



**THE DATASHEET OF
LTC2050IS5#TRPBF**



Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- Negligible Reverse Recovery Time
- Low Capacitance
- Ultra-Small Surface Mount Package
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

- Package: SOD323
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity: Cathode Band
- Terminals: Finish - Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208@3
- Weight: 0.004 grams (Approximate)



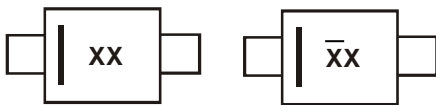
Top View

Ordering Information (Note 4)

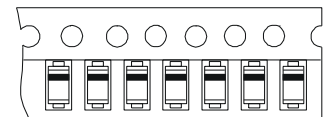
Part Number	Package	Packing	
		Qty.	Carrier
SD101AWS-7-F	SOD323	3000	Tape & Reel
SD101BWS-7-F	SOD323	3000	Tape & Reel
SD101CWS-7-F	SOD323	3000	Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



xx = Product Type Marking Code
 S1 or SK & $\bar{S}1$ or $\bar{S}K$ = SD101AWS
 S2 or SK & $\bar{S}2$ or $\bar{S}K$ = SD101BWS
 S3 or SC or SK & $\bar{S}3$ or $\bar{S}C$ or $\bar{S}K$ = SD101CWS



Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	SD101AWS	SD101BWS	SD101CWS	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	60	50	40	V
Working Peak Reverse Voltage	V _{RWM}				
DC Blocking Voltage	V _R				
RMS Reverse Voltage	V _{R(RMS)}	42	35	28	V
Forward Continuous Current (Note 5)	I _{FM}	15			mA
Non-Repetitive Peak Forward Surge Current	I _{FSM}	50			mA
@ t ≤ 1.0s					A
@ t = 10μs		2.0			

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	200	mW
Thermal Resistance, Junction to Ambient Air (Note 5)	R _{θJA}	625	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +125	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Min	Typ	Max	Unit	Test Conditions
Reverse Breakdown Voltage (Note 6)	SD101AWS	V _{(BR)R}	60	—	—	V	I _R = 10μA
	SD101BWS		50	—	—		I _R = 10μA
	SD101CWS		40	—	—		I _R = 10μA
Forward Voltage Drop	SD101AWS	V _{FM}	—	—	0.41	V	I _F = 1.0mA
	SD101BWS		—	—	0.40		I _F = 1.0mA
	SD101CWS		—	—	0.39		I _F = 1.0mA
	SD101AWS		—	—	1.00		I _F = 15mA
	SD101BWS		—	—	0.95		I _F = 15mA
	SD101CWS		—	—	0.90		I _F = 15mA
Peak Reverse Current (Note 6)	SD101AWS	I _{RM}	—	—	200	nA	V _R = 50V
	SD101BWS		—	—	200		V _R = 40V
	SD101CWS		—	—	200		V _R = 30V
Total Capacitance	SD101AWS	C _T	—	—	2.0	pF	V _R = 0V, f = 1.0MHz
	SD101BWS		—	—	2.1		V _R = 0V, f = 1.0MHz
	SD101CWS		—	—	2.2		V _R = 0V, f = 1.0MHz
Reverse Recovery Time		t _{RR}	—	—	1.0	ns	I _F = I _R = 5.0mA, I _{RR} = 0.1 x I _R , R _L = 100Ω

Notes: 5. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
6. Short duration pulse test used to minimize self-heating effect.

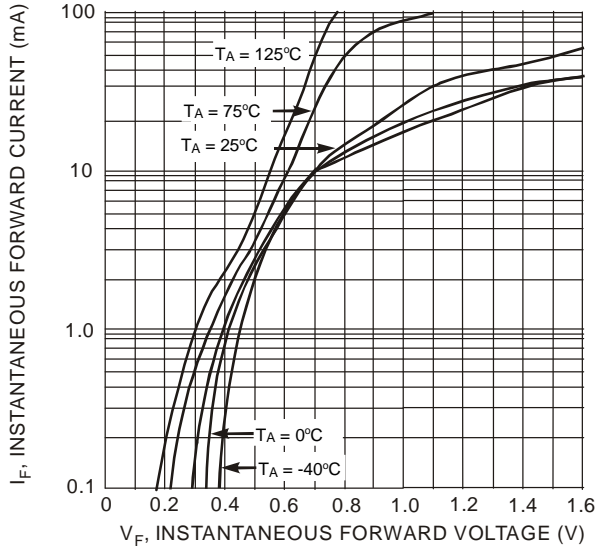


Fig. 1 Typical Forward Characteristics

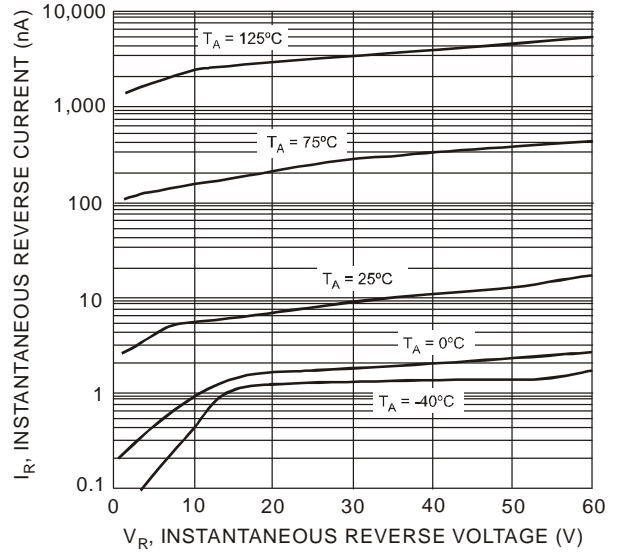


Fig. 2 Typical Reverse Characteristics

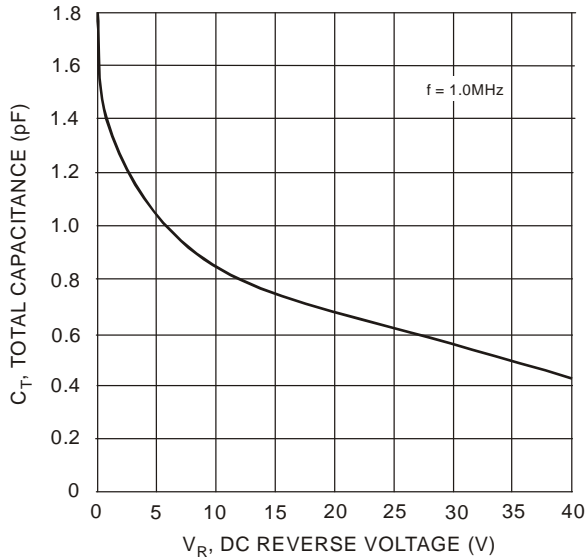


Fig. 3 Total Capacitance vs. Reverse Voltage

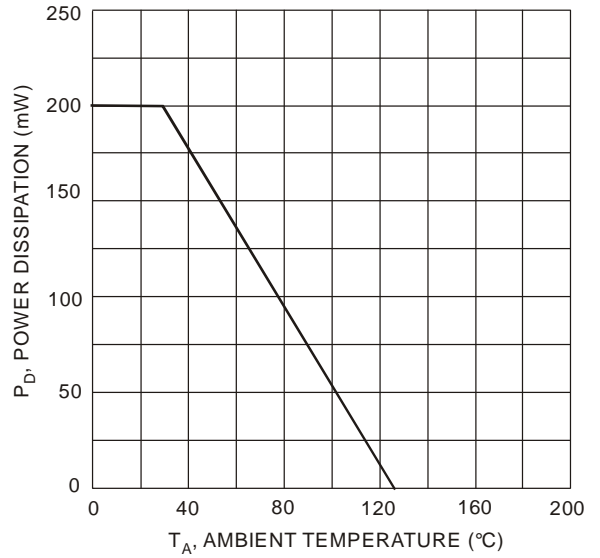
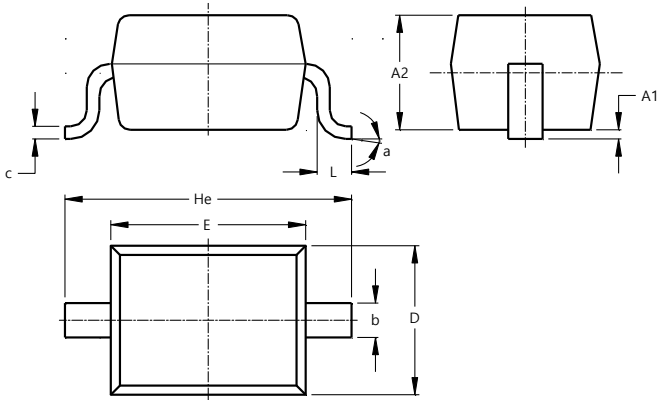


Fig. 4 Power Derating Curve

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD323

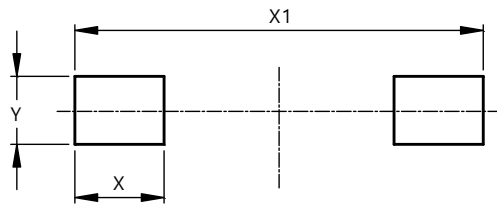


SOD323			
Dim	Min	Max	Typ
A1	--	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD323



Dimensions	Value (in mm)
X	0.590
X1	2.700
Y	0.450

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