



PD3S140

1.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER POWERDI®

Features

- Ultra-Small Surface Mount Package
- Guard Ring Die Construction for Transient Protection
- High Surge Capability
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability

Mechanical Data

- Case: POWERDI323
- 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 ®
- Weight: 0.006 grams (approximate)

POWERDI323







Bottom View

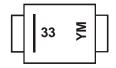
Ordering Information (Note 4)

Part Number	Case	Packaging		
PD3S140-7	POWERDI323	3000/Tape & Reel		
PD3S140Q-7	POWERDI323	3000/Tape & Reel		

Notes:

- 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
- 2. See http://www.diodes.com 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.

Marking Information



33 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: U = 2006) M = Month (ex: 9 = September)

Date Code Key

Year	2006	2007	2008	2009	2010	2011	2012	201	3 201	4 201	5 2016	2017	2018
Code	Т	U	V	W	Χ	Υ	Z	А	В	С	D	Е	F
Month	Jan	Feb	Mar	Apr	Ма	y J	un	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5		6	7	8	9	0	N	D



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

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	40	V
Average Forward Current (See also figure 4)	I _{F(AV)}	1.0	Α
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	I _{FSM}	22	А

Thermal Characteristics

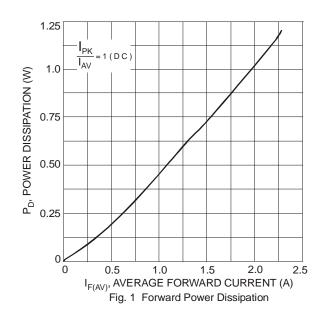
Characteristic	Symbol	Тур	Max	Unit
Thermal Resistance Junction to Soldering Point	$R_{ heta}$ JS	_	15	°C/W
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{ heta JA}$	175	_	°C/W
Thermal Resistance Junction to Ambient Air (Note 6)	$R_{ heta JA}$	130	_	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to	+150	°C

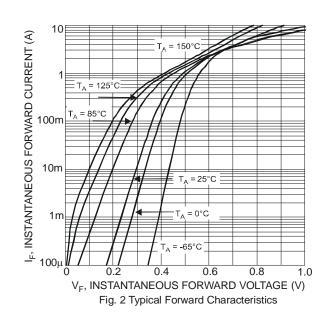
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	40	1	_	V	$I_R = 100 \mu A$
		_	0.37	0.42	V	$I_F = 0.1A$
Forward Voltogo		_	0.44	0.50		$I_F = 0.5A$
Forward Voltage	V _F	_	0.46	0.52		$I_F = 0.7A$
		_	0.49	0.55		I _F = 1.0A
Lookaga Current (Note 7)		_	0.3	4	- πΑ	$V_R = 5V, T_A = +25^{\circ}C$
Leakage Current (Note 7)	IR	_	2	50		V _R = 40V, T _A = +25°C
Total Capacitance (See also figure 3)	C _T	_	32	_	pF	V _R = 10V, f = 1.0MHz

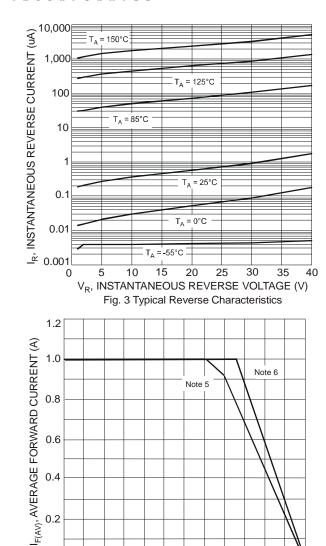
Notes:

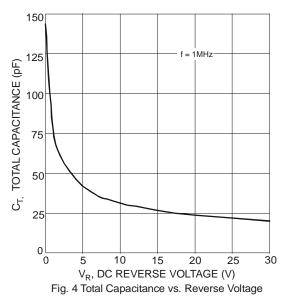
- 5. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com. $T_A = +25$ °C.
- 6. Polymide PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com. $T_A = +25$ °C.
- 7. Short duration pulse test used to minimize self-heating effect.

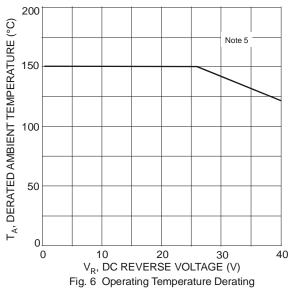












Package Outline Dimensions

0

Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.

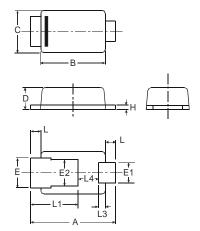
100

150

75

T_A, AMBIENT TEMPERATURE (°C)

Fig. 5 Forward Current Derating Curve

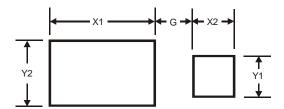


POWERDI323							
Dim	Min	Max	Тур				
Α	2.40	2.60	2.50				
В	1.85	1.95	1.90				
U	1.20	1.30	1.25				
D	0.60	0.70	0.65				
Е	0.78	0.98	0.88				
E1	0.50	0.70	0.60				
E2	0.60	1.00	0.80				
Η	0.08	0.18	0.13				
L	0.20	0.40	0.30				
L1	_		1.40				
L3	_	_	0.20				
L4	0.40	0.80	0.60				
All C	All Dimensions in mm						



Suggested Pad Layout

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



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

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