1A, 200V - 600V Surface Mount Super Fast Rectifier

FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Low profile package
- Low power loss, high efficiency
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
$I_{F(AV)}$	1	A
V_{RRM}	200 - 600	V
I_{FSM}	30	A
$T_{J\ MAX}$	150	°C
Package	SOD-123FL	
Configuration	Single dice	

APPLICATIONS

- High frequency rectification
- Freewheeling application
- Switching mode converters and inverters in computer, automotive and telecommunication.

MECHANICAL DATA

- Case: SOD-123FL
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 16 mg (approximately)

SOD-123FL

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)					
PARAMETER	**SYMBOL**	**ES1DFL**	**ES1GFL**	**ES1JFL**	**UNIT**
Marking code on the device		EDF	EGF	EJF	
Repetitive peak reverse voltage	V_{RRM}	200	400	600	V
Reverse voltage, total rms value	V_{RMS}	140	280	420	V
Maximum DC blocking voltage	V_{DC}	200	400	600	
Forward current	$I_{F(AV)}$	1			A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	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	$R_{\Theta JL}$	35	°C/W
Junction to Ambient Thermal Resistance	$R_{\Theta JA}$	85	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage (1)	ES1DFL	I_F = 1A, T_J = 25°C	V_F	-	1.0	V
	ES1GFL			-	1.3	V
	ES1JFL			-	1.7	V
Reverse current @ rated V_R per diode (2)		T_J = 25°C	I_R	-	5	μA
		T_J = 125°C		-	100	μA
Junction capacitance		1 MHz, V_R=4V	C_J	8	-	pF
Reverse recovery time		I_F=0.5A , I_R=1.0A I_{RR}=0.25A	t_{rr}	-	35	nS

Notes:

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

ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
ES1xFL (Note1)	RV	G	SOD-123FL	3,000 / 7" Plastic reel
	RQ		SOD-123FL	10,000 / 13" Paper reel

Notes:

1. "x" defines voltage from 200V (ES1DFL) to 600V (ES1JFL)
2. Whole series with green compound

EXAMPLE

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
ES1JFL RVG	ES1JFL	RV	G	Green compound

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig1. Forward Current Derating Curve

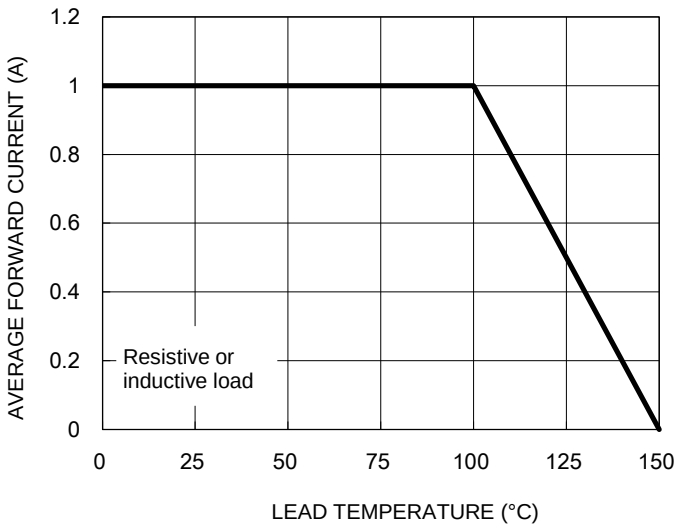


Fig2. Typical Junction Capacitance

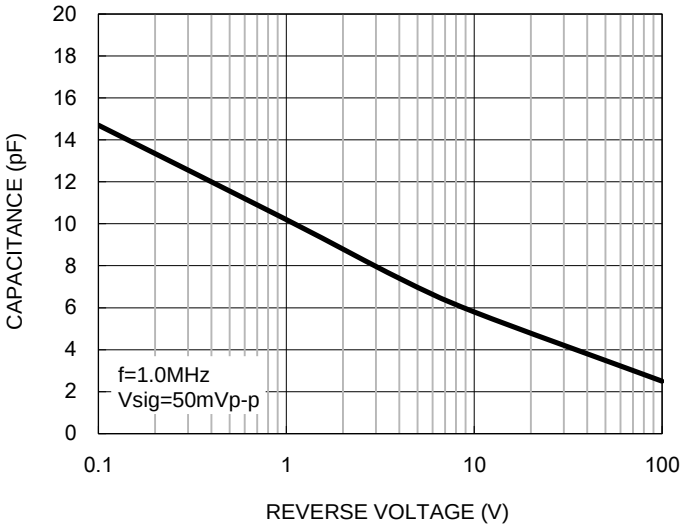


Fig3. Typical Reverse Characteristics

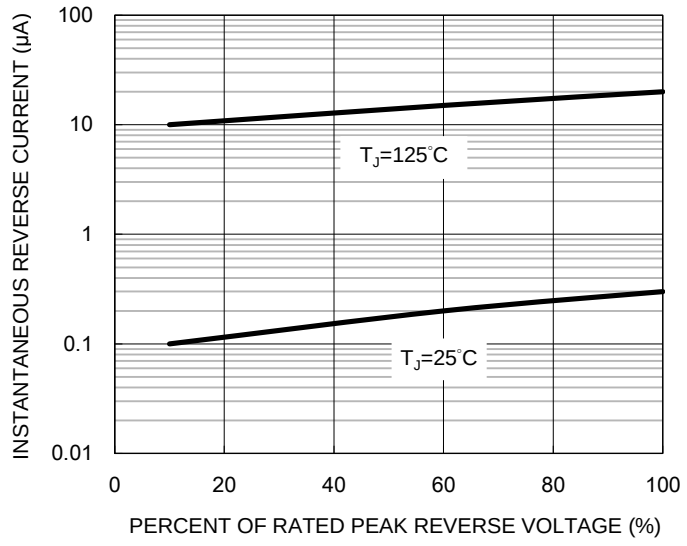
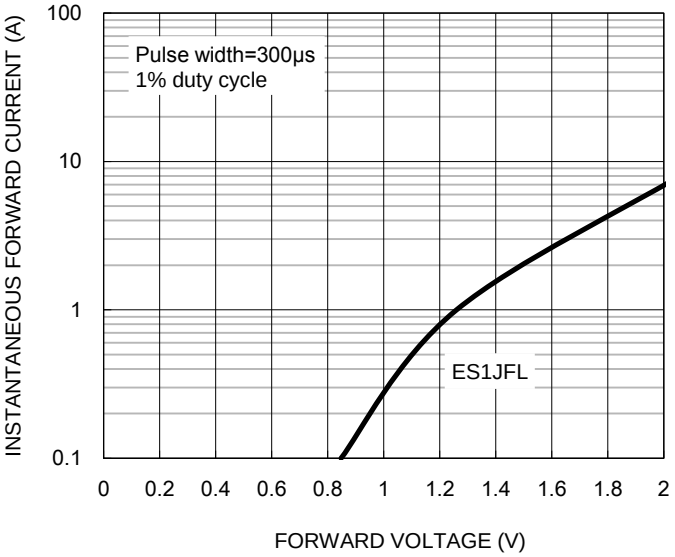


Fig4. Typical Forward Characteristics



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig5. Maximum Non-repetitive Forward Surge Current

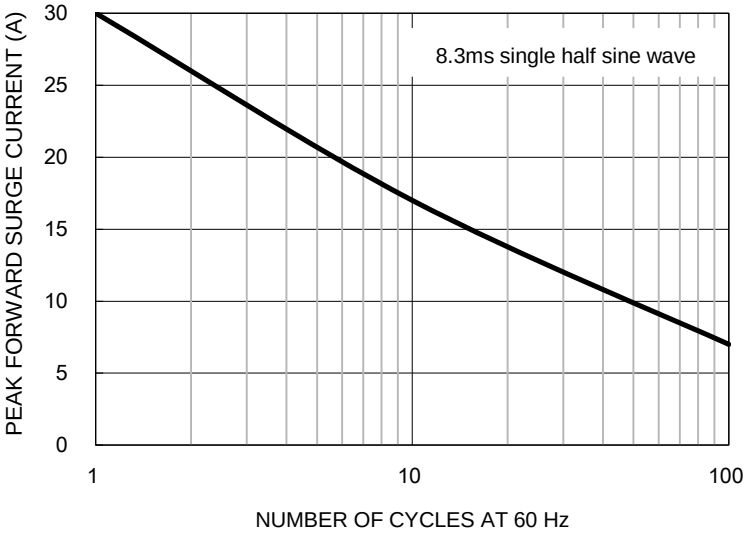
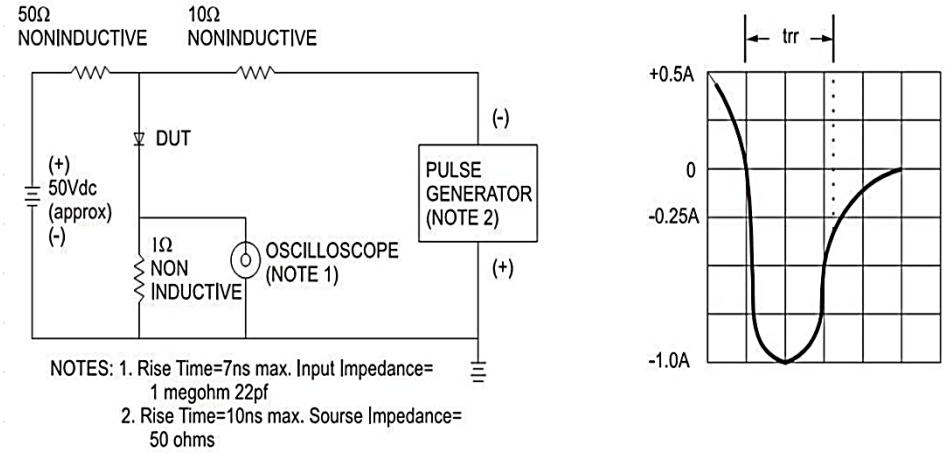
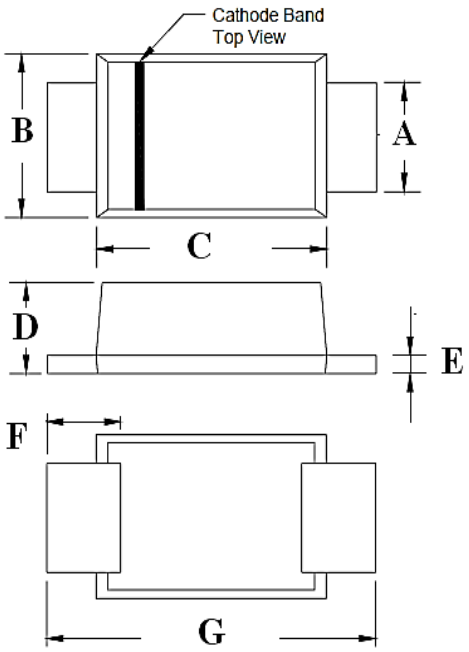


Fig6. Reverse Recovery Time Characteristic And Test Circuit Diagram



PACKAGE OUTLINE DIMENSIONS

SOD-123FL



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	0.80	1.15	0.031	0.045
B	1.70	2.10	0.067	0.083
C	2.60	3.10	0.102	0.122
D	0.88	1.35	0.035	0.053
E	0.10	0.30	0.004	0.012
F	0.30	0.90	0.012	0.035
G	3.45	3.95	0.136	0.156

MARKING DIAGRAM

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

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