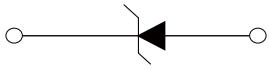
RS1000FLQ-RS1010FLQ

Ultra-Fast Recovery Rectifier Diode

FEATURES

- Ideal For Automated Placement
- Glass Passivated Chip Junction
- High Surge Current Capability
- Fast Switching For Fast Recovery
- Meet AEC-Q101 Requirements

SOD-123FL



Schematic Symbol

APPLICATIONS

- For Use In Fast Switching Rectification Of Power Supply, Inverters, Converters, And Freewheeling Diodes For Consumer, And Telecommunication.

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS AND CHARACTERISTICS (T_A=25°C)

Parameter		Symbol	RS1000 FLQ	RS1001 FLQ	RS1002 FLQ	RS1004 FLQ	RS1006 FLQ	RS1008 FLQ	RS1010 FLQ	Unit
Marking			R1AQ	R1BQ	R1DQ	R1GQ	R1JQ	R1KQ	R1MQ	
Maximum repetitive peak reverse voltage		V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage		V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage		V_{DC}	50	100	200	400	600	800	1000	V
Average Rectified Output Current @60Hz sine wave, Resistance load, TL (FIG.1)		I_O	1.0							A
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, Tj=25°C		I_{FSM}	30							A
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25°C		I_{FSM}	60							A
Maximum instantaneous forward voltage I_{FM}=1.0A		V_F	1.3							V
Maximum DC reverse current at rated DC blocking voltage	T_J=25°C	I_R	5							μA
	T_J=125°C	I_R	100							μA
Typical junction capacitance Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C		C_J	11				6			pF
Maximum reverse recovery time I_F=0.5A, I_R=1.0A, I_{rr}=0.25A		t_{rr}	150				250	500		ns
Current squared time @1ms≤t≤8.3ms Tj=25°C		I^2t	3.735							A^2s
Typical Thermal Resistance (1)		$R_{\theta J-A}$	68							°C/W
		$R_{\theta J-L}$	20							°C/W
		$R_{\theta J-C}$	18							°C/W
Operating junction and storage temperature range		T_J,T_{STG}	-55 to +150							°C

Note:
(1) Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B with 3mm*3mm copper pad areas

CHARACTERISTIC CURVES

Fig.1 Io-TL Curve

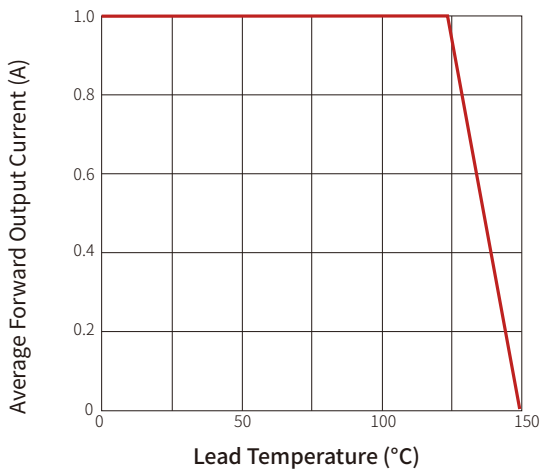


Fig.2 Forward Surge Current Capability

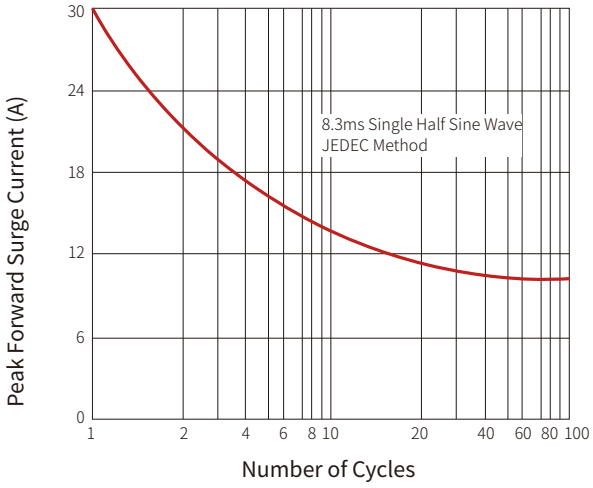


Fig.3 Typical Forward Voltage

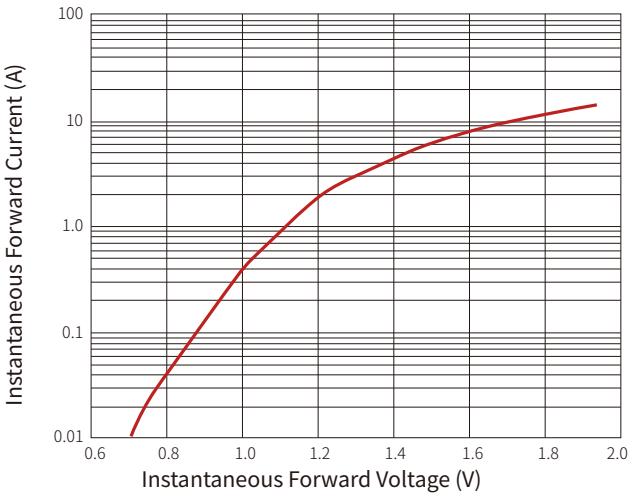
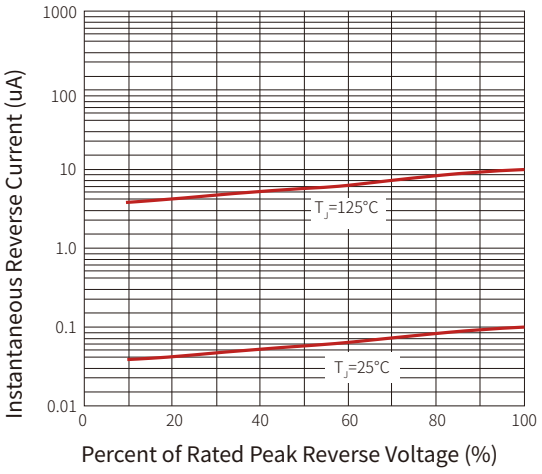
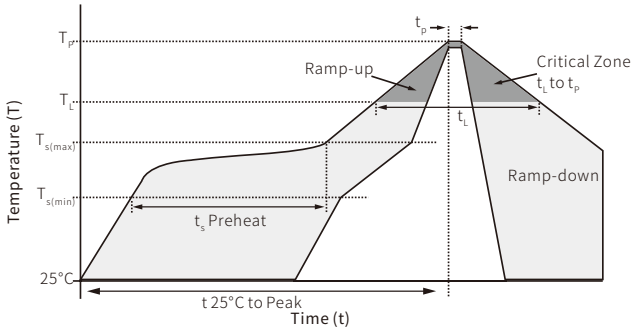


Fig.4 Typical Reverse Characteristics

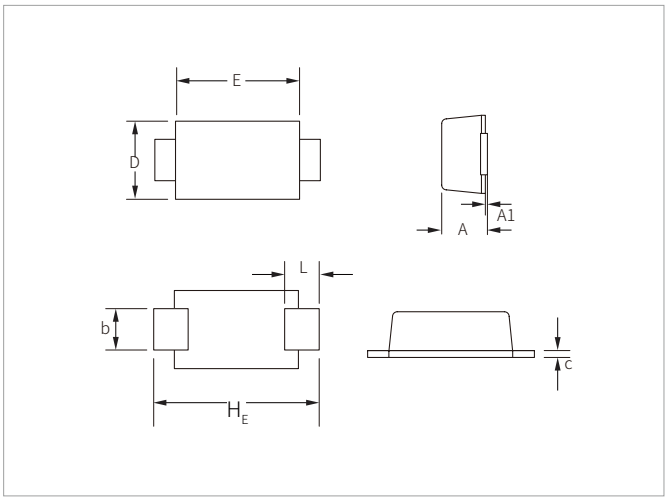


SOLDERING PARAMETERS

Reflow Condition		Lead–free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
	$T_{S(max)}$ to T_L - Ramp-up Rate	3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes max.
Do not exceed		260°C

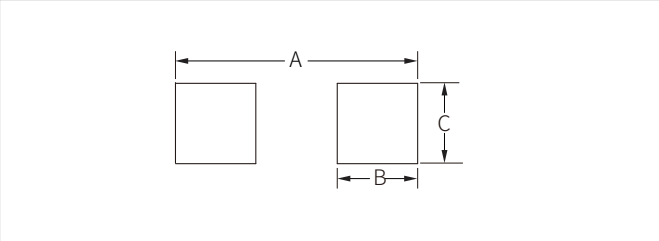


SOD-123FL PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.95	1.45	0.037	0.057
A1	0.00	0.10	0.000	0.004
b	0.70	1.20	0.028	0.047
c	0.05	0.30	0.002	0.012
D	1.50	2.00	0.059	0.079
E	2.50	2.90	0.098	0.114
L	0.35	0.90	0.014	0.035
H_E	3.40	3.90	0.134	0.154

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
A	4.20	0.165
B	1.50	0.059
C	1.20	0.047

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
RS1000FLQ-RS1010FLQ	SOD-123FL	3000PCS	7”

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