

2A, 200V-1000V Fast Recovery Surface Mount Rectifier

FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Low reverse leakage
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

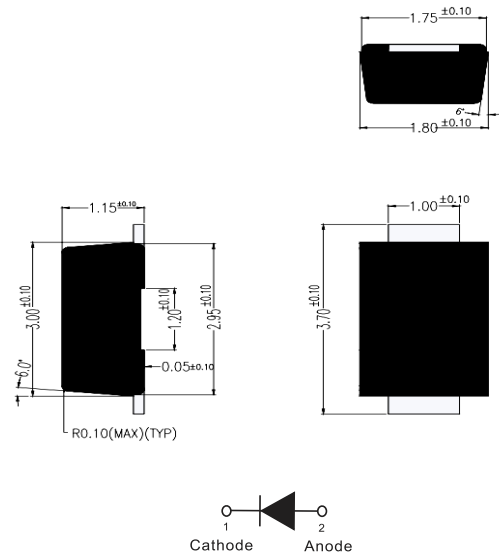
- Switch Mode Power Supply
- Inverters and Converters
- Free Wheeling diodes

MECHANICAL DATA

- Case: SOD-123FL
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.016 g (approximately)

SOD-123FL

Unit : inch(mm)



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	RS 2002 FL	RS 2004 FL	RS 2006 FL	RS 2008 FL	RS 2010 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 $T_A = 25^\circ\text{C}$	40					A
	1.0 ms at $T_A = 25^\circ\text{C}$	100					A
Junction temperature	T_J	-55 to +150					$^\circ\text{C}$
Storage temperature	T_{STG}	-55 to +150					$^\circ\text{C}$

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	81	$^\circ\text{C/W}$
Junction-to-ambient thermal resistance	$R_{\theta JA}$	116	$^\circ\text{C/W}$
Junction-to-case thermal resistance	$R_{\theta JC}$	69	$^\circ\text{C/W}$

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

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	RS2002FL to RS2006FL	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	V_F	0.86	-	V
		$I_F = 2\text{A}, T_J = 25^\circ\text{C}$		0.94	1.3	V
		$I_F = 1\text{A}, T_J = 125^\circ\text{C}$		0.75	-	V
		$I_F = 2\text{A}, T_J = 125^\circ\text{C}$		0.84	0.99	V
	RS2008FL to RS2010FL	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	V_F	0.98	-	V
		$I_F = 2\text{A}, T_J = 25^\circ\text{C}$		1.09	1.3	V
		$I_F = 1\text{A}, T_J = 125^\circ\text{C}$		0.89	-	V
		$I_F = 2\text{A}, T_J = 125^\circ\text{C}$		1.02	1.20	V
Reverse current @ rated V_R ⁽²⁾		$T_J = 25^\circ\text{C}$	I_R	-	5	μA
		$T_J = 125^\circ\text{C}$		-	150	μA
Reverse recovery time	RS2002FL to RS2006FL	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	t_{rr}	-	250	ns
	RS2008FL to RS2010FL			-	500	ns
Junction capacitance	RS2002FL to RS2006FL	1 MHz, $V_R = 4.0\text{V}$	C_J	16	-	pF
	RS2008FL to RS2010FL			9	-	pF

Notes:

- (1) Pulse test with $PW = 0.3\text{ ms}$
- (2) Pulse test with $PW = 30\text{ ms}$

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

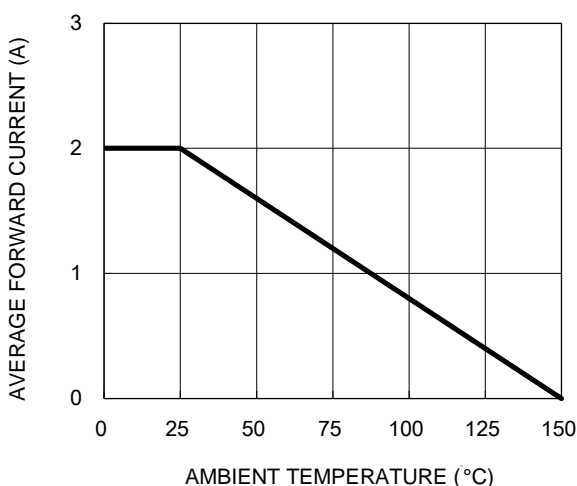


Fig.2 Typical Junction Capacitance

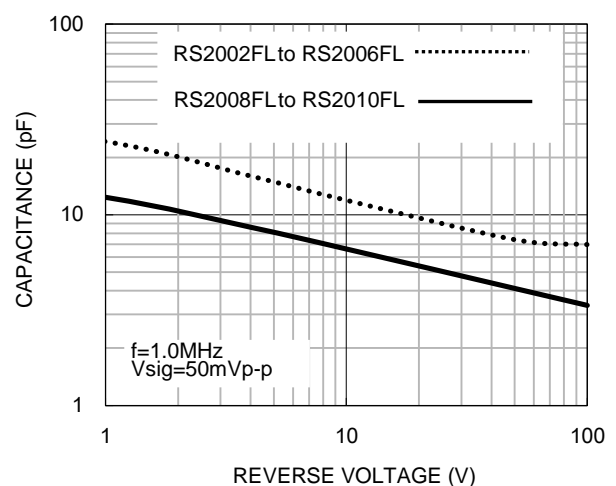




Fig.3 Typical Reverse Characteristics

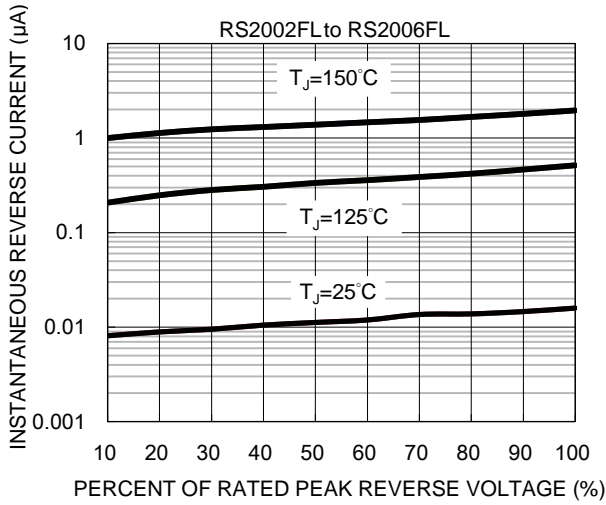


Fig.4 Typical Forward Characteristics

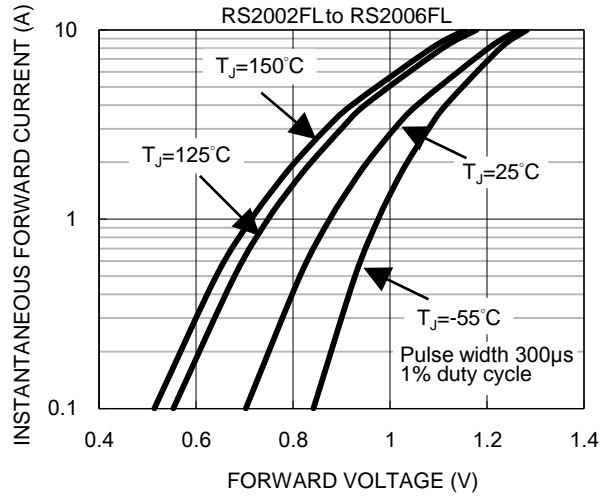


Fig.5 Typical Reverse Characteristics

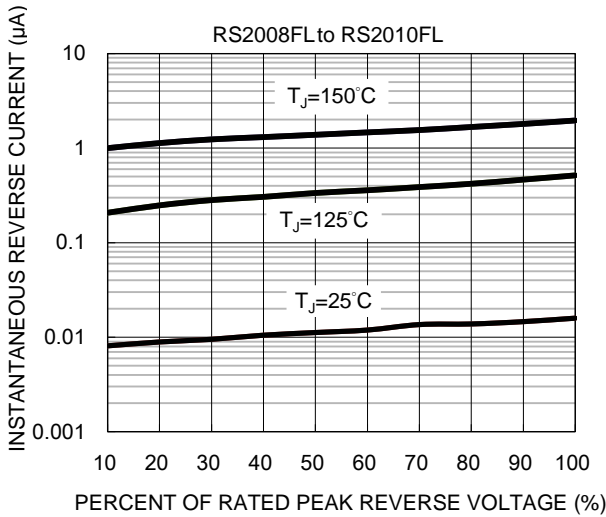


Fig.6 Typical Forward Characteristics

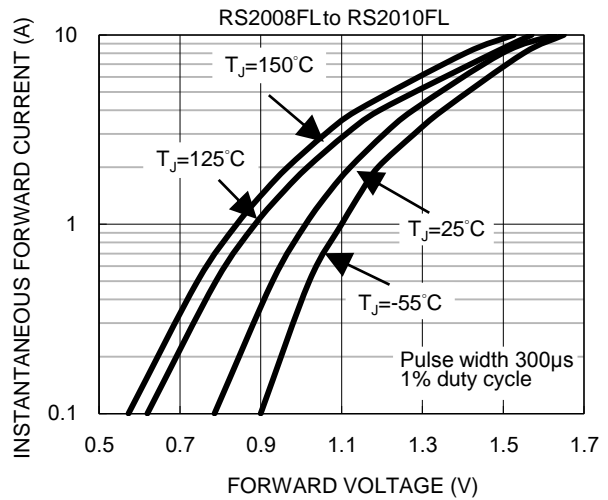


Fig.7 Typical Transient Thermal Impedance

