Product Summary

V_R (V)	I_F (mA)	$V_{F(MAX)}$ (mV)	$I_{R(MAX)}$ (µA)
40	500	550	40

Features

- High Current Capability (I_F = 500mA)
- Low V_F
- **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**
- **PPAP Capable (Note 4)**

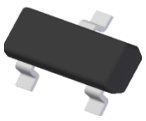
Applications

- DC – DC Converters
- Mobile Telecomms
- PCMIA

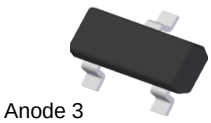
Mechanical Data

- Case: SOT23
- 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 Alloy 42 Leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.008 grams (Approximate)

SOT23



Top View

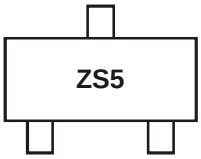


Ordering Information (Note 5)

Part Number	Case	Packaging
ZHCS500TA	SOT23	3000/Tape & Reel
ZHCS500QTA	SOT23	3000/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. 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 https://www.diodes.com/quality/product-compliance-definitions/.
5. For packaging details, go to our website at https://www.diodes.com/design/support/packaging/diodes-packaging/.

Marking Information



ZS5 = 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	500	mA
Forward Voltage @ I_F = 500mA		V_F	550	mV
Average Peak Forward Current; D.C. = 50%		I_{FAV}	1000	mA
Non Repetitive Forward Current	t ≤ 100µs	I_{FSM}	6.75	A
	t ≤ 10ms		3	A

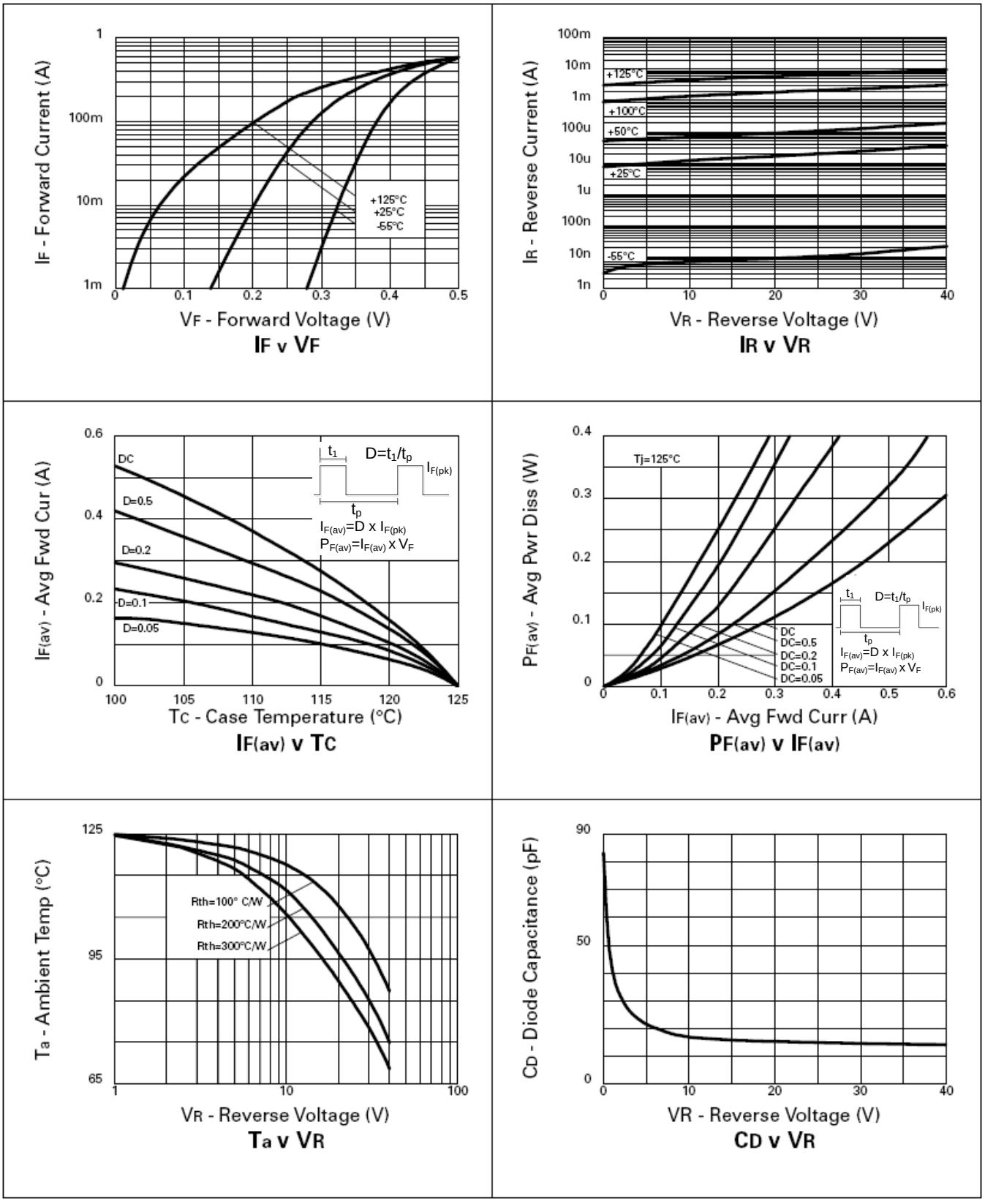
Thermal Characteristics

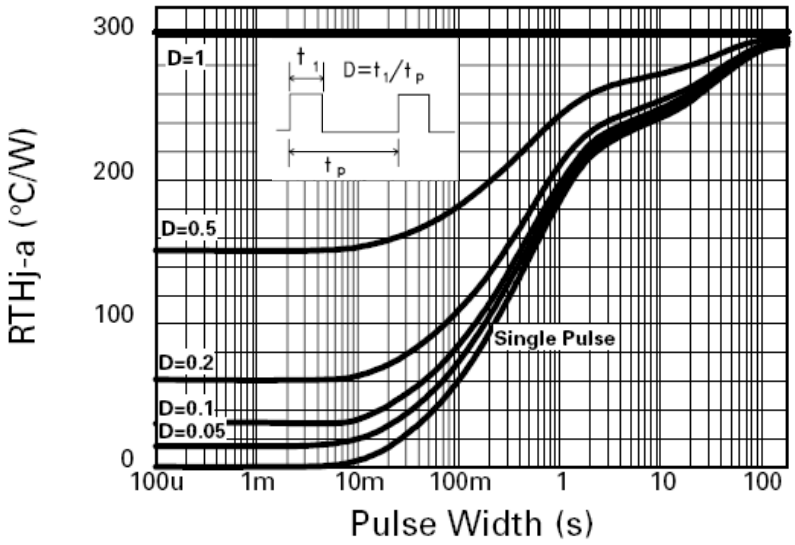
Characteristic	Symbol	Value	Unit
Power Dissipation, T_A = +25°C	P_D	330	mW
Junction Temperature	T_J	125	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

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 (Note 6)	V_F	—	270	300	mV	I_F = 50mA
		—	300	350		I_F = 100mA
		—	370	460		I_F = 250mA
		—	465	550		I_F = 500mA
		—	550	670		I_F = 750mA
		—	640	780		I_F = 1A
		—	810	1050		I_F = 1.5A
		—	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
Reverse Recovery Time	t_{RR}	—	10	—	ns	Switched from I_F = 500mA to I_R = 500mA Measured @ I_R = 50mA

Notes: 6. Measured under pulsed conditions. Pulse width = 300µS. Duty cycle = 2%.

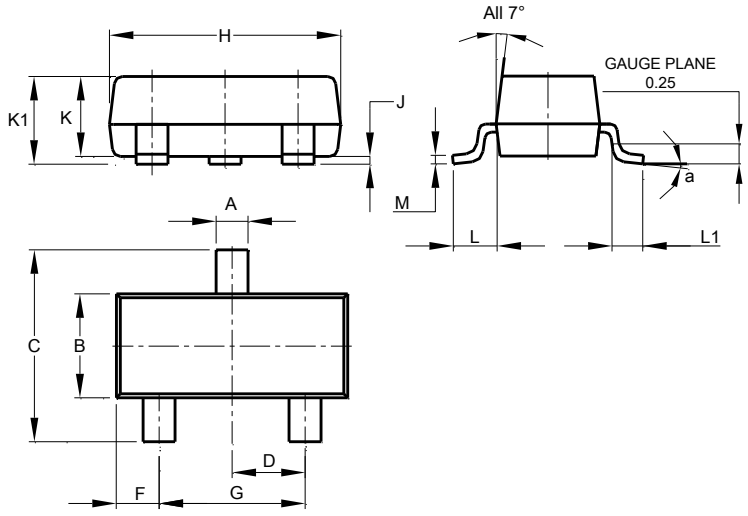




Package Outline Dimensions

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

SOT23

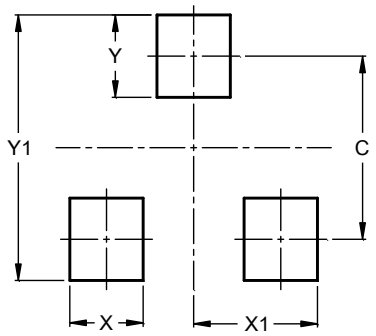


SOT23			
Dim	**Min**	**Max**	**Typ**
A	0.37	0.51	0.40
B	1.20	1.40	1.30
C	2.30	2.50	2.40
D	0.89	1.03	0.915
F	0.45	0.60	0.535
G	1.78	2.05	1.83
H	2.80	3.00	2.90
J	0.013	0.10	0.05
K	0.890	1.00	0.975
K1	0.903	1.10	1.025
L	0.45	0.61	0.55
L1	0.25	0.55	0.40
M	0.085	0.150	0.110
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

SOT23



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9