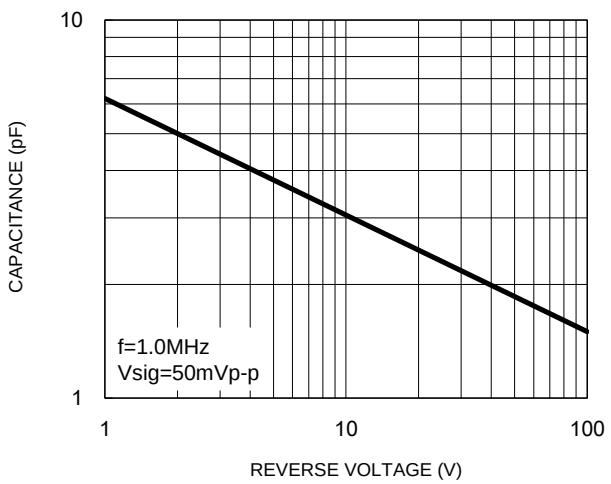


Fig.3 Typical Reverse Characteristics

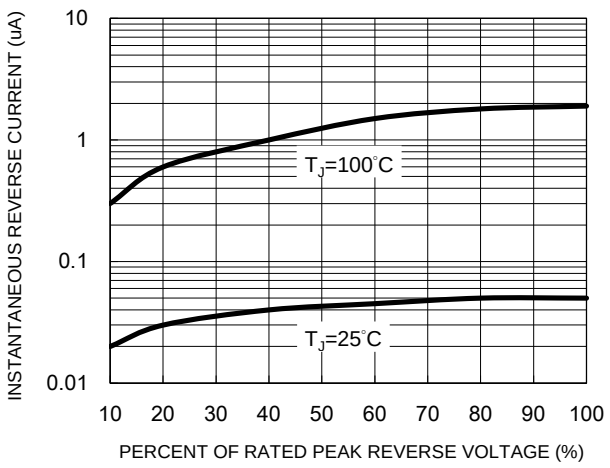


Fig.4 Typical Forward Characteristics

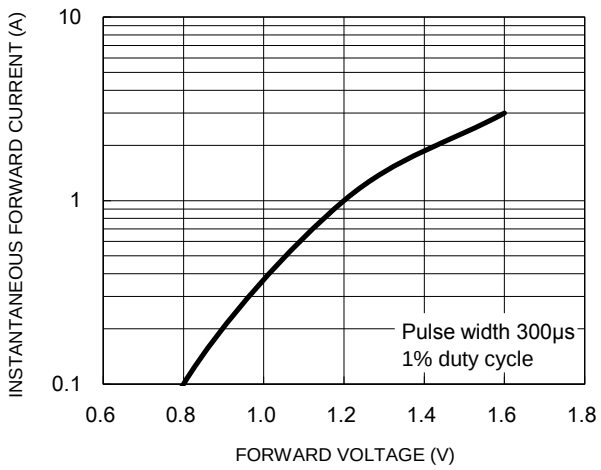
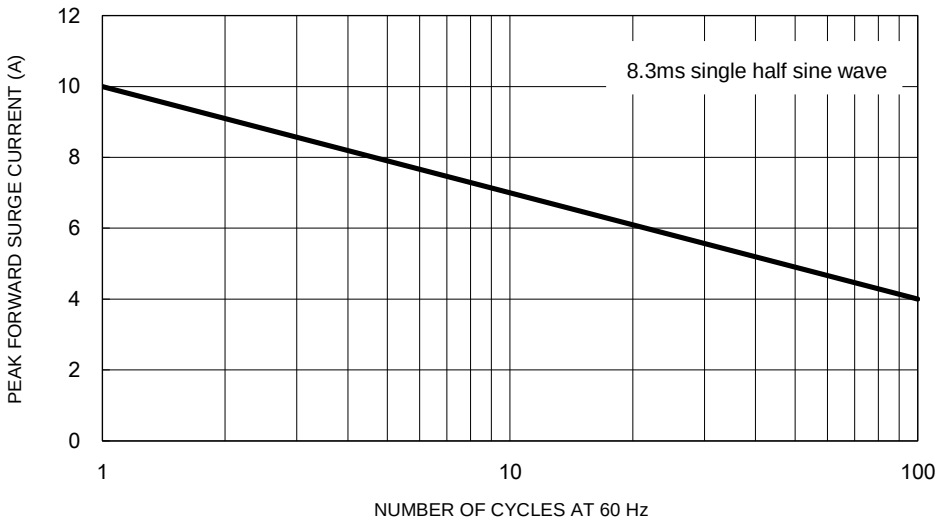


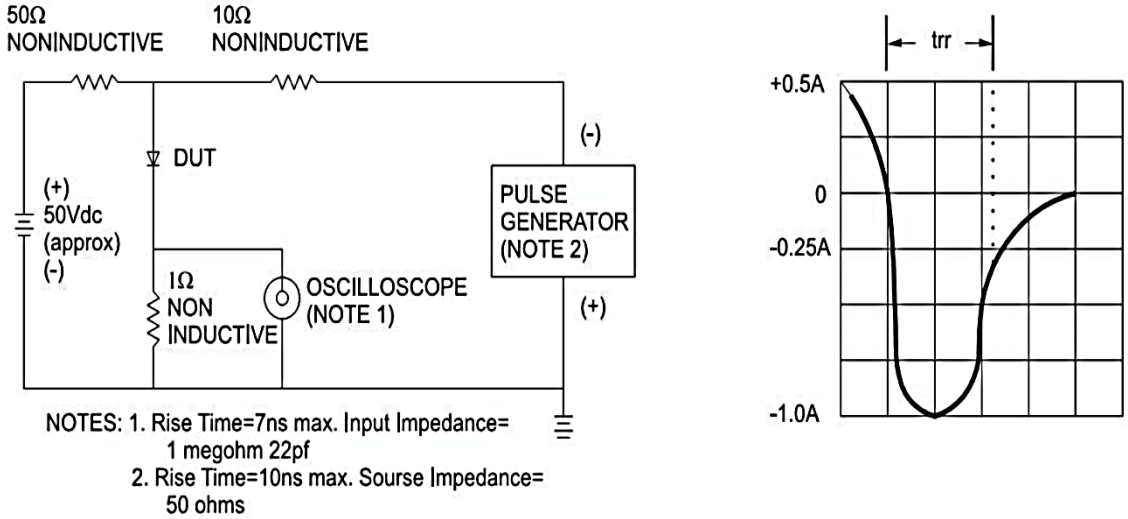
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

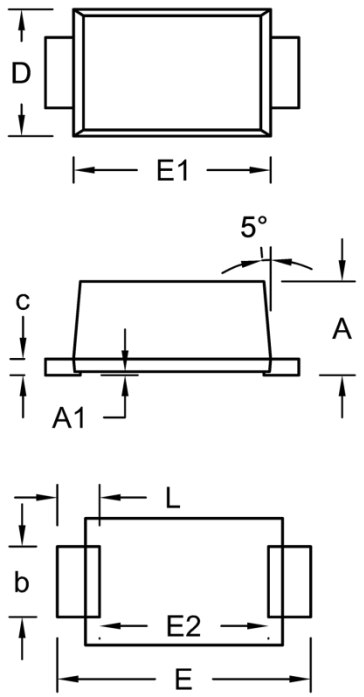
(T_A = 25°C unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram



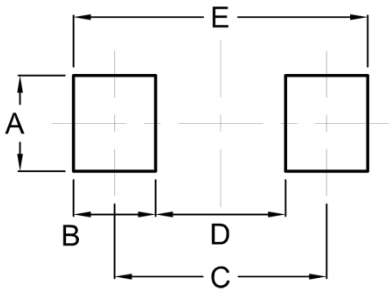
PACKAGE OUTLINE DIMENSIONS

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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