



THE DATASHEET OF ZHCS506TA



Product Summary(@ $T_A = +25^\circ\text{C}$)

V_{RRM} (V)	I_O (mA)	$V_{F(MAX)}$ (mV)	$I_{R(MAX)}$ (mA)
60	500	630	40

Applications

- DC - DC Converters
- Mobile Telecomms
- PC/MIA

Features and Benefits

- High Current Capability ($I_O = 500\text{mA}$)
- Low V_F
- **Totally Lead-Free Finish & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

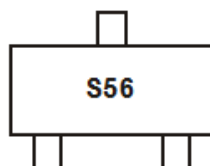
Mechanical Data

- 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 [Ⓢ]
- Weight: 0.0089 grams (approximate)


Ordering Information (Note 4)

Device	Packaging	Shipping
ZHCS506TA	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. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information


S56 = Product Type Marking Code

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

Characteristic	Symbol	Value	Units	
Continuous Reverse Voltage	V _R	60	V	
Continuous Forward Current	I _F	500	mA	
Forward Voltage @I _F = 500mA	V _F	630	mV	
Average Peak Forward Current; D.C. = 50%	I _{FAV}	1000	mA	
Non Repetitive Forward Current	I _{FSM}	t ≤ 100μs	5.5	A
		t ≤ 10ms	2.5	A

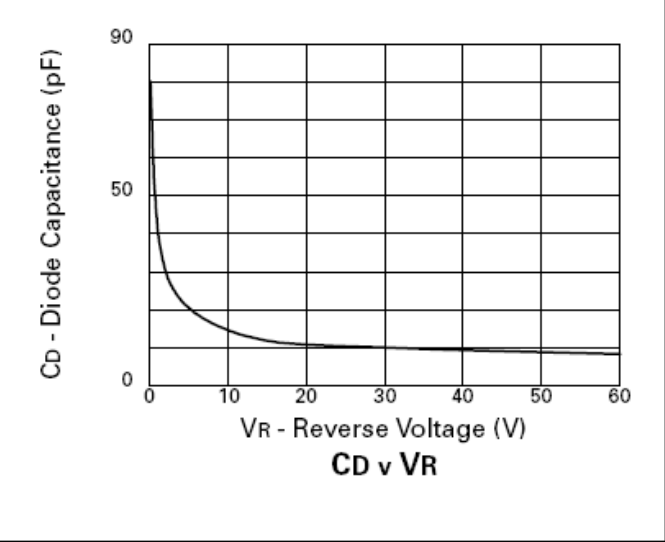
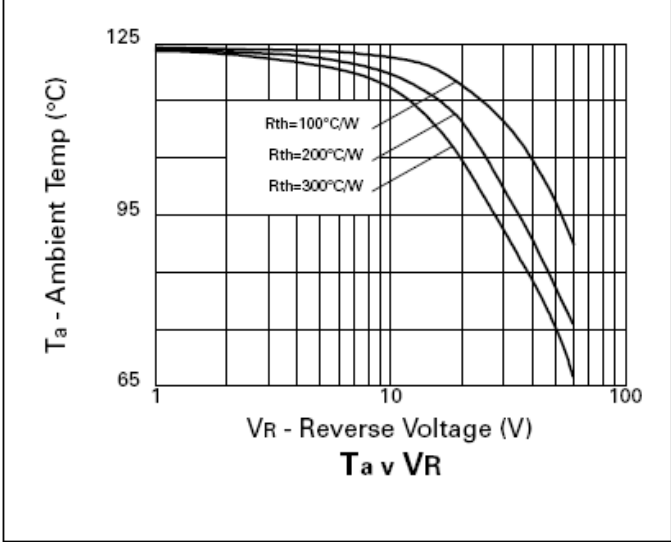
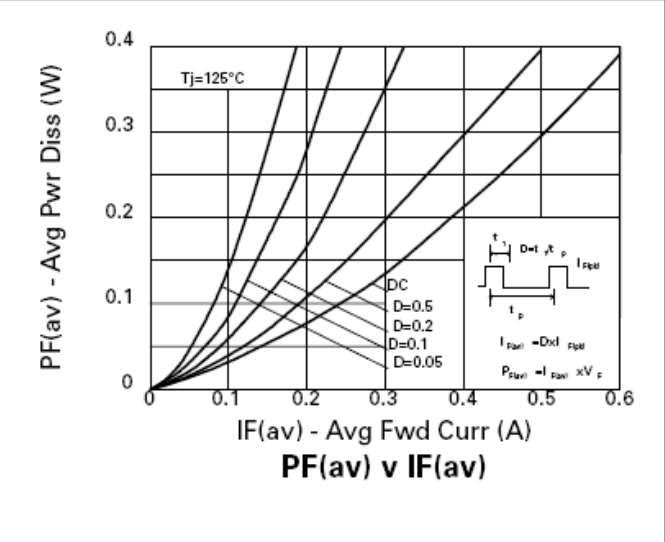
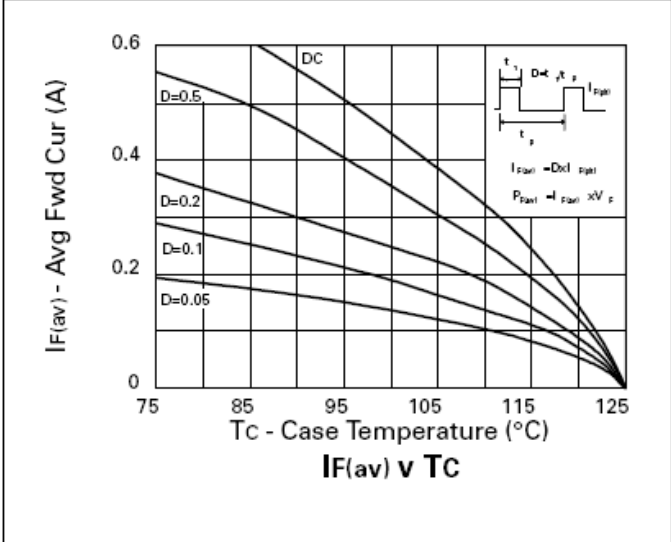
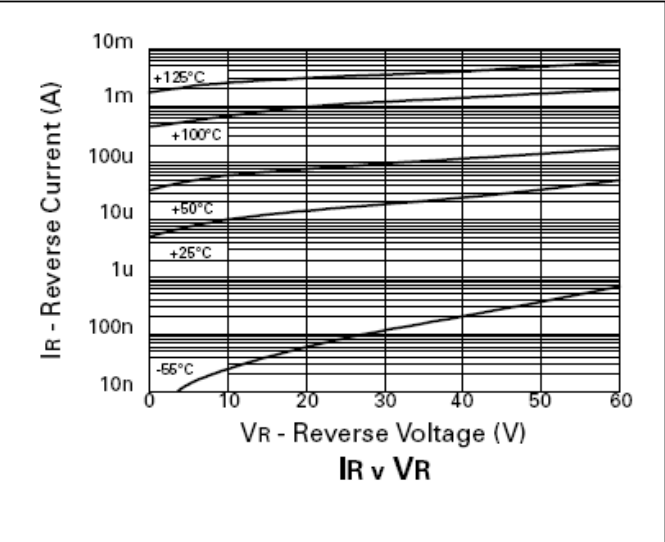
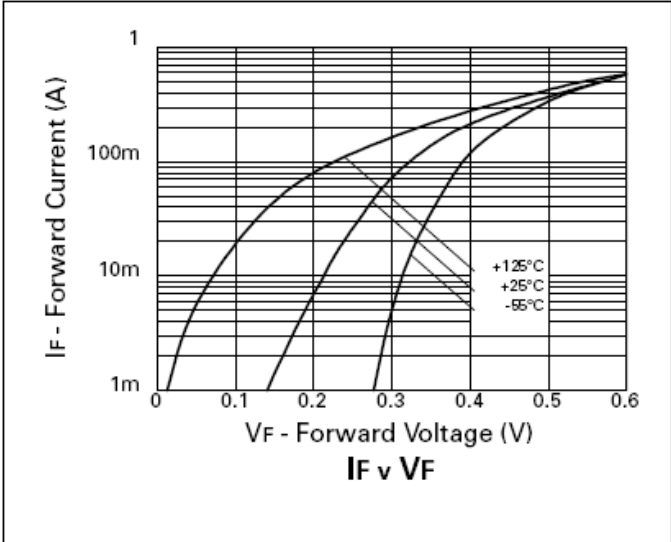
Thermal Characteristics

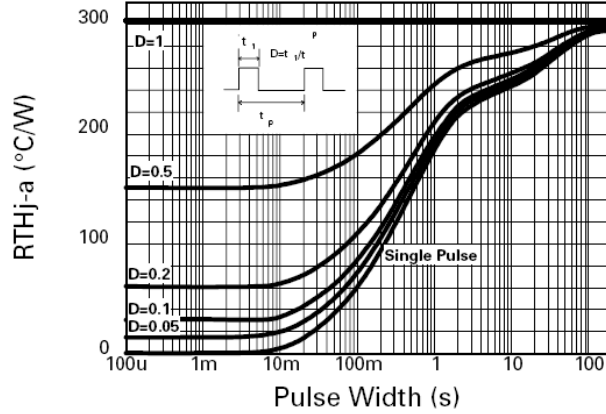
Characteristic	Symbol	Value	Unit
Power Dissipation, T _A = +25°C	P _D	330	mW
Junction Temperature	T _J	+125	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	V _{(BR)R}	60	80	—	V	I _R = 200μA
Forward Voltage (Note 5)	V _F	—	275	310	mV	I _F = 50mA
		—	320	360		I _F = 100mA
		—	415	470		I _F = 250mA
		—	550	630		I _F = 500mA
		—	680	800		I _F = 750mA
		—	820	960		I _F = 1A
		—	1120	1350		I _F = 1.5A
		—	565	—		I _F = 500mA, T _A = +100°C
Reverse Current	I _R	—	20	40	μA	V _R = 45V
Diode Capacitance	C _D	—	20	—	pF	f = 1MHz, V _R = 25V
Reverse Recovery Time	trr	—	10	—	ns	Switched from I _F = 500mA to I _R = 500mA Measured @ I _R = 50mA

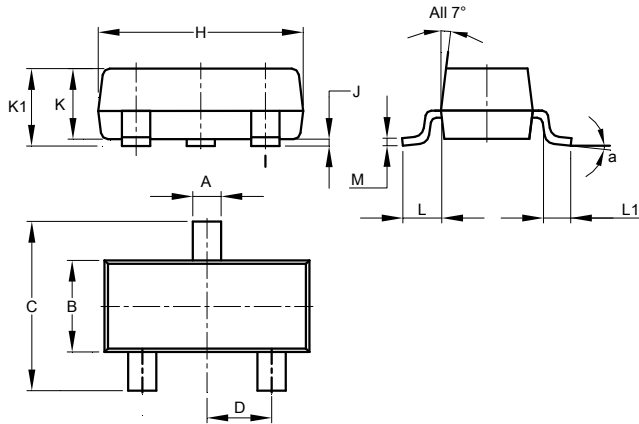
Note: 5. Measured under pulsed conditions. Pulse width = 300μs. Duty cycle 2%.





Package Outline Dimensions

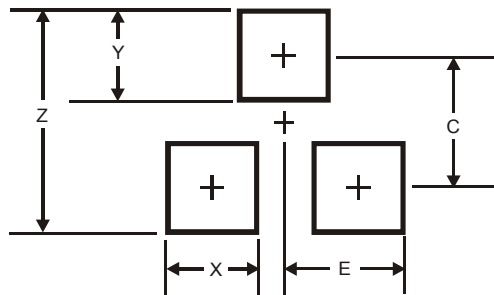
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version



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	8°		
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for latest version.



Dimensions	Value (in mm)
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

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