SURFACE MOUNT SCHOTTKY BARRIER DIODE
POWERDI323

Product Summary

V_R (V)	I_F (mA)	$V_{F\ MAX}$ (V) @ +25°C	$I_{R\ MAX}$ (µA) @ +25°C
30	100	0.485	2.0

Features and Benefits

- Low Forward Voltage Drop
- Fast Switching
- Ultra-Small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

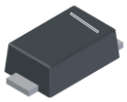
Description and Applications

This Schottky barrier rectifier has been designed to meet the Low forward voltage applications. It is ideally suited to use as :

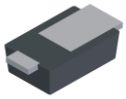
- Polarity Protection Diode
- Re-circulating Diode
- Switching Diode

Mechanical Data

- Case: POWERDI®323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity: Cathode Band
- Terminals: Finish - Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.005 grams (Approximate)



Top View



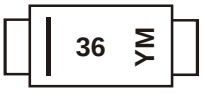
Bottom View

Ordering Information (Note 4)

Part Number	Case	Packaging
PD3S0230-7	POWERDI®323	3000/Tape & Reel

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See http://www.diodes.com/quality/lead_free.html 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 http://www.diodes.com/products/packages.html.

Marking Information



36 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: D = 2016)
M = Month (ex: 9 = September)

Date Code Key

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Code	Y	Z	A	B	C	D	E	F	G	H

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	V
Continuous Forward Current	I_{FM}	200	mA
Repetitive Peak Forward Current	I_{FRM}	300	mA
Non-Repetitive Peak Forward Surge Current @ t_p < 10ms	I_{FSM}	600	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	242	°C/W
Operating Temperature Range	T_J	-65 to +125	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	30	—	—	V	I_R = 100μA
Forward Voltage	V_F	—	217 280 350 400 485	240 320 400 500 800	mV	I_F = 0.1mA I_F = 1mA I_F = 10mA I_F = 30mA I_F = 100mA
Leakage Current (Note 7)	I_R	—	—	2.0	μA	V_R = 25V
Total Capacitance	C_T	—	10.7	—	pF	V_R = 1.0V, f = 1.0MHz
Reverse Recovery Time	t_{rr}	—	—	5.0	ns	I_F = 10mA through I_R = 10mA to I_R = 1.0mA, 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. T_A = +25°C.

6. Polymide PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com.

7. Short duration pulse test used to minimize self-heating effect.

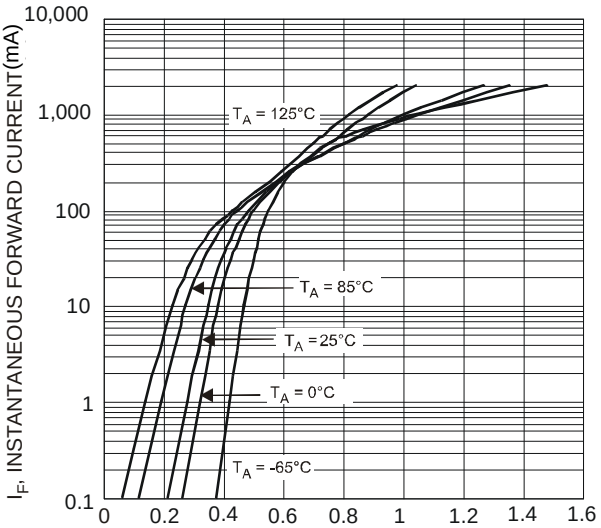


Fig. 1 Typical Forward Characteristics

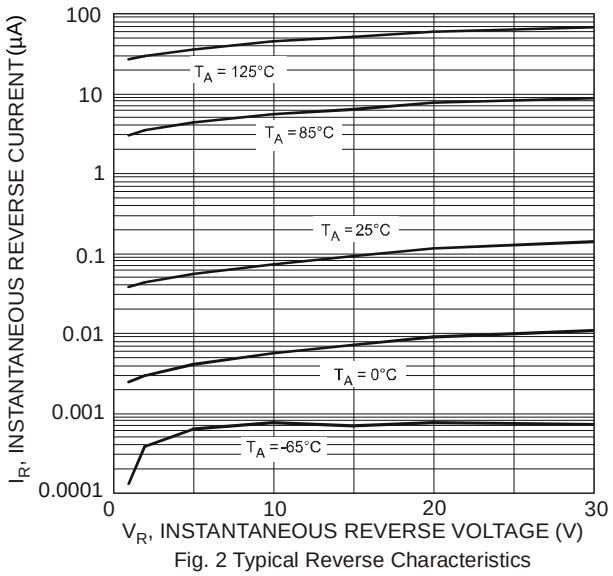


Fig. 2 Typical Reverse Characteristics

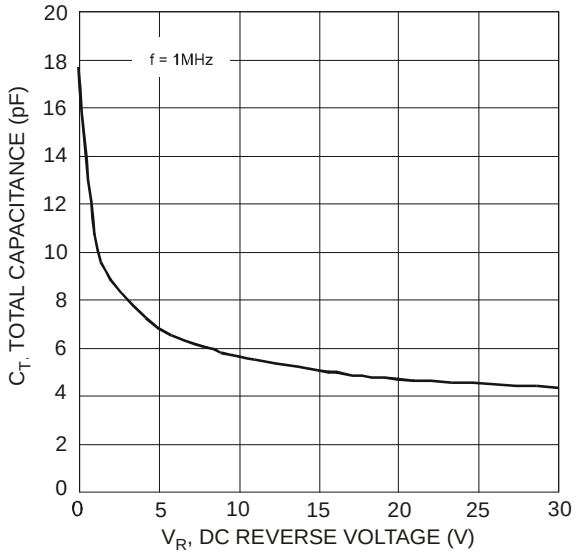


Fig. 3 Total Capacitance vs. Reverse Voltage

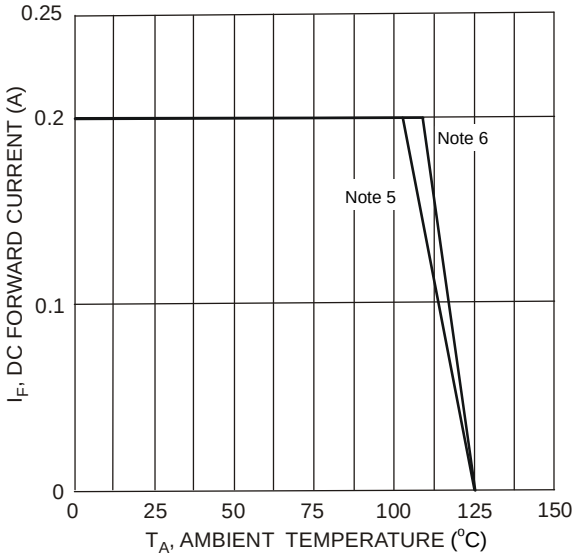


Fig. 4 DC Forward Current Derating

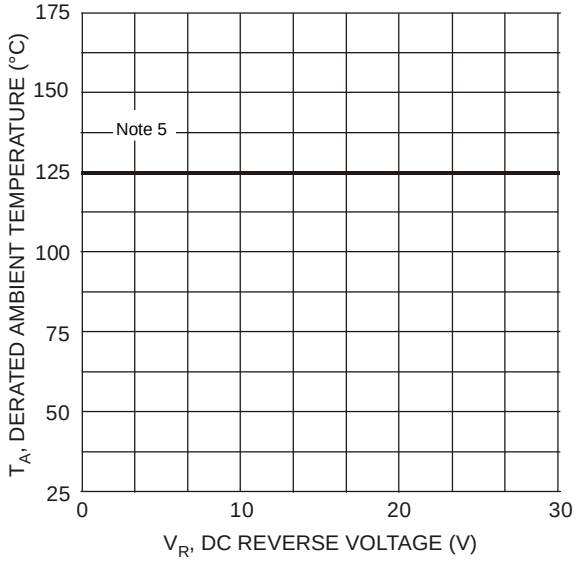


Fig. 5 Operating Temperature Derating

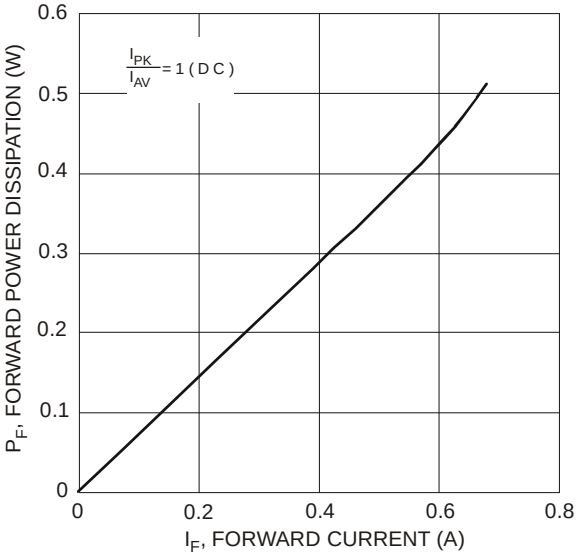


Fig. 6 Forward Power Dissipation

Package Outline Dimensions

Please see AP02001 at http://www.diodes.com/_files/datasheets/ap02001.pdf for the latest version.

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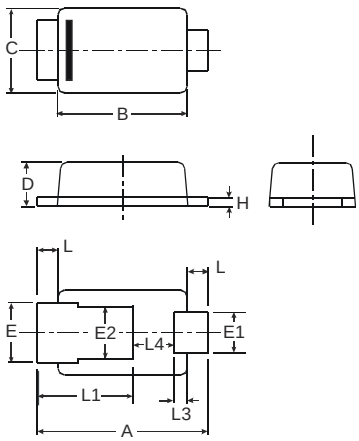

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Dim	**Min**	**Max**	**Typ**
A	2.40	2.60	2.50
B	1.85	1.95	1.90
C	1.20	1.30	1.25
D	0.60	0.70	0.65
E	0.78	0.98	0.88
E1	0.50	0.70	0.60
E2	0.60	1.00	0.80
H	0.08	0.18	0.13
L	0.20	0.40	0.30
L1	—	—	1.40
L3	—	—	0.20
L4	0.40	0.80	0.60
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/_files/datasheets/ap02001.pdf for the latest version.

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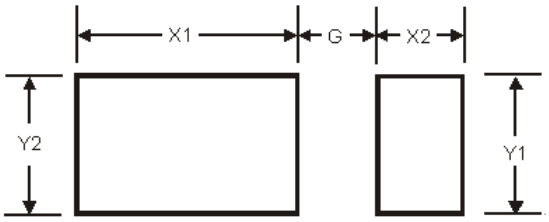

Dimensions	Value (in mm)
G	0.5
X1	2.0
X2	0.8
Y1	0.8
Y2	1.1