



# THE DATASHEET OF ZHCS2000TA



## Product Summary

- $V_R = 40V$
- $I_C = 2A$

## Features and Benefits

- High Current Capability
- Low Forward Voltage
- Fast Recovery Time
- Small Package Size
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

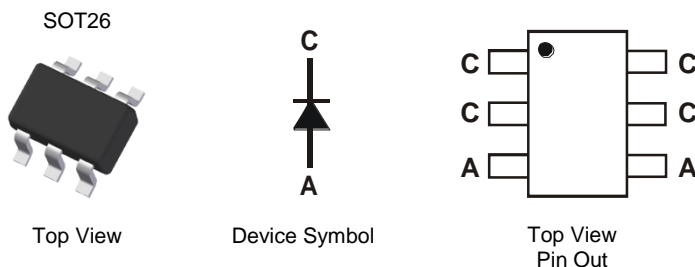
## Description and Applications

A surface mount Schottky Barrier Diode featuring low forward voltage drop suitable for high frequency rectification and reverse voltage protection.

- Mobile
- DC-DC Converters
- High Frequency Rectification

## Mechanical Data

- Case: SOT26
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Copper Leadframe; (Lead-Free Plating) Solderable per MIL-STD-202, Method 208
- Weight: 0.016 grams (Approximate)

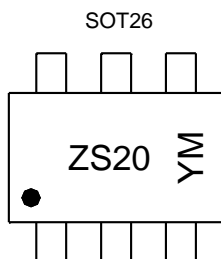


## Ordering Information (Note 4)

Device	Packaging	Shipping
ZHCS2000TA	SOT26	3,000/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](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



ZS20 = Product Type Marking Code  
 YM = Date Code Marking  
 Y or  $\bar{Y}$  = Year (ex: C = 2015)  
 M or  $\bar{M}$  = Month (ex: 9 = September)

### Date Code Key

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Code	C	D	E	F	G	H	I	J	K	L	M

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

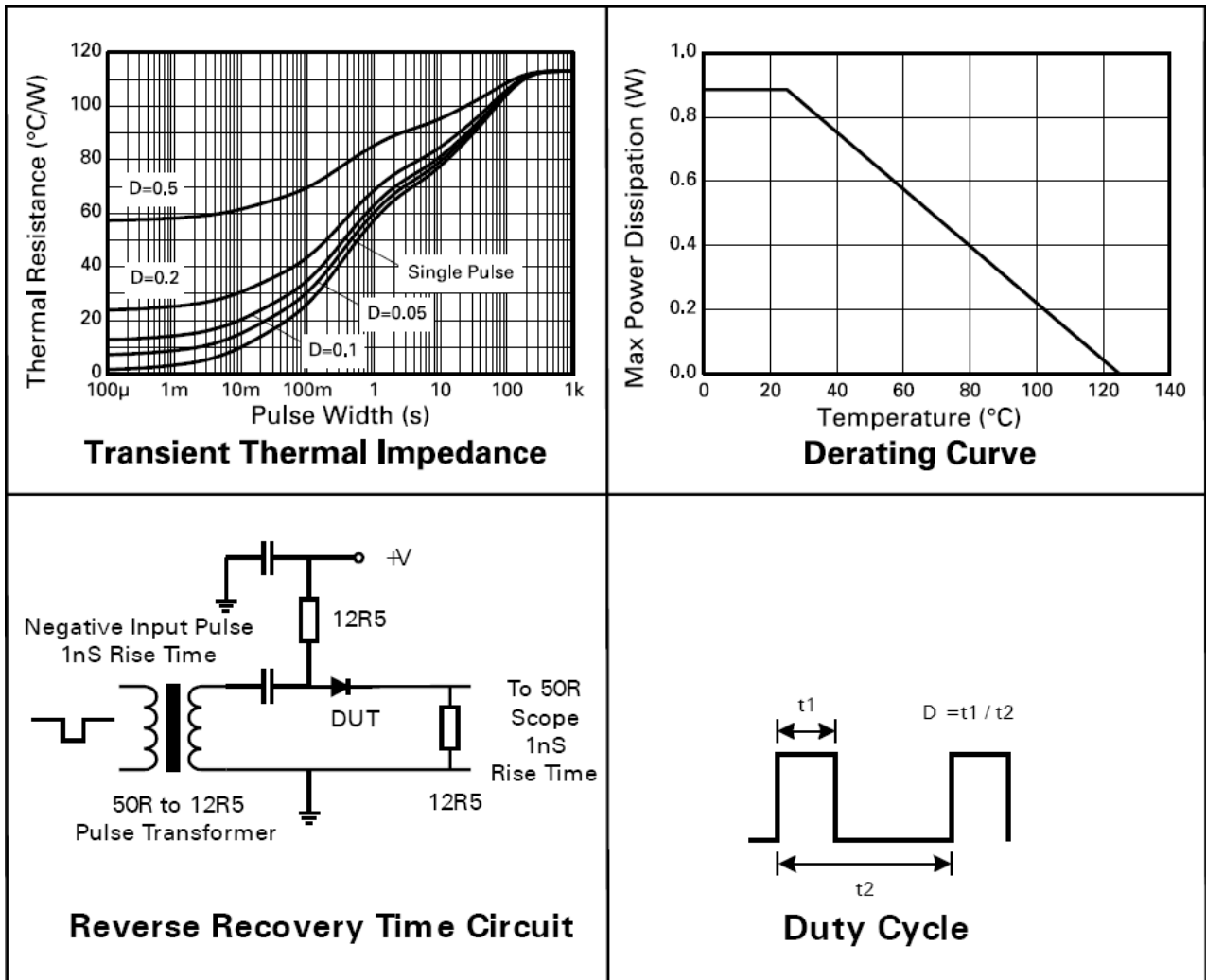
**Maximum Ratings** (@T<sub>A</sub> = +25°C unless otherwise specified.)

Characteristic	Symbol	Value	Units
Continuous Reverse Voltage	V <sub>R</sub>	40	V
Continuous Forward Current	I <sub>F</sub>	2	A
Average Peak Forward Current; D.C. = 50%	I <sub>FAV</sub>	4	A
Non Repetitive Forward Current	I <sub>FSM</sub>	t ≤ 100µs	20
		t ≤ 10ms	10

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation, T <sub>A</sub> = +25°C	P <sub>D</sub>	1.1	W
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	(Note 5)	113
		(Note 6)	73
Junction Temperature	T <sub>J</sub>	125	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

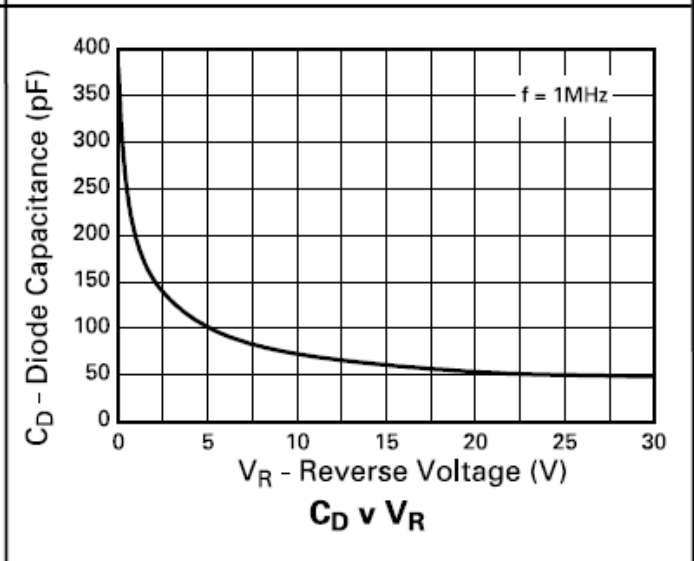
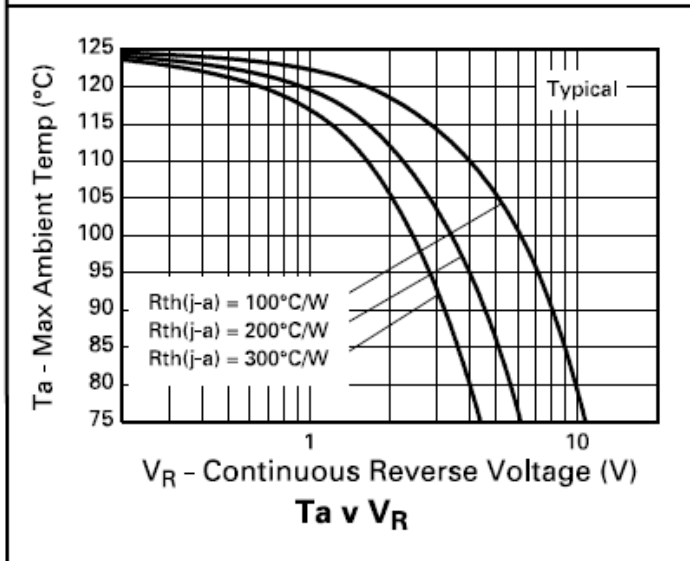
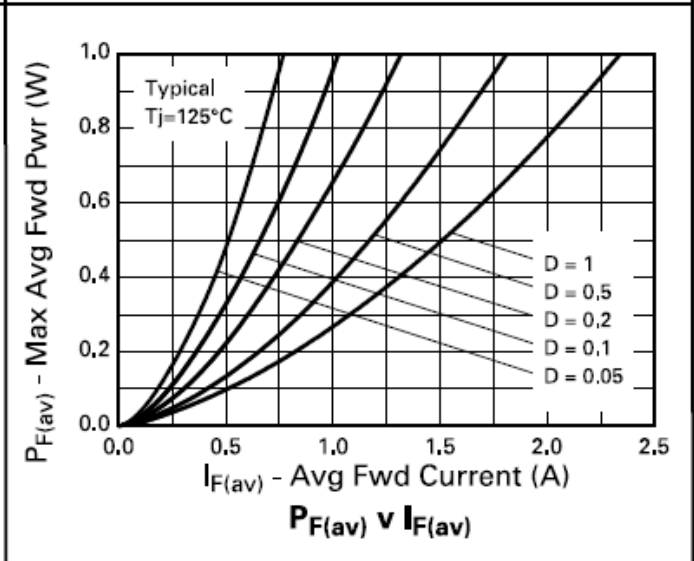
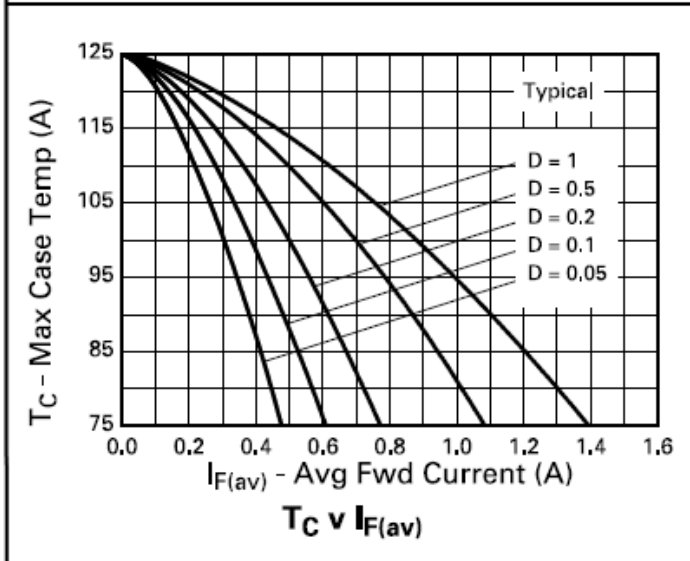
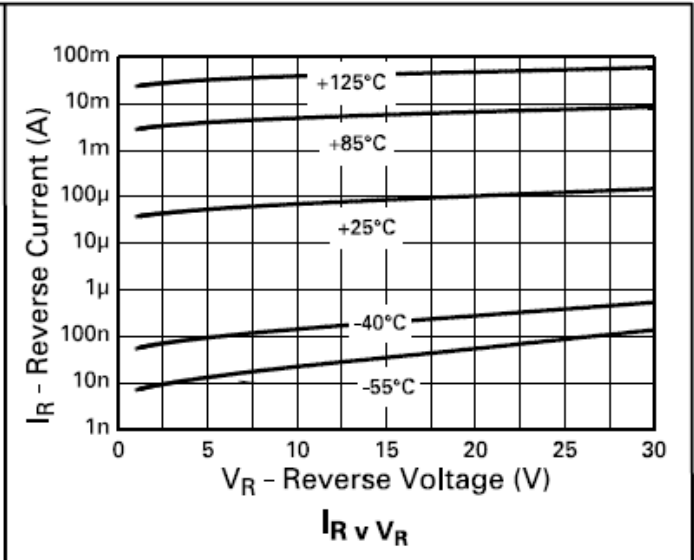
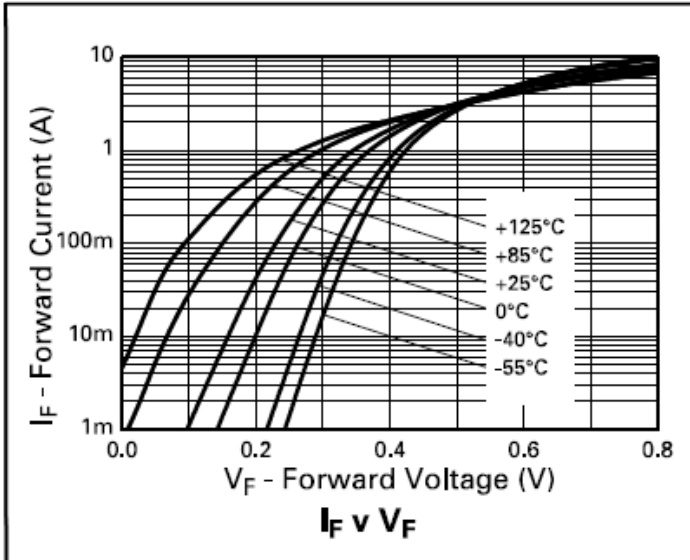
Notes: 5. For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.  
6. For a device surface mounted on FR4 PCB measured at t ≤ 5 secs.



**Electrical Characteristics** (@T<sub>A</sub> = +25°C unless otherwise specified.)

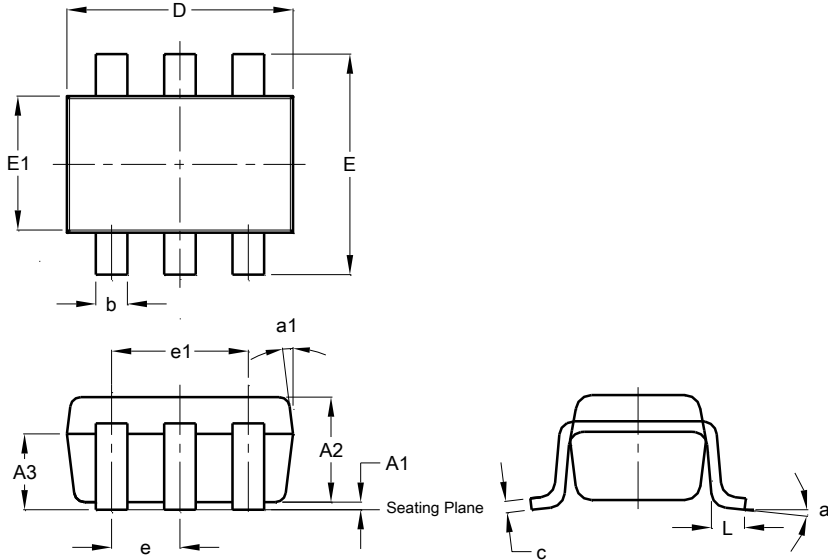
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	V <sub>(BR)R</sub>	40	-	-	V	I <sub>R</sub> = 1mA
Forward Voltage (Note 7)	V <sub>F</sub>	-	290	325	mV	I <sub>F</sub> = 500mA
		-	340	385		I <sub>F</sub> = 1000mA
		-	380	445		I <sub>F</sub> = 1500mA
		-	420	500		I <sub>F</sub> = 2000mA
		-	485	615		I <sub>F</sub> = 3000mA
		-	420	-		I <sub>F</sub> = 2000mA, T <sub>A</sub> = +100°C
Reverse Current	I <sub>R</sub>	-	160	300	μA	V <sub>R</sub> = 30V
Diode Capacitance	C <sub>D</sub>	-	50	-	pF	f = 1MHz, V <sub>R</sub> = 25V
Reverse Recovery Time	t <sub>rr</sub>	-	5.5	-	ns	Switched from I <sub>F</sub> = 500mA to I <sub>R</sub> = 500mA Measured @ I <sub>R</sub> = 50mA

Notes: 7. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle ≤ 2%.



**Package Outline Dimensions**

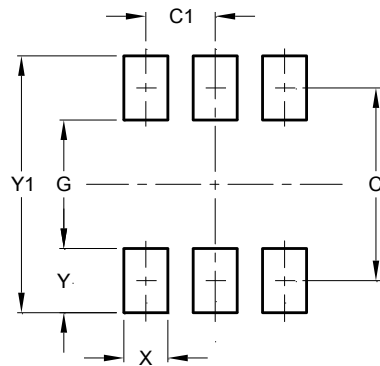
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



SOT26			
Dim	Min	Max	Typ
A1	0.013	0.10	0.05
A2	1.00	1.30	1.10
A3	0.70	0.80	0.75
b	0.35	0.50	0.38
c	0.10	0.20	0.15
D	2.90	3.10	3.00
e	-	-	0.95
e1	-	-	1.90
E	2.70	3.00	2.80
E1	1.50	1.70	1.60
L	0.35	0.55	0.40
a	-	-	8°
a1	-	-	7°
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)
C	2.40
C1	0.95
G	1.60
X	0.55
Y	0.80
Y1	3.20

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