

Product Summary

V _{RRM} (V)	I _F (mA)	V _F (MAX) (mV) @ 400mA	I _R (MAX) (µA) @ 30V
40	400	500	40

Description and Applications

This compact SOD323 packaged Schottky diode offers users an excellent performance combination comprising high-current operation, extremely low-leakage and low-forward voltage ensuring suitability for applications requiring efficient operation at higher temperatures (above +85°C) see Operational Efficiency Chart on page 3.

- DC-DC converters
- Mobile telecoms
- PCMCIA

Features and Benefits

- Low V_F
- High-Current Capability (I_F = 0.40A)
- Miniature Surface-Mount Package
- Low V_F, Fast Switching Schottky
- Package Thermally Rated to +150°C
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free “Green” Device (Note 3)**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability.**
<https://www.diodes.com/quality/product-definitions/>
- **An automotive-compliant part is available under separate datasheet ([ZHCS400Q](#))**

Mechanical Data

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

SOD323



Top View

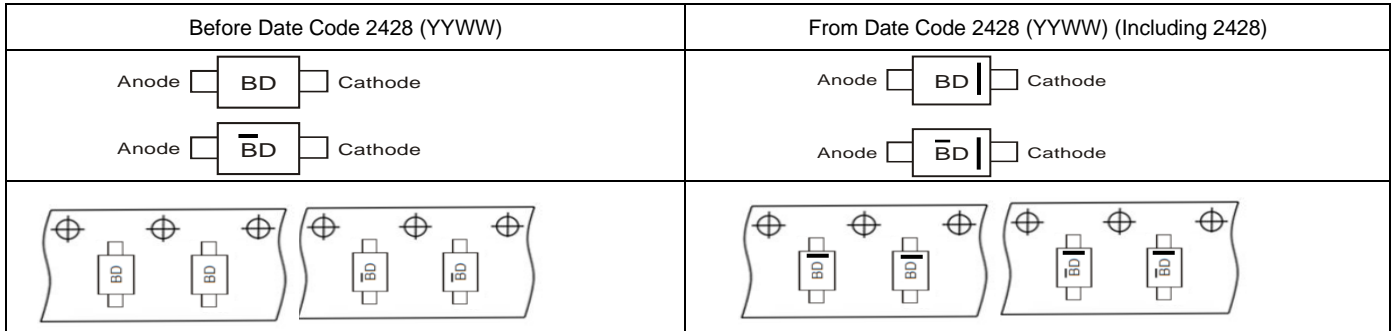
Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
ZHCS400TA	SOD323	3,000	Tape & Reel
ZHCS400TC	SOD323	10,000	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

BD & $\bar{B}D$ = Product Type Marking Code



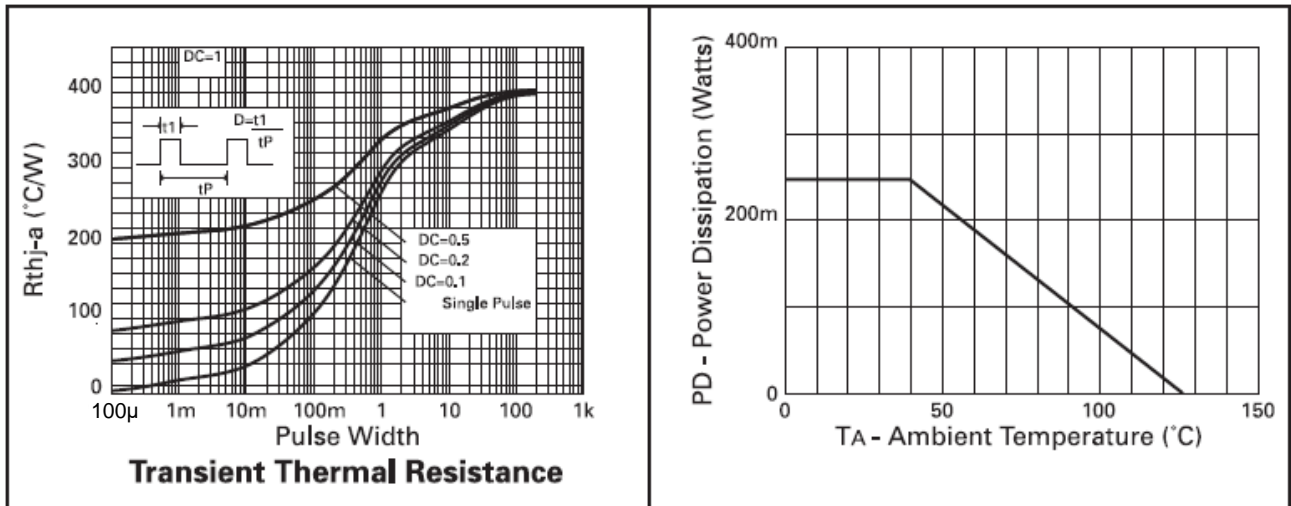
Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	
Continuous Reverse Voltage	V _R	40	V	
Continuous Forward Current	I _F	400	mA	
Forward Voltage @ I _F = 400mA	V _F	500	mV	
Average Peak Forward Current, D.C. = 50%	I _{FAV}	1000	mA	
Continuous Drain Current	I _{FSM}	t ≤ 100μs	6.75	A
		t ≤ 10ms	3	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	R _{θJA}	500	°C/W
Power Dissipation, T _A = +25°C	P _D	250	mW
Junction Temperature (Note 6)	T _J	+125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

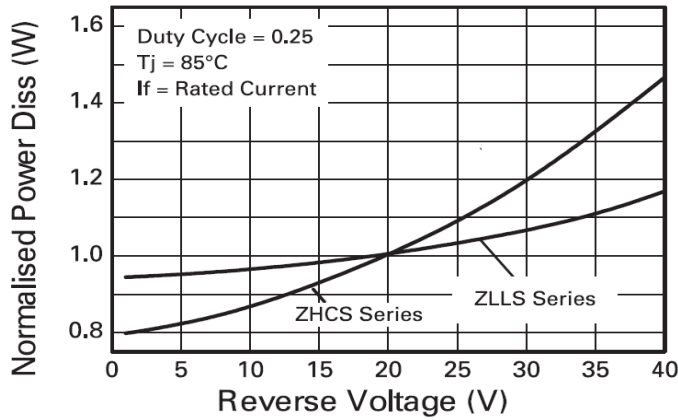
- Notes:
- 5. Part mounted on 1inch sq. copper pad, 2oz. board with Diodes Incorporated's recommended pad layout.
 - 6. The heat generated must be less than the thermal conductivity from junction to case: dP_D / dT_J < 1/R_{θJC}.



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

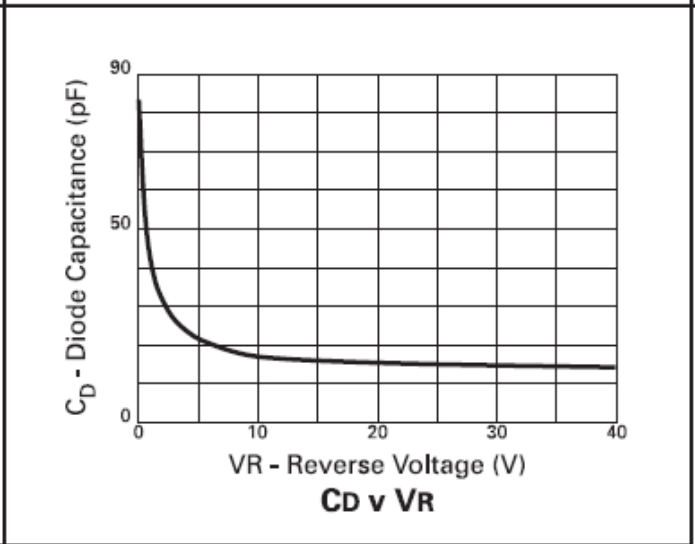
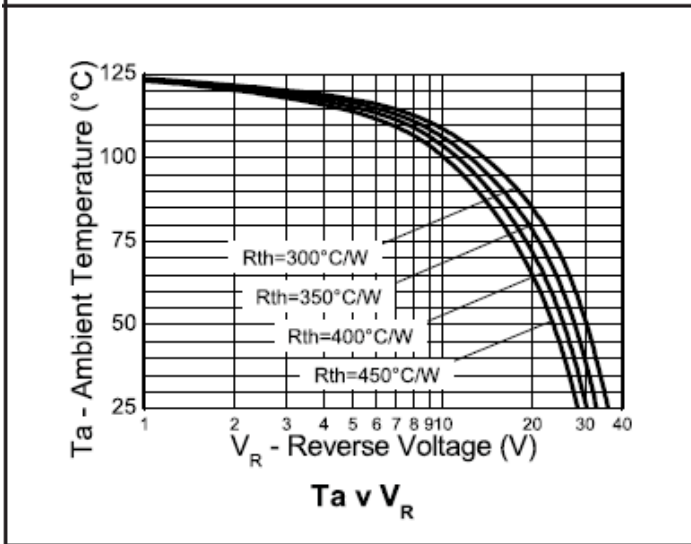
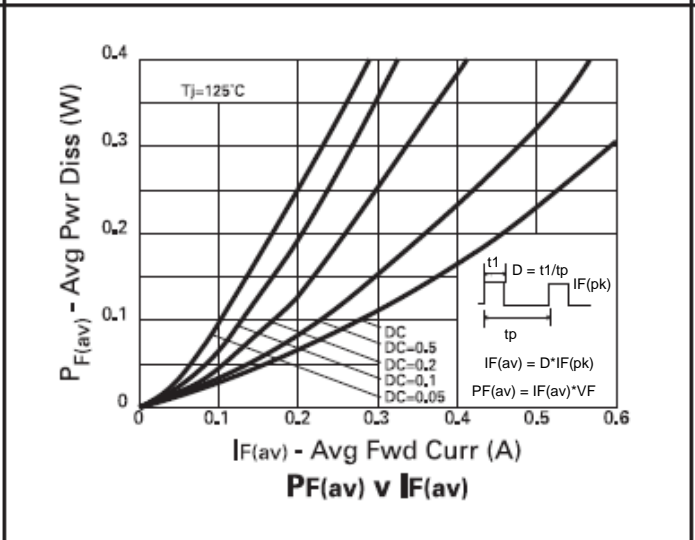
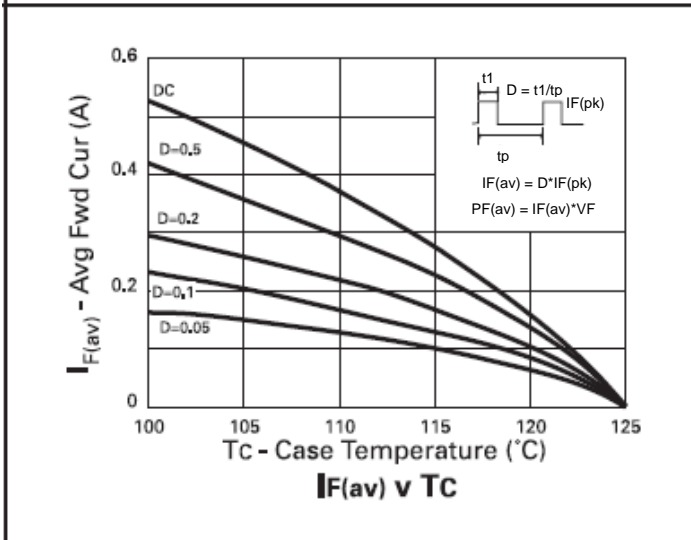
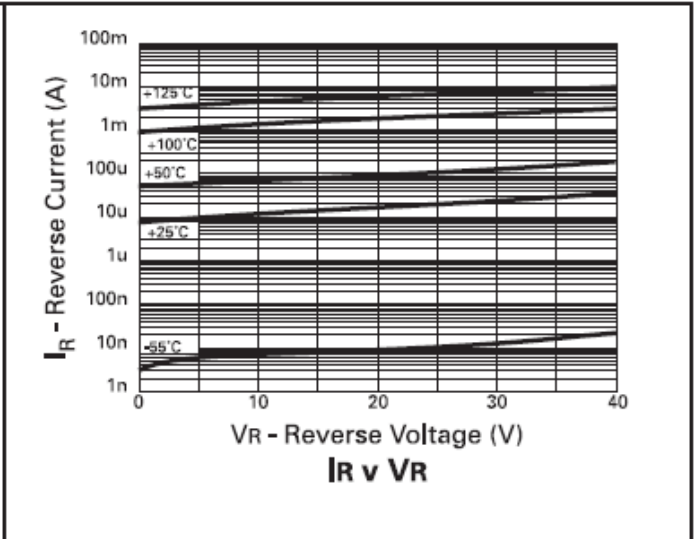
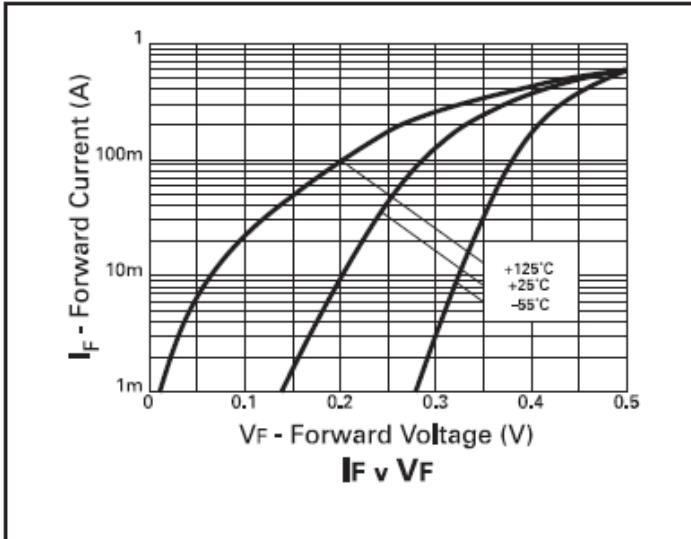
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	V _{(BR)R}	40	60	—	V	I _R = 200µA
Forward Voltage	V _F	—	270	300	mV	I _F = 50mA
		—	300	350		I _F = 100mA
		—	370	460		I _F = 250mA
		—	425	500		I _F = 400mA
		—	550	670		I _F = 750mA
		—	640	780		I _F = 1,000mA
		—	810	1050		I _F = 1,500mA
		—	440	—		I _F = 500mA, T _A = +100°C
Reverse Current	I _R	—	15	40	µA	V _R = 30V
Diode Capacitance	C _D	—	20	—	pF	f = 1MHz, V _R = 25V

Operational Efficiency Chart



Operational Efficiency Example

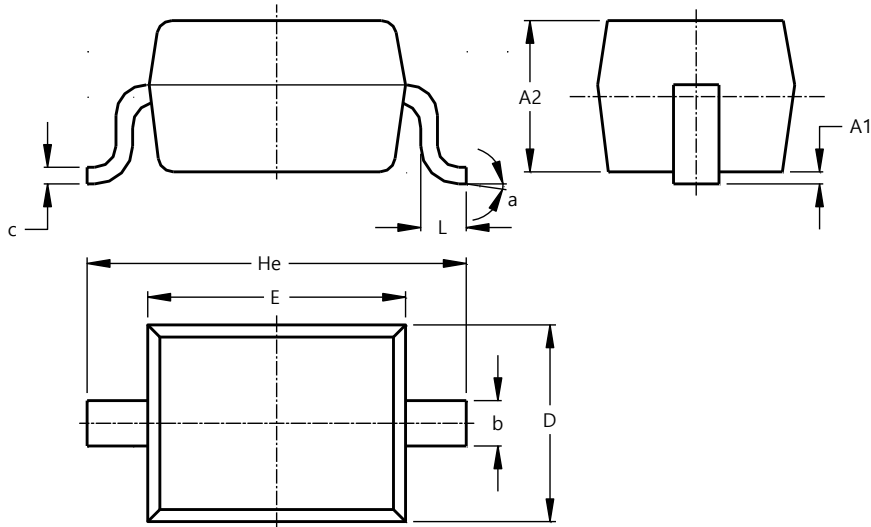
The operational efficiency chart indicates the beneficial use of the ZLLS series diodes in applications requiring higher voltage, higher temperature operation. Circuits requiring low-voltage low-temperature operation will benefit from using Zetex low V_F ZHCS series diodes.



Package Outline Dimensions

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

SOD323

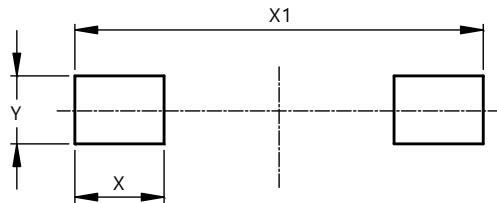


SOD323			
Dim	Min	Max	Typ
A1	—	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	0°	8°	—
All Dimensions in mm			

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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