



PD3S160Q

1.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER POWERDI[®]323

Product Summary

V _R (V)	I _F (A)	V _{F MAX} (V) @ +25°C	I _{R MAX} (mA) @ +25°C	
60	1.0	0.64	0.05	

Description and Applications

This Schottky Barrier Rectifier has been designed to meet the stringent requirements of Automotive Applications. It is ideally suited to use as :

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

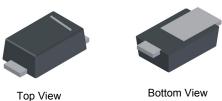
Features and Benefits

- Guard Ring Die Construction for Transient Protection
- High Surge Capability
- Ultra-Small Surface Mount Package
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

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 (3)
- Weight: 0.006 grams (approximate)

POWERDI323



Ordering Information (Note 5)

Part Number	Compliance	Case	Packaging
PD3S160Q-7	Automotive	POWERDI323	3000/Tape & Reel

1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.

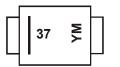
See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.

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. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally

- the same, except where specified. For more information, please refer to http://www.diodes.com/quality/product_compliance_definitions/. 5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.
- For packaging details, go to our website at http://www.diodes.com/products/p

Marking Information



37 = Product Type Marking Code YM = Date Code Marking

Y = Year (ex: T = 2014)

M = Month (ex: 9 = September)

Date Code Key

Notes:

Date Obuc Rey												
Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Code	В	С	D	E	F	G	Н	I	J	K	L	М
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
					,			v				



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	60	V
RMS Reverse Voltage	V _{R(RMS)}	42	V
Average Forward Current (See also figure 4)	IF(AV)	1.0	A
Repetitive Peak Forward Current $t_{\rho} \le 1 \text{ms}; \delta \le 0.25$	IFRM	8	А
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	$R_{ ext{ heta}JS}$	—	6	°C/W
Thermal Resistance Junction to Ambient Air (Note 6)	R ₀ JA	173	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 7)	R _{0JA}	125	—	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to	o +150	°C

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

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 8)	V _{(BR)R}	60	_		V	I _R = 100μA
Forward Voltage	V _F		0.40 0.55 —	0.45 0.58 0.64	V	I _F = 0.1A I _F = 0.7A I _F = 1.0A
Leakage Current (Note 8)	I _R		0.3 3	5 50		V _R = 5V, T _A = +25°C V _R = 60V, T _A = +25°C
Total Capacitance (See also figure 3)	CT		38		pF	V _R = 10V, f = 1.0MHz

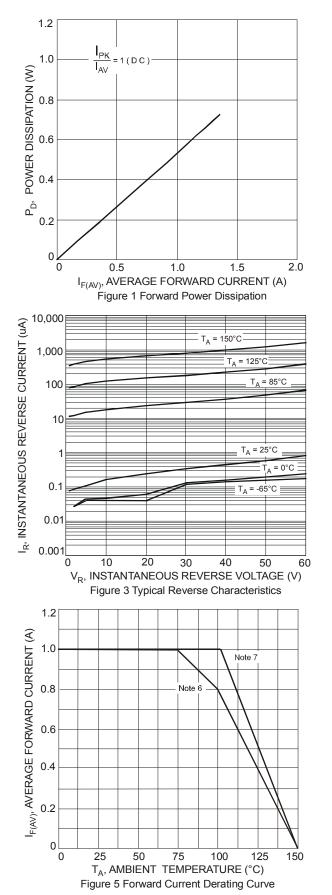
Notes:

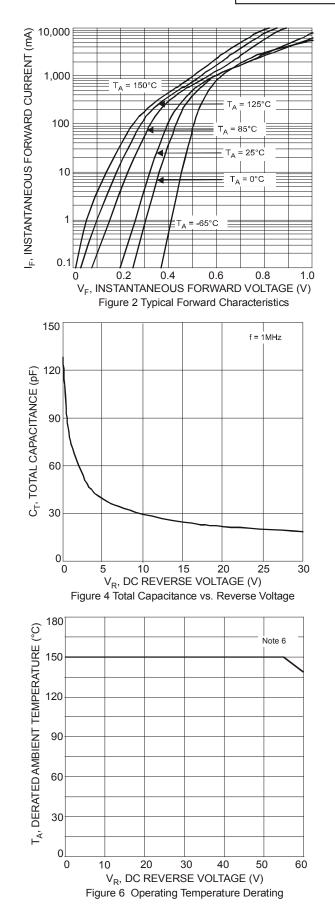
6. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com. T_A = +25°C.

7. Polymide PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com. $T_A = +25^{\circ}C.$ 8. Short duration pulse test used to minimize self-heating effect.







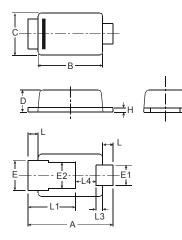


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Package Outline Dimensions

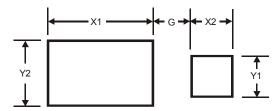
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



	POWERDI323						
Dim	Min	Max	Тур				
Α	2.40	2.60	2.50				
в	1.85	1.95	1.90				
C	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				
Н	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 D	imens	sions 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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