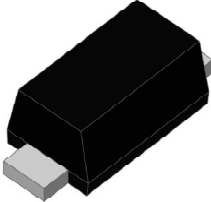





1.0 Amp. Surface Mount High Temperature Schottky Barrier Rectifier

<p>SOD123W</p> 	<p>Voltage 40 V</p> <p>Current 1.0 A</p>
	<p>FEATURE</p> <ul style="list-style-type: none"> Low profile package Ideal for automated placement Guardring for overvoltage protection Low power losses, high efficiency Low forward voltage drop High forward surge current capability Solder dip 260 °C, 10s AEC-Q101 qualified Component in accordance to RoHS 2011/65/EU and WEEE 2002/96/EC Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C Very low leakage current <div style="text-align: right;">    <p>RoHS COMPLIANT</p> </div>
	<p>MECHANICAL DATA</p> <ul style="list-style-type: none"> Case: SOD123W. Epoxy meets UL 94V-0 flammability rating. Polarity: Color band denotes cathode end. Terminals: Matte tin plated leads, solderable per MIL-STD-750 Method 2026, J-STD-002 and JESD22-B102. Consumer grade, meets JESD 201 class 1A whisker test. HE3 suffix for high reliability grade, meets JESD 201 class 2 whisker test.
	<p>TYPICAL APPLICATIONS</p> <p>Used in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.</p>

Maximum Ratings and Electrical Characteristics at 25 °C

Marking Code		SK14W
		3W
V_{RRM}	Maximum Recurrent Peak Reverse Voltage (V)	40
V_{RMS}	Maximum RMS Voltage (V)	28
V_{DC}	Maximum DC Blocking Voltage (V)	40
$I_F (VA)$	Forward Current at T_L (See graphic)	1 A
I_{FSM}	8,3 ms. Peak Forward Surge Current (Jedec Method)	50 A
V_F	Maximum Instantaneous Forward Voltage @ $I_F = 1 A$ (Note 1)	0.5 V
I_R	Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 2)	50 μA
T_{RR}	Reverse Recovery Time ($I_F = 0.5A$, $I_R = 0.5A$, $I_R (meas) = 0.1A$)	<10 ns
V_{FRM}	Peak Forward Recovery Voltage ($I_F = 0.5A$, $dI_F / dI_t = 20A/\mu s$)	0.55 V
T_i, T_{stg}	Operation junction and Storage Temperature Range	- 55 to + 175 °C
T_j	Junction Temperature in AC mode	150 °C
T_j	Junction Temperature in DC forward current	175 °C
C_j	Typical Junction Capacitance (1.0V, 1 MHz)	110 pF
$R_{th(j-a)}$	Maximum Thermal Resistance (Note 3)	220 °C/W
	Junction to Ambient (Note 4)	130 °C/W
$R_{th(j-l)}$	Maximum Thermal Resistance Junction to Lead	15 °C/W

Notes: 1. Pulse Test: 300 μ s Pulse Width, 1% Duty Cycle

3. Device mounted on an FR4 PCB, standard footprint

2. Pulse test: Pulse Width \leq 40ms

4. Device mounted on an FR4 PCB, mounting pad for cathode 1cm²

1.0 Amp. Surface Mount High Temperature Schottky Barrier Rectifier

Static Electrical Characteristics

Symbol	Parameter	Test Conditions	Typ.	Max.	Unit
V_F	Max. Instantaneous Forward Voltage	$T_j = -40\text{ }^\circ\text{C}$ $I_F = 1.0\text{ A}$	0.53	0.58	V
		$T_j = 25\text{ }^\circ\text{C}$ $I_F = 1.0\text{ A}$	0.47	0.50	
		$T_j = 125\text{ }^\circ\text{C}$ $I_F = 1.0\text{ A}$	0.38	0.42	
		$T_j = 150\text{ }^\circ\text{C}$ $I_F = 1.0\text{ A}$	0.36	0.40	
		$T_j = 175\text{ }^\circ\text{C}$ $I_F = 1.0\text{ A}$	0.34	0.39	
I_R	Max. DC Reverse Leakage Current	$T_j = 25\text{ }^\circ\text{C}$ $V_R = V_{RR}$	5	50	μA
		$T_j = 125\text{ }^\circ\text{C}$ $V_R = V_{RR}$	1.6	10	mA
		$T_j = 150\text{ }^\circ\text{C}$ $V_R = V_{RR}$	6.5	20	

TEMP.	IR typ (μA)*				
	5V	10V	20V	30V	40V
-40 $^\circ\text{C}$	0,001	0,001	0,001	0,004	0,050
-10 $^\circ\text{C}$	0,010	0,012	0,025	0,055	0,250
25 $^\circ\text{C}$	0,45	0,60	1,10	2,20	5,00
85 $^\circ\text{C}$	25	30	50	100	200
125 $^\circ\text{C}$	250	325	500	800	1600
150 $^\circ\text{C}$	1000	1500	2000	3500	6500

TEMP.	VF typ (V)*		
	0,1A	0,5A	1A
-40 $^\circ\text{C}$	0,45	0,50	0,53
-10 $^\circ\text{C}$	0,41	0,47	0,50
25 $^\circ\text{C}$	0,37	0,43	0,47
85 $^\circ\text{C}$	0,29	0,37	0,42
125 $^\circ\text{C}$	0,24	0,32	0,38
150 $^\circ\text{C}$	0,20	0,29	0,36
175 $^\circ\text{C}$	0,17	0,27	0,34

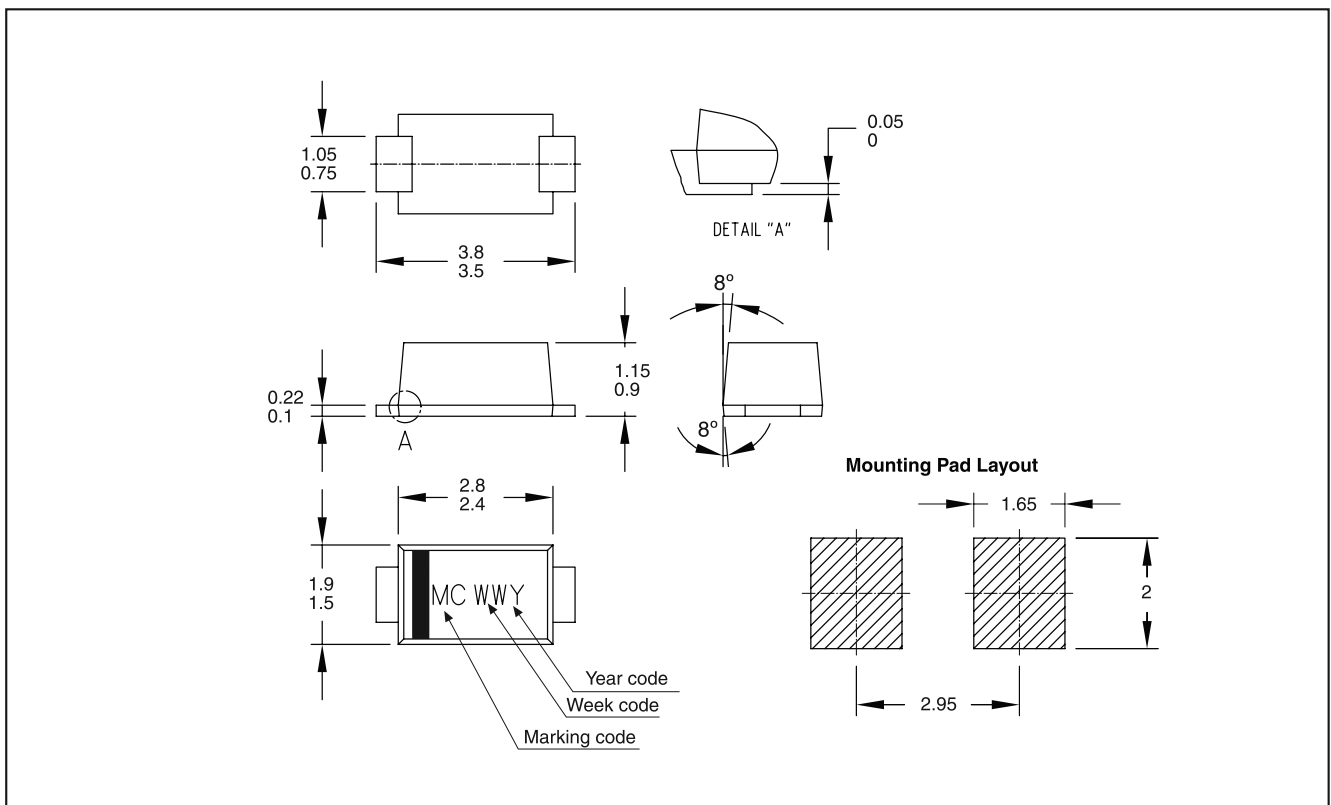
* measured under pulsed conditions (short duration pulse test used to minimize self-heating effect; thermal runaway)

1.0 Amp. Surface Mount High Temperature Schottky Barrier Rectifier

Ordering information

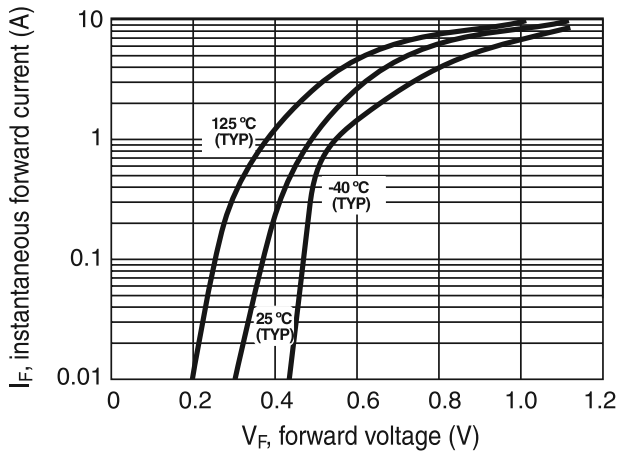
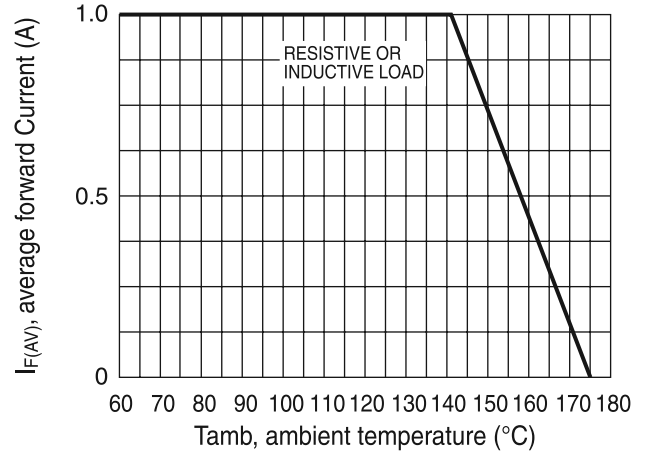
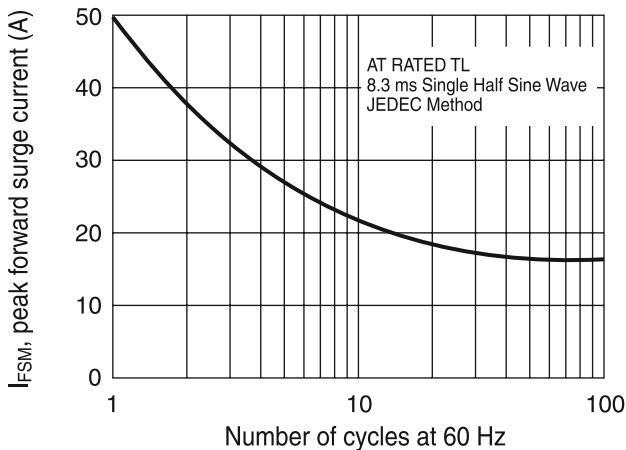
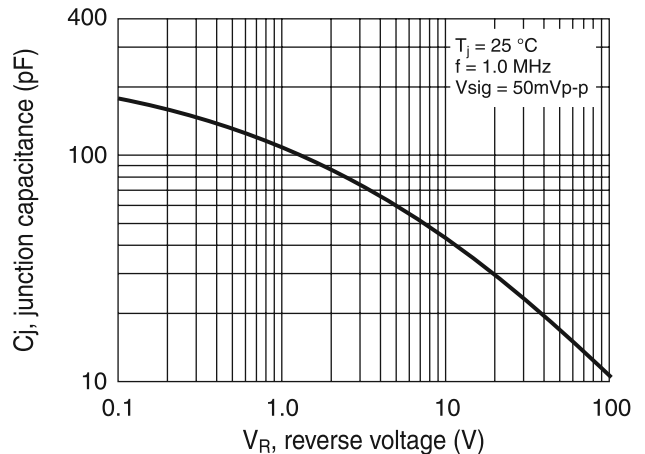
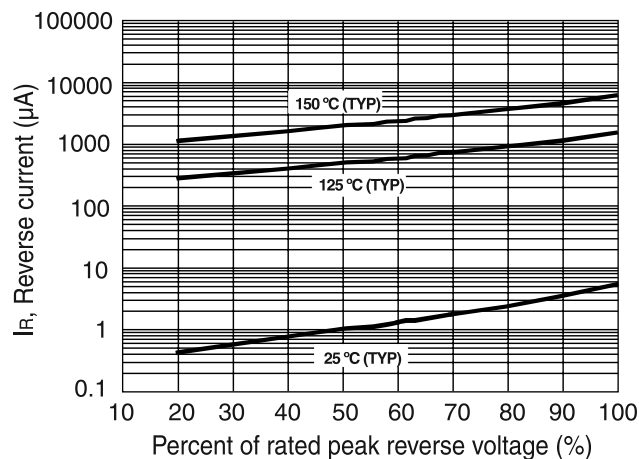
PREFERRED P/N	PACKAGE CODE	DELIVERY MODE	BASE QUANTITY	UNIT WEIGHT (g)
SK14W HE3 TRTB	TRTB	13" diameter tape and reel	10,000	0.0165

Package Outline Dimensions: (mm) SOD123W



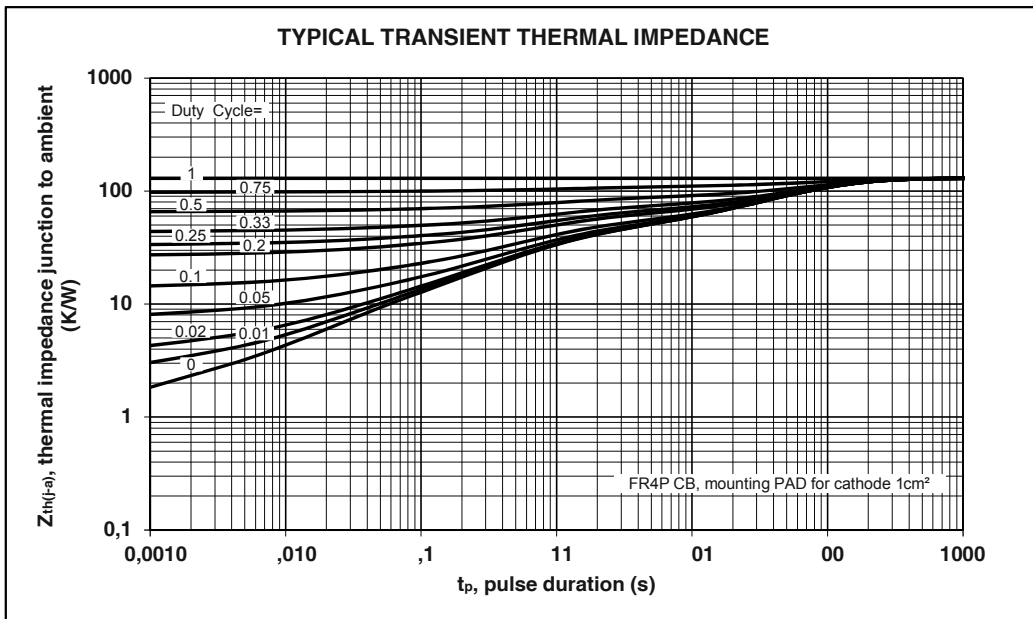
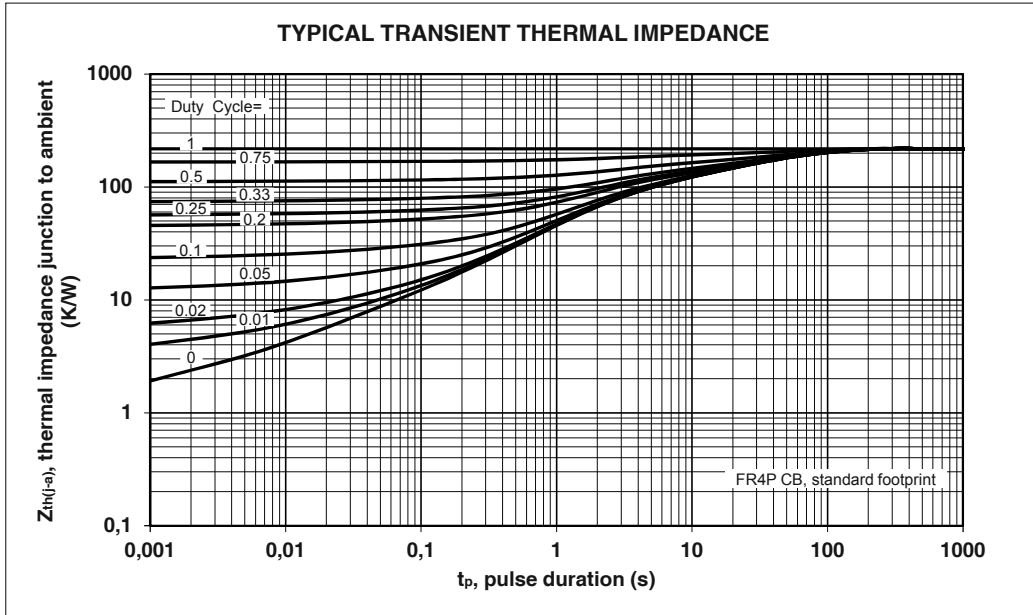
1.0 Amp. Surface Mount High Temperature Schottky Barrier Rectifier

Rating and Characteristics (Ta 25 °C unless otherwise noted)

TYPICAL FORWARD CHARACTERISTIC

MAXIMUM FORWARD CURRENT DERATING CURVE

MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

TYPICAL JUNCTION CAPACITANCE

TYPICAL REVERSE CHARACTERISTIC


1.0 Amp. Surface Mount High Temperature Schottky Barrier Rectifier

Rating and Characteristics (Ta 25 °C unless otherwise noted)



1.0 Amp. Surface Mount High Temperature Schottky Barrier Rectifier**Revision History**

DATE	REVISION	DESCRIPTION OF CHANGES
02-May-2016	0	Original Data Sheet
21-Jun-2016	1	Update IR and VF specifications at temperature
12-July-2016	2	Update VF specifications at temperature
10-Jan-2018	3	Update Typical Transient Thermal Impedance Graphs

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