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ES1JFL
Surface Mount Ultrafast Rectifier

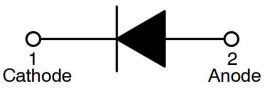
Features

- Fast Switching Speed – Maximum T_{rr} 35 ns
- Ultra Thin Profile – Maximum Height of 1.08 mm
- Glass Passivated Junction
- UL Flammability 94V–0 Classification
- MSL 1
- Green Mold Compound
- These Devices are Pb–Free, Halogen Free Free and are RoHS Compliant

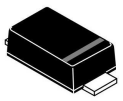
Specifications

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

Symbol	Parameter	Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	600	V
V_{RMS}	RMS Voltage	420	V
V_{DC}	DC Blocking Voltage	600	V
$I_{F(AV)}$	Average Forward Current at T_L = 120°C	1	A
I_{FSM}	Peak Forward Surge Current, 8.3 ms Single Half Sine–Wave at T_L = 25°C	30	A
T_J, T_{STG}	Operating and Storage Temperature Range	−55 to +150	°C



Ultrafast Rectifier



SOD–123FL
CASE 425AD

MARKING DIAGRAMS



Band Indicates Cathode

&Y = Binary Calendar Year Coding Scheme
&Z = Assembly Plant Code
E1J = Specific Device Code
&G = Single Digit Weekly Data Code

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THERMAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Symbol	Characteristic	Value	Unit
$R_{\theta JA}$	Typical Thermal Resistance, Junction−to−Ambient (Note 1)	200	°C/W
$R_{\theta JC}$	Typical Thermal Resistance, Junction−to−Case (Note 2)	30	°C/W

1. Mounted on an FR4 PCB, single−sided copper, mini pad.
2. Mounted on an FR4 PCB, single−sided copper, with 10 cm x 10 cm copper pad area.

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_F	Forward Voltage	I_F = 1 A	−	−	1.7	V
I_R	Reverse Current	V_R = 600 V	−	−	0.5	μA
		V_R = 600 V, T_A = 100°C	−	−	10	
C_J	Capacitance	V_R = 4 V, f = 1.0 MHz	−	7	−	pF
T_{rr}	Reverse Recovery Time	I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 A	−	22.55	35.00	ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping†
ES1JFL	E1J	SOD−123F (Pb−Free/Halogen Free)	3000 / Tape & Reel

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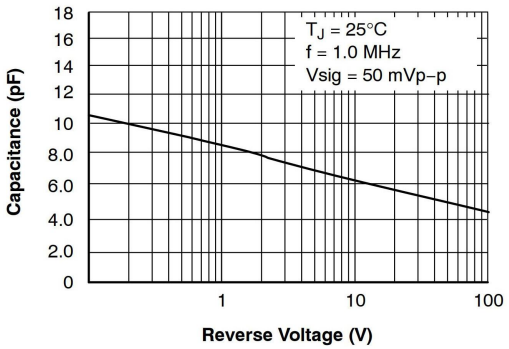


Figure 1. Typical Junction Capacitance

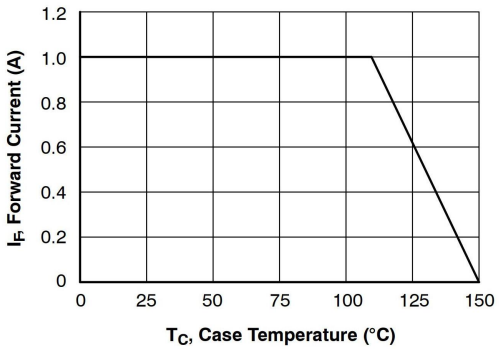


Figure 2. Forward Current Derating Curve

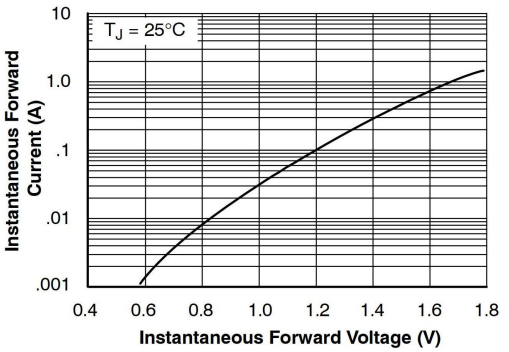


Figure 3. Typical Forward Characteristics

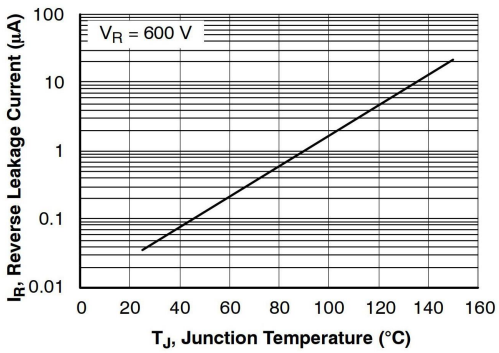


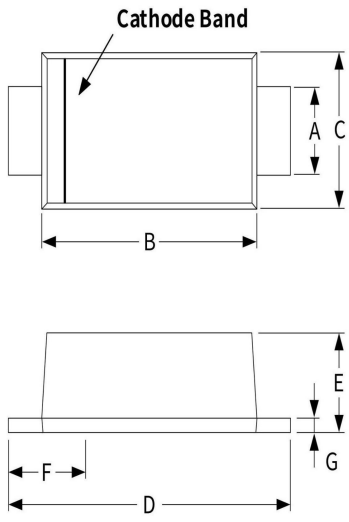
Figure 4. Typical Leakage Current vs. Junction Temperature

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Ordering Information

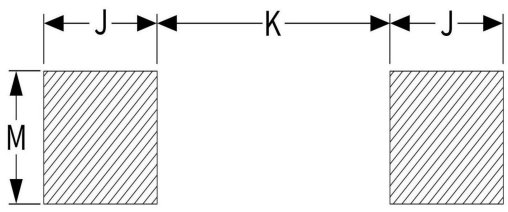
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOD-123FL	R1	0.0169	3000	30000	240000	7''

Package Outline Dimensions (SOD -123FL)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.10	0.035	0.430
B	2.55	2.85	0.100	0.111
C	1.60	1.90	0.063	0.074
D	3.60	3.90	0.031	0.043
E	1.00	1.20	0.031	0.035
F	0.40	0.90	0.047	0.055
G	0.10	0.25	0.003	0.007

Suggested Pad Lavout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	1.00	-	0.040	-
K	-	1.90	-	0.074
M	1.50	-	0.059	-