

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

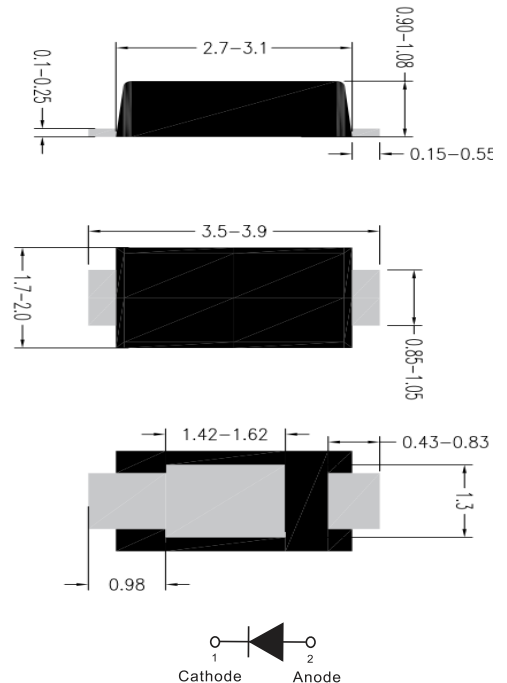
- Switch Mode Power Supply
- Inverters and Converters
- Free Wheeling diodes

MECHANICAL DATA

- Case: SOD-123HE
- 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-123HE

Unit : inch(mm)



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

PARAMETER	SYMBOL	RS	RS	RS	RS	RS	UNIT	
		2002 HE	2004 HE	2006 HE	2008 HE	2010 HE		
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	I_{FSM}	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	$R_{\theta JL}$	15	$^\circ\text{C/W}$
Junction-to-ambient thermal resistance	$R_{\theta JA}$	90	$^\circ\text{C/W}$
Junction-to-case thermal resistance	$R_{\theta JC}$	45	$^\circ\text{C/W}$

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⁾	RS2002HE to RS2006HE	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	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
	RS2008HE to RS2010HE	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$	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	RS2002HE to RS2006HE	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	t_{rr}	-	250	ns
	RS2008HE to RS2010HE			-	500	ns
Junction capacitance	RS2002HE to RS2006HE	1 MHz, $V_R = 4.0\text{V}$	C_J	16	-	pF
	RS2008HE to RS2010HE			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

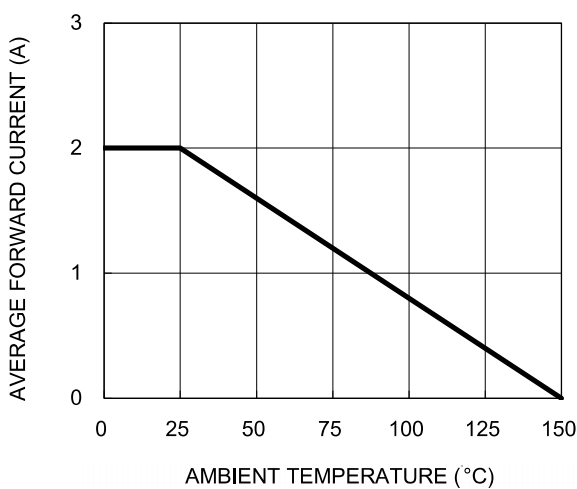


Fig.2 Typical Junction Capacitance

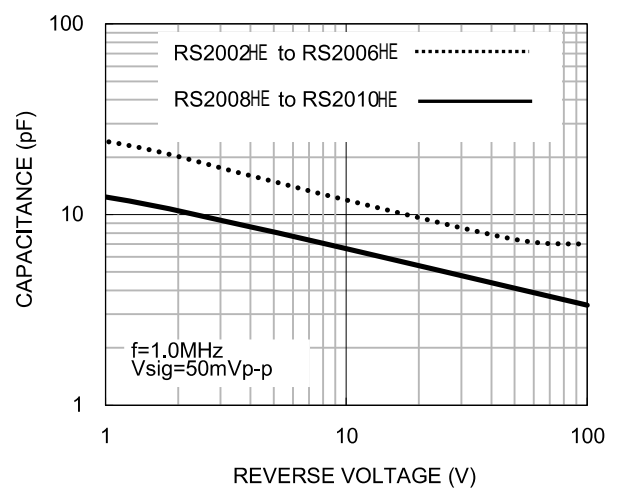


Fig.3 Typical Reverse Characteristics

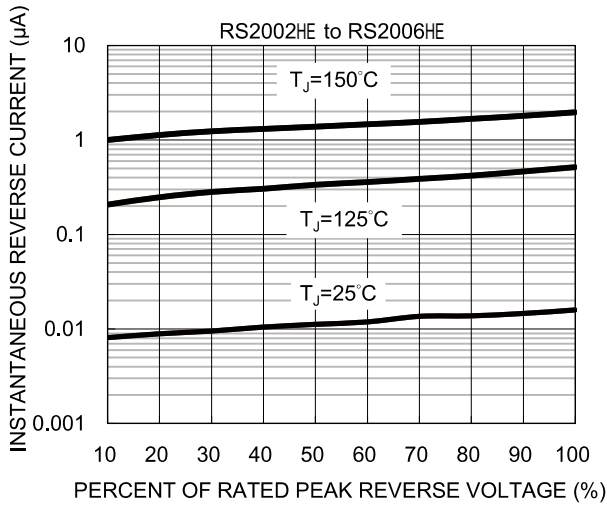


Fig.4 Typical Forward Characteristics

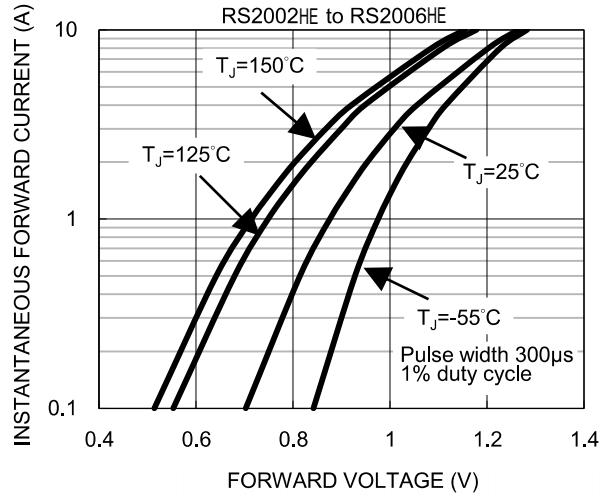


Fig.5 Typical Reverse Characteristics

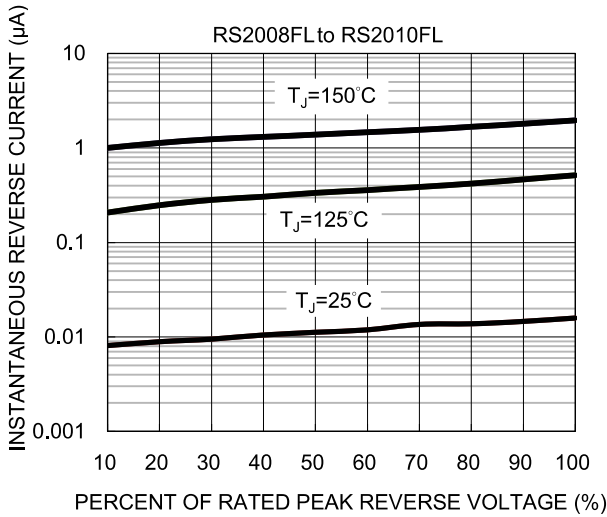


Fig.6 Typical Forward Characteristics

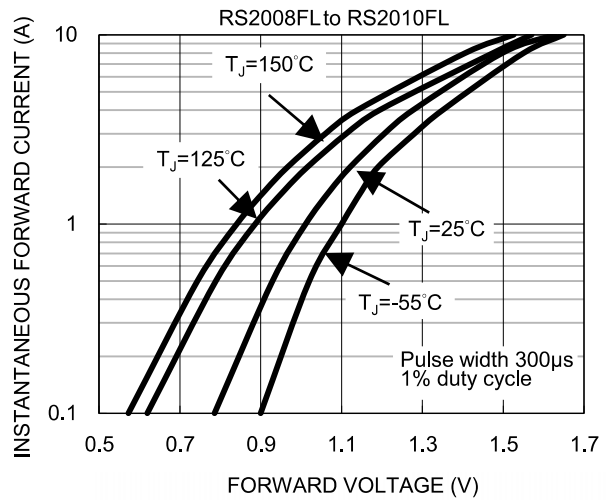


Fig.7 Typical Transient Thermal Impedance

