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
- **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 Telecomms
- DC – DC Converters
- High Frequency Rectification

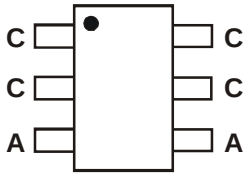
Mechanical Data

- 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



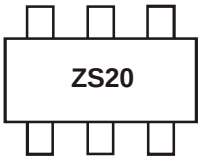
Top View
Pin Out

Ordering Information (Note 1)

Device	Packaging	Shipping
ZHCS2000TA	SOT26	3000/Tape & Reel

Notes: 1. For Packaging Details, go to our website at http://www.diodes.com.

Marking Information



ZS20 = Product Type Marking Code

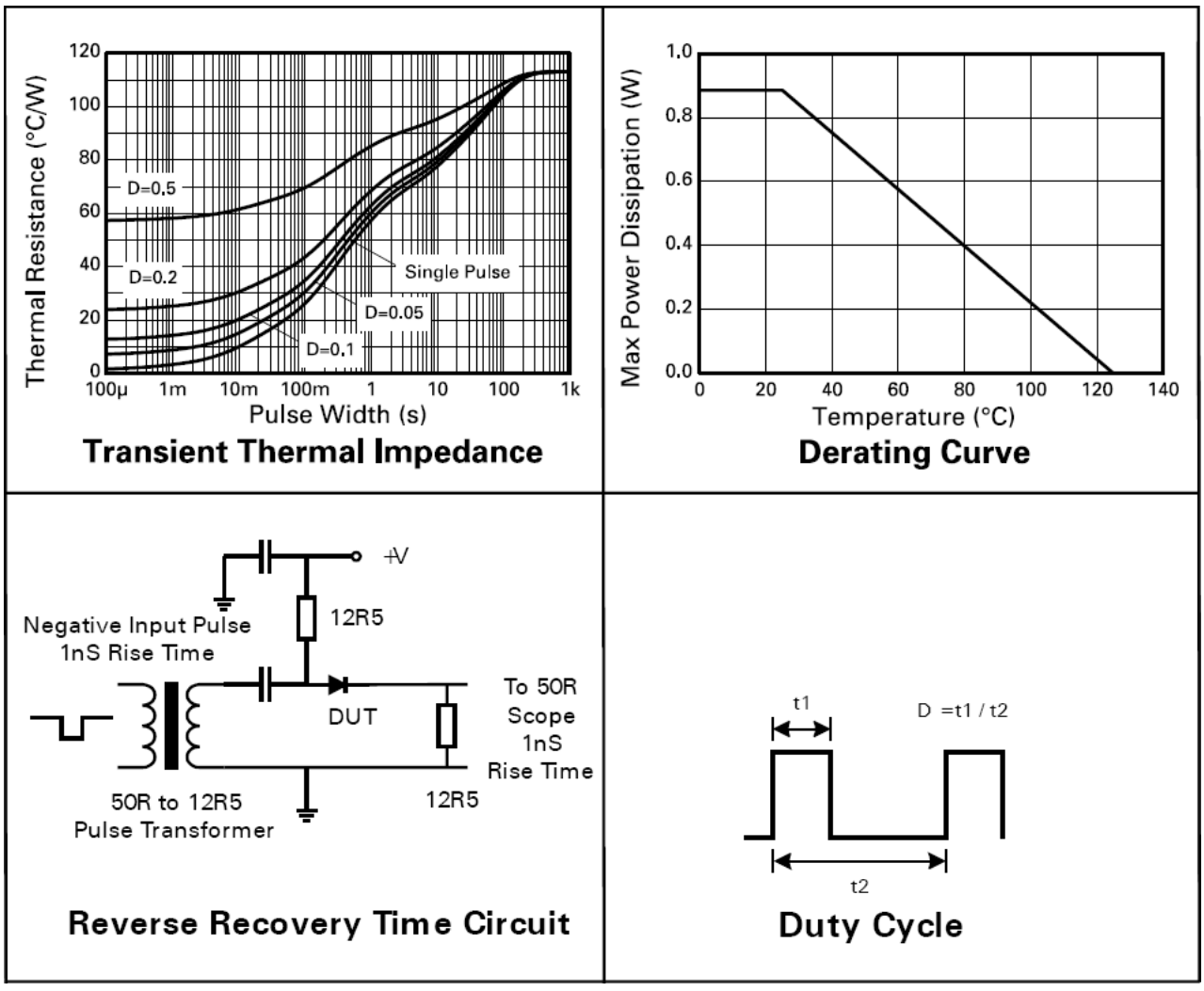
Maximum Ratings @T_A = 25°C unless otherwise specified

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 2) (Note 3)	$R_{\theta JA}$	113 73	
Junction Temperature		T_J	125	°C
Storage Temperature Range		T_{STG}	-55 to +150	°C

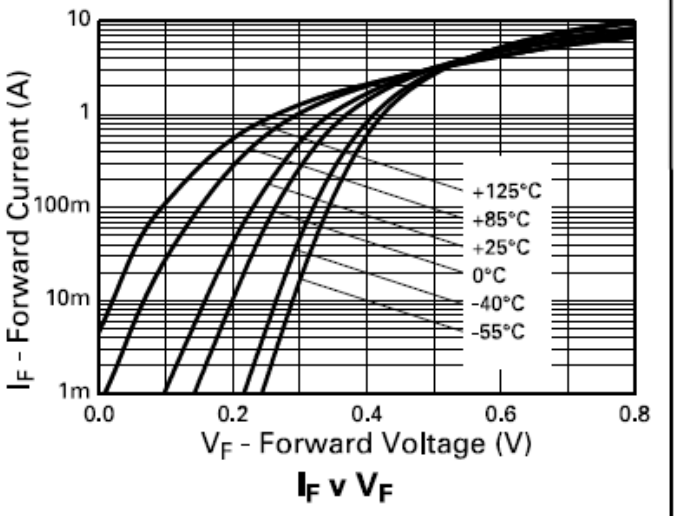
Notes: 2. For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.
3. For a device surface mounted on FR4 PCB measured at t ≤ 5 secs.



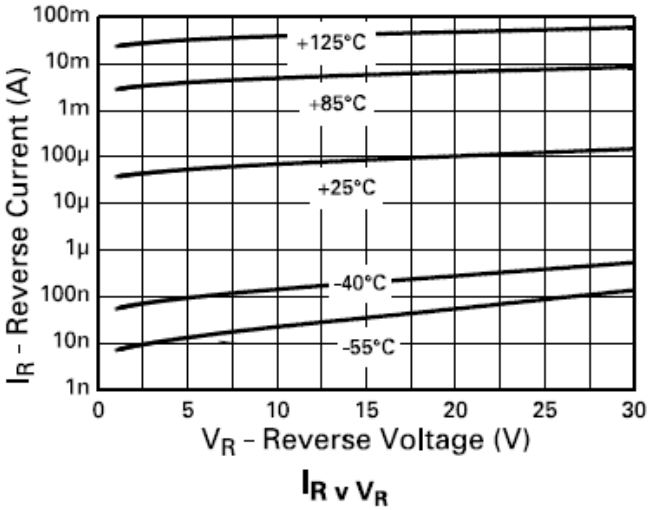
Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	$V_{(BR)R}$	40	-	-	V	I_R = 1mA
Forward Voltage (Note 4)	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

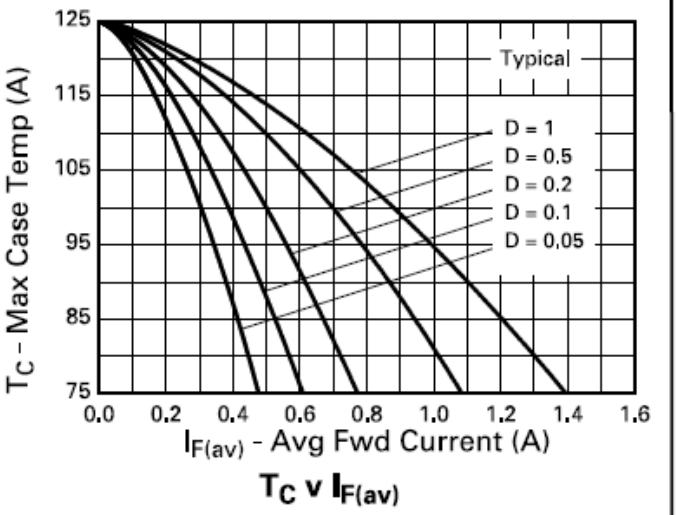
Notes: 4. Measured under pulsed conditions. Pulse width = 300µS. Duty cycle ≤ 2%.



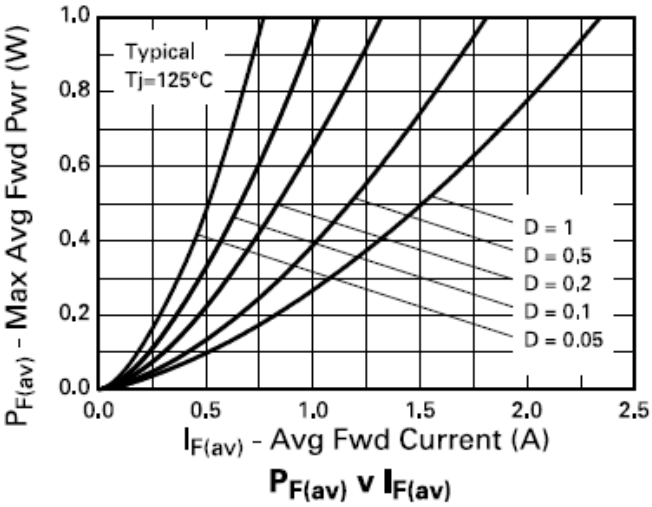
I_F v V_F



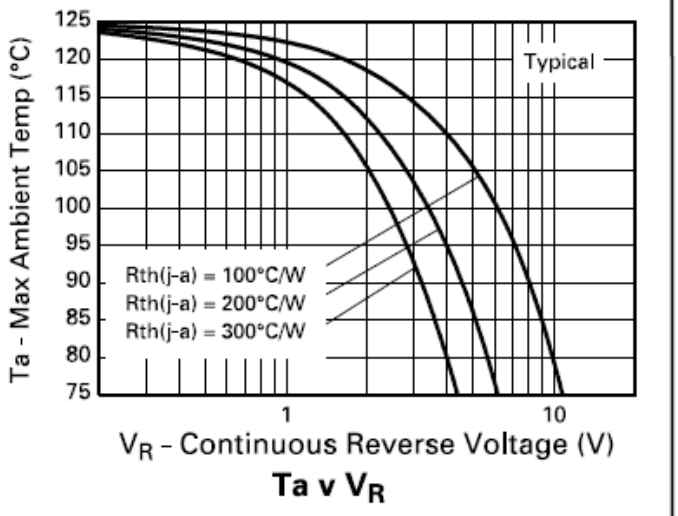
I_R v V_R



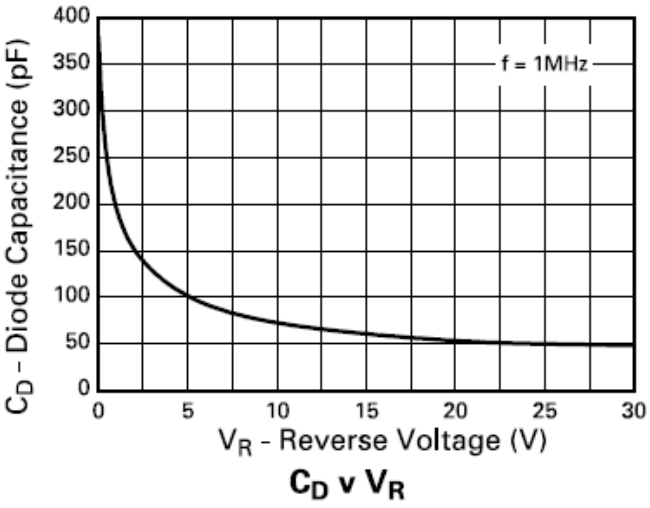
T_C v $I_{F(av)}$



$P_{F(av)}$ v $I_{F(av)}$

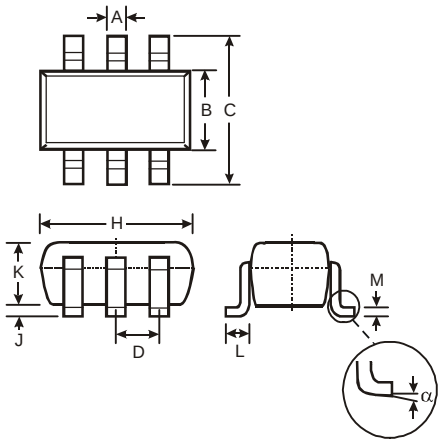


Ta v V_R



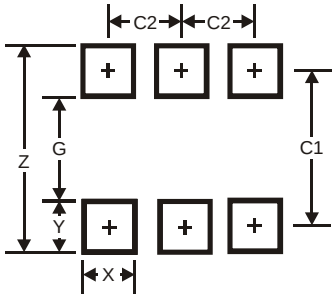
C_D v V_R

Package Outline Dimensions



SOT26			
Dim	**Min**	**Max**	**Typ**
A	0.35	0.50	0.38
B	1.50	1.70	1.60
C	2.70	3.00	2.80
D	—	—	0.95
H	2.90	3.10	3.00
J	0.013	0.10	0.05
K	1.00	1.30	1.10
L	0.35	0.55	0.40
M	0.10	0.20	0.15
α	0°	8°	—
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.20
G	1.60
X	0.55
Y	0.80
C1	2.40
C2	0.95

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