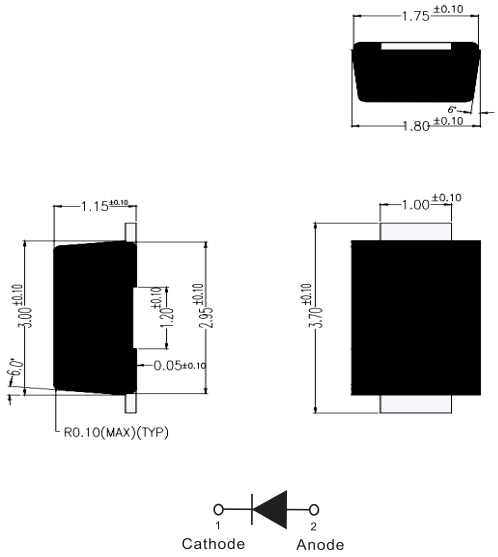
Surface Mount Fast Recovery Rectifier Diode

Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Fast switching for fast recovery
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

SOD-123FL Unit : inch(mm)



Mechanical Data

- **Package**: SOD-123FL
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter		Symbol	RS2D FL	RS2G FL	RS2J FL	RS2K FL	RS2M FL	Unit
Repetitive peak reverse voltage		V_{RRM}	200	400	600	800	1000	V
Reverse voltage, total rms value		$V_{R(RMS)}$	140	280	420	560	700	V
DC blocking voltage		V_{DC}	200	400	600	800	1000	V
Forward current		I_F	2					A
Surge peak forward current single half sine-wave superimposed on rated load	8.3 ms at T_A= 25°C	I_{FSM}	40					A
	1.0 ms at T_A= 25°C		100					A
Junction temperature		T_J	-55 to +150					°C
Storage temperature		T_{STG}	-55 to +150					°C

Thermal Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Typ	Unit
Junction-to-lead thermal resistance	$R_{\Theta JL}$	81	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	116	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	69	°C/W

Note: Units mounted on PCB (5mm x 5mm Cu pad test board)

Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter		Conditions	Symbol	Typ	Max	Unit
Forward voltage (1)	RS2DFL to RS2JFL	I_F = 1A, T_J = 25°C	V_F	0.86	-	V
		I_F = 2A, T_J = 25°C		0.94	1.3	V
		I_F = 1A, T_J = 125°C		0.75	-	V
		I_F = 2A, T_J = 125°C		0.84	0.99	V
	RS2KFL to RS2MFL	I_F = 1A, T_J = 25°C	V_F	0.98	-	V
		I_F = 2A, T_J = 25°C		1.09	1.3	V
		I_F = 1A, T_J = 125°C		0.89	-	V
		I_F = 2A, T_J = 125°C		1.02	1.20	V
Reverse current @ rated V_R (2)		T_J = 25°C	I_R	-	5	μA
		T_J = 125°C		-	150	μA
Reverse recovery time	RS2DFL to RS2JFL	I_F=0.5A,I_R=1.0A, Irr=0.25A	t_{rr}	-	250	ns
	RS2KFL to RS2MFL			-	500	ns
Junction capacitance	RS2DFL to RS2JFL	1 MHz, V_R=4.0V	C_J	16	-	pF
	RS2KFL to RS2MFL			9	-	pF

Notes:

(1) Pulse test with PW=0.3 ms

(2) Pulse test with PW=30 ms

Characteristics Curves

Fig.1 Forward Current Derating Curve

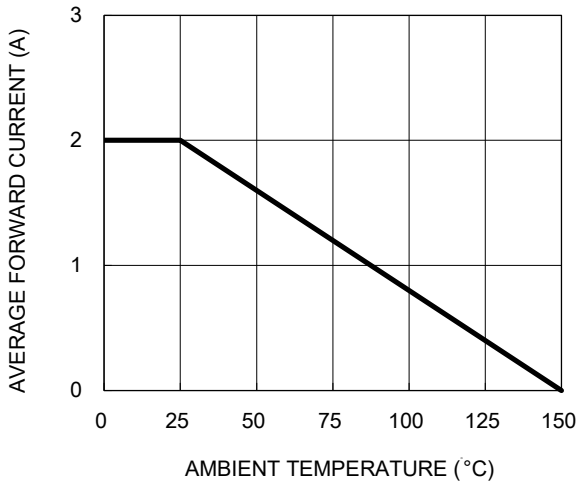


Fig.2 Typical Junction Capacitance

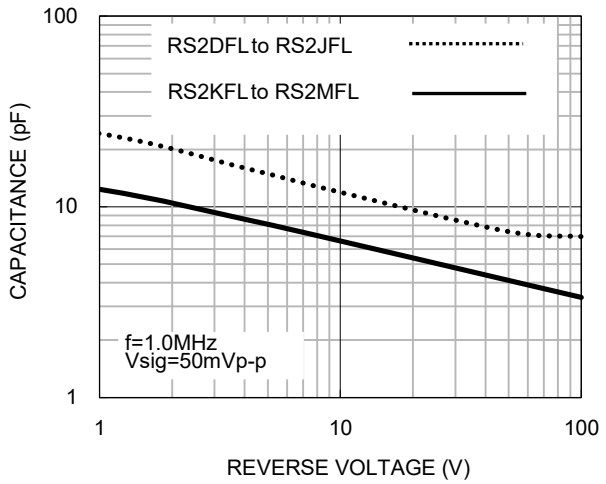


Fig.3 Typical Reverse Characteristics

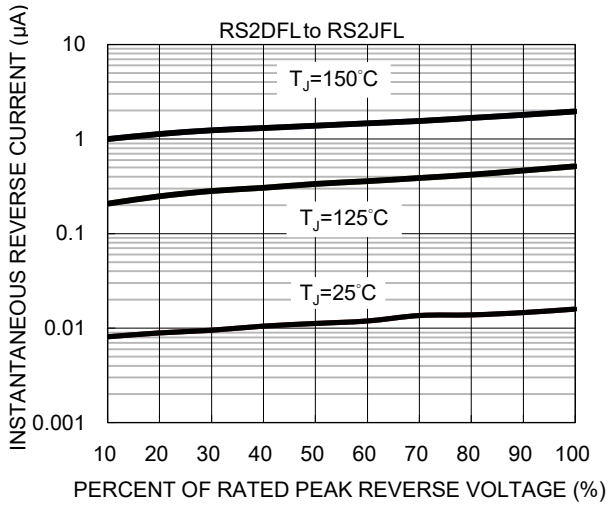


Fig.4 Typical Forward Characteristics

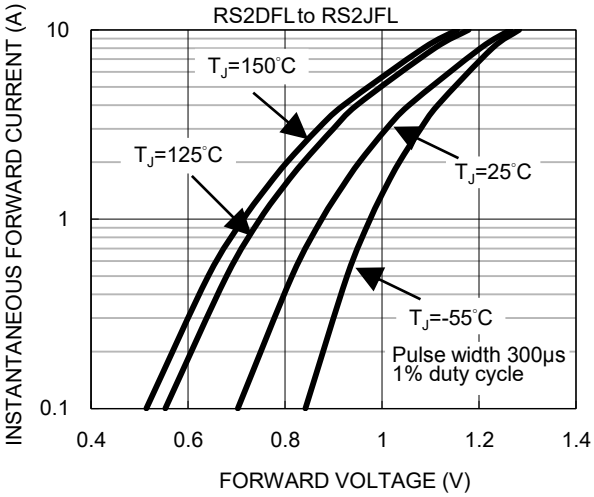


Fig.5 Typical Reverse Characteristics

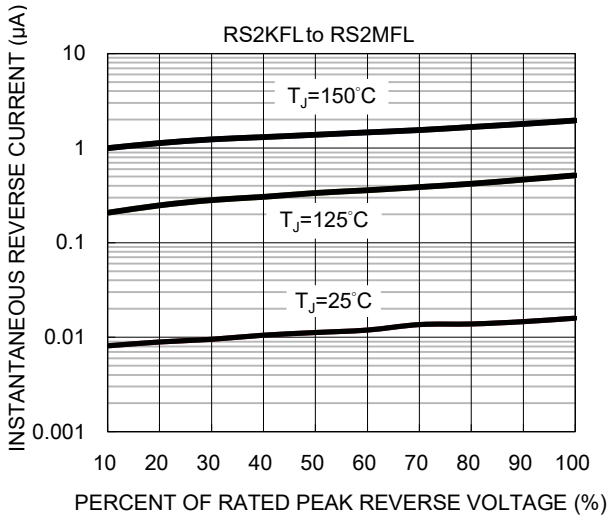


Fig.6 Typical Forward Characteristics

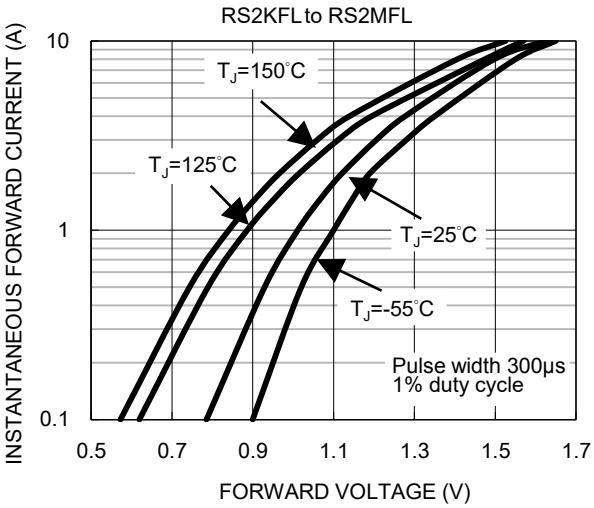


Fig.7 Typical Transient Thermal Impedance