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Diodes Incorporated
ZHCS2000TA

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DIODES INCORPORATED

Lead-free Green

ZHCS2000

40V SURFACE MOUNT SCHOTTKY BARRIER DIODE

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

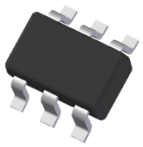
A surface mount Schottky Barrier Diode featuring low forward voltage drop suitable for high frequency rectification and reverse voltage protection.

- Mobile
- DC-DC Converters
- High Frequency Rectification

Mechanical Data

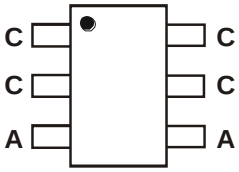
- Case: SOT26
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Copper Leadframe; (Lead-Free Plating) Solderable per MIL-STD-202, Method 208
- Weight: 0.016 grams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

SOT26



Top View

Device Symbol



Top View
Pin Out

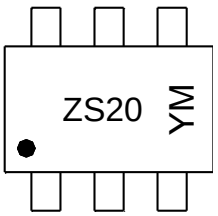
Ordering Information (Note 4)

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 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

SOT26



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

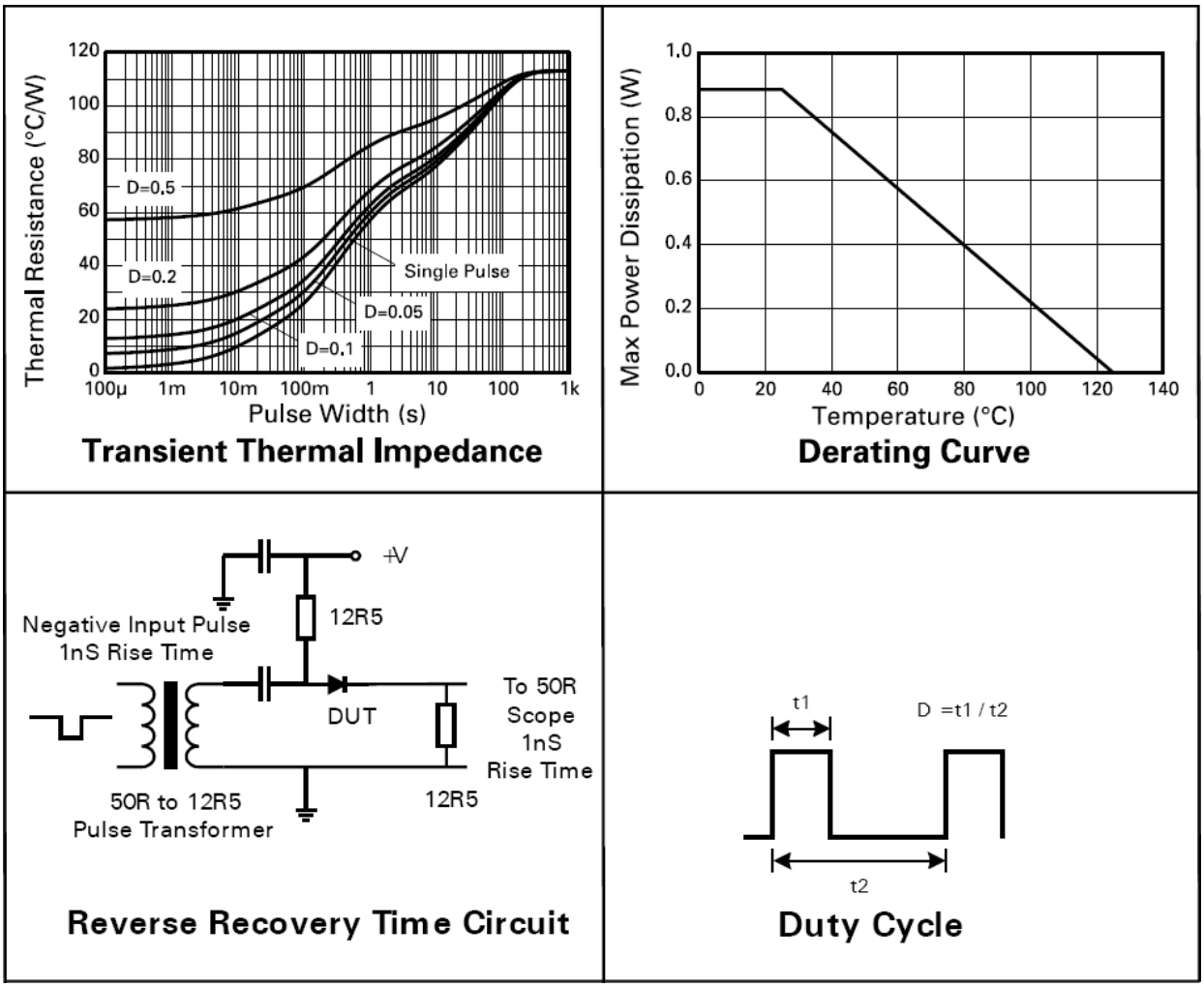
Maximum Ratings (@T_A = +25°C unless otherwise specified.)

Characteristic		Symbol	Value	Units
Continuous Reverse Voltage		V_R	40	V
Continuous Forward Current		I_F	2	A
Average Peak Forward Current; D.C. = 50%		I_{FAV}	4	A
Non Repetitive Forward Current	t ≤ 100µs	I_{FSM}	20	A
	t ≤ 10ms		10	A

Thermal Characteristics

Characteristic		Symbol	Value	Unit
Power Dissipation, T_A = +25°C		P_D	1.1	W
Thermal Resistance, Junction to Ambient	(Note 5) (Note 6)	$R_{\theta JA}$	113 73	—
Junction Temperature		T_J	125	°C
Storage Temperature Range		T_{STG}	-55 to +150	°C

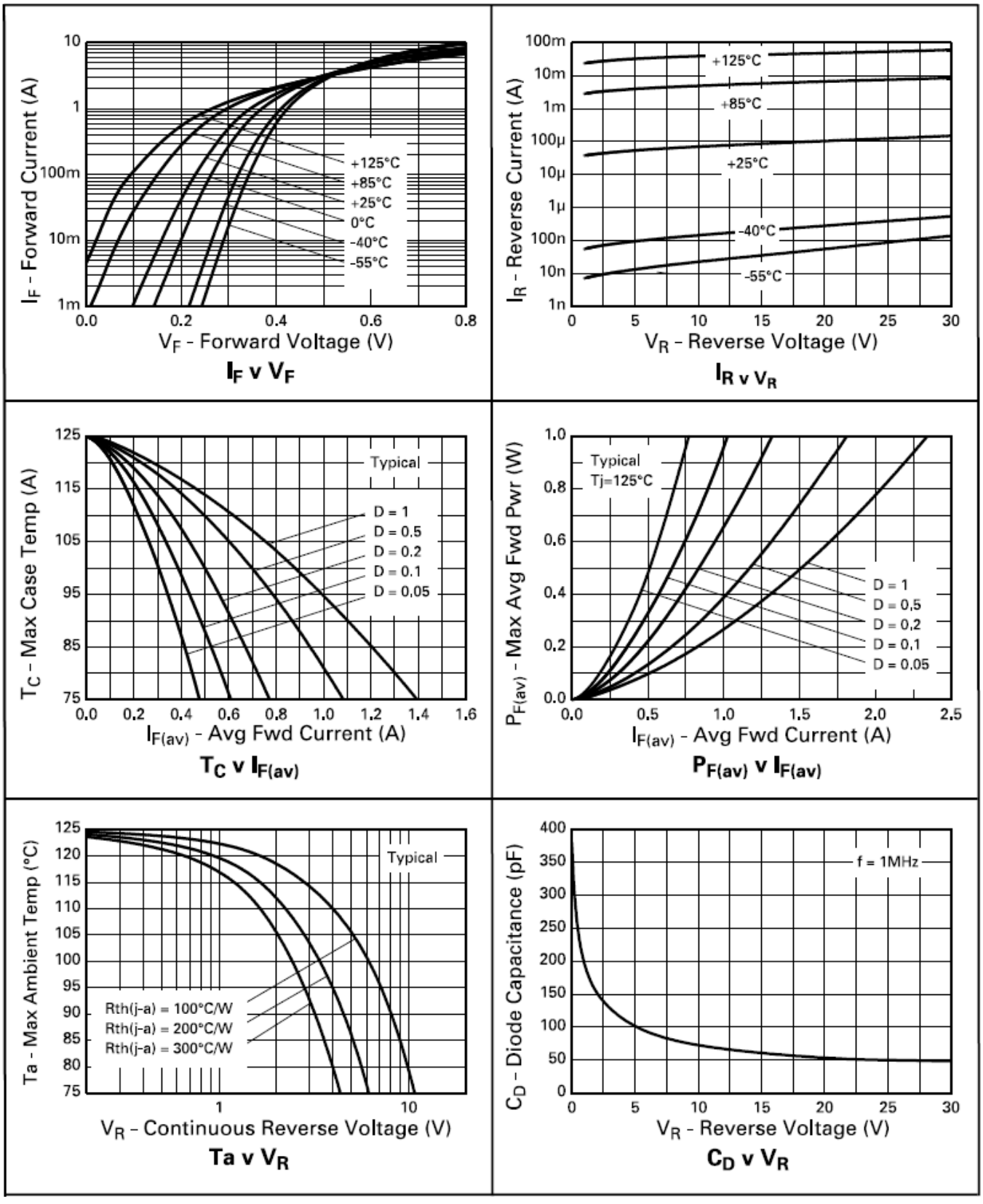
Notes: 5. For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.
6. For a device surface mounted on FR4 PCB measured at t ≤ 5 secs.



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

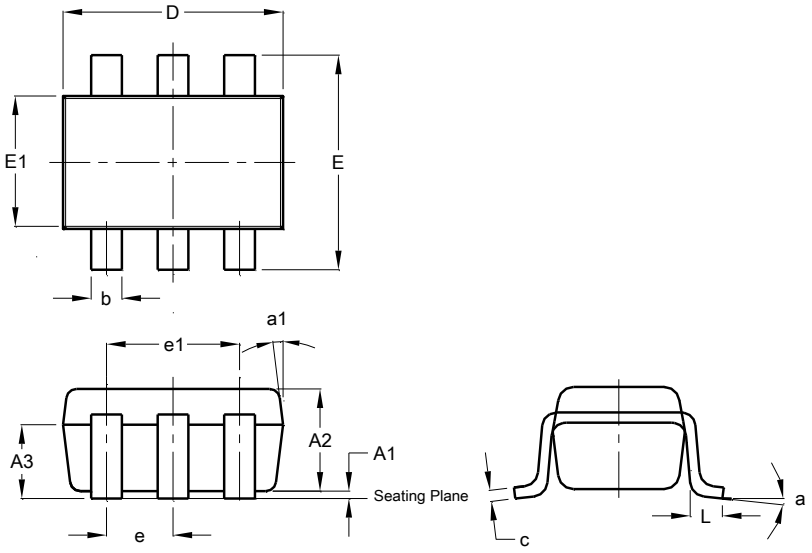
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	$V_{(BR)R}$	40	-	-	V	I_R = 1mA
Forward Voltage (Note 7)	V_F	-	290	325	mV	I_F = 500mA
		-	340	385		I_F = 1000mA
		-	380	445		I_F = 1500mA
		-	420	500		I_F = 2000mA
		-	485	615		I_F = 3000mA
		-	420	-		I_F = 2000mA, T_A = +100°C
Reverse Current	I_R	-	160	300	μA	V_R = 30V
Diode Capacitance	C_D	-	50	-	pF	f = 1MHz, V_R = 25V
Reverse Recovery Time	trr	-	5.5	-	ns	Switched from I_F = 500mA to I_R = 500mA Measured @ I_R = 50mA

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



Package Outline Dimensions

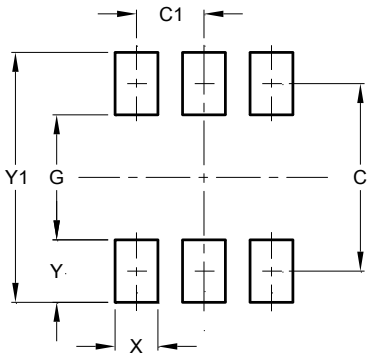
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



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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