

# ZHCS2000

## 40V SILICON HIGH CURRENT SCHOTTKY BARRIER DIODE

### SUMMARY

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

### DESCRIPTION

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

### FEATURES

- High current capability
- Low forward voltage ( $V_{Fmax}=0.5V$ )
- Fast recovery time
- Small package size

### APPLICATIONS

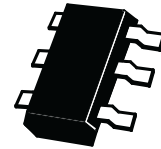
- Mobile telecomms, PCMCIA & SCSI
- DC-DC Conversion
- High frequency rectification

### ORDERING INFORMATION

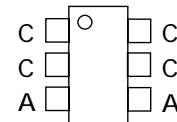
DEVICE	REEL SIZE (inches)	TAPE WIDTH (mm)	QUANTITY PER REEL
ZHCS2000TA	7	8mm embossed	3000 units
ZHCS2000TC	13	8mm embossed	10000 units

### DEVICE MARKING

ZS20



SOT23-6



Top View

# ZHCS2000

## ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Continuous Reverse Voltage	$V_R$	40	V
Forward Current	$I_F$	2	A
Average Peak Forward Current;D.C.=50%	$I_{FAV}$	4	A
Non Repetitive Forward Current $t \leq 100\mu s$ $t \leq 10ms$	$I_{FSM}$	20 10	A A
Power Dissipation at $T_{amb}=25^\circ C$	$P_{tot}$	1.1	W
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ C$
Junction Temperature	$T_j$	125	$^\circ C$

## THERMAL RESISTANCE

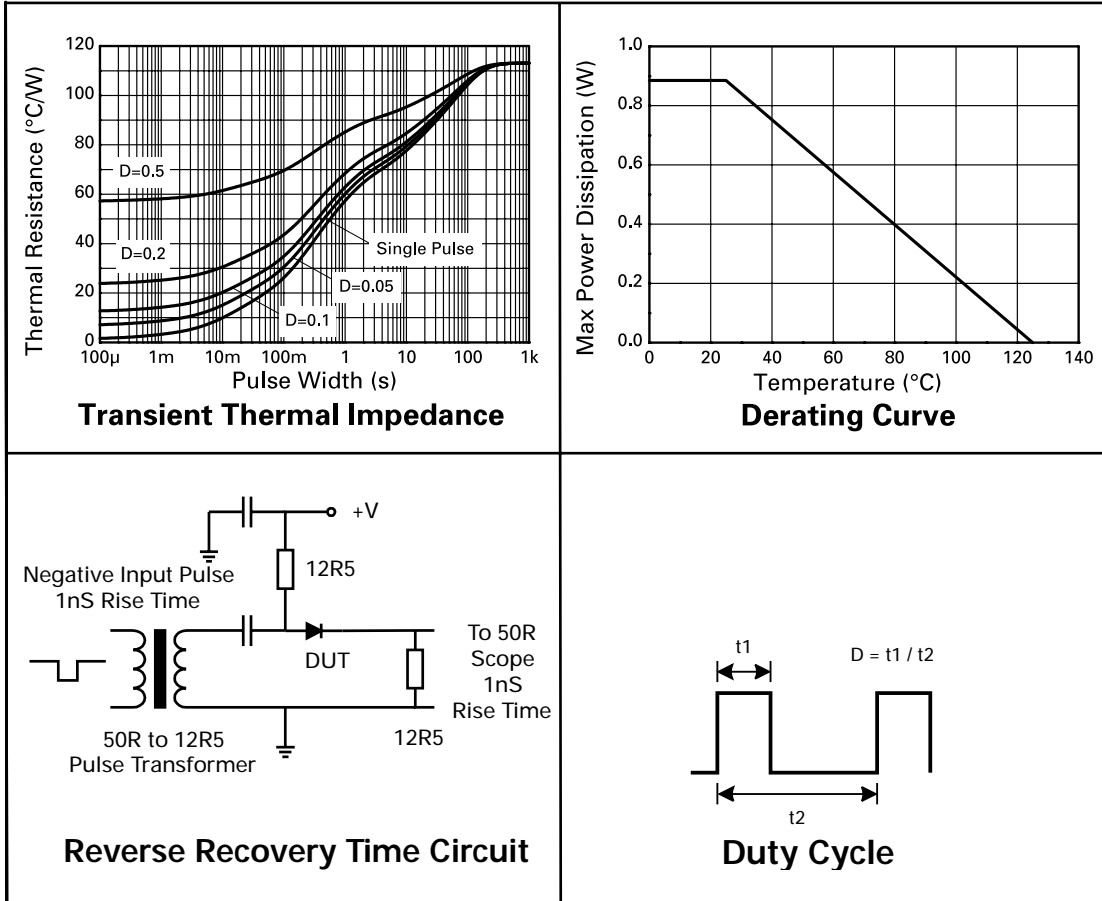
PARAMETER	SYMBOL	VALUE	UNIT
Junction to Ambient (a)	$R_{\theta JA}$	113	$^\circ C/W$
Junction to Ambient (b)	$R_{\theta JA}$	73	$^\circ C/W$

### NOTES

(a) For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions

(b) For a device surface mounted on FR4 PCB measured at  $t \leq 5$  secs.

TYPICAL CHARACTERISTICS



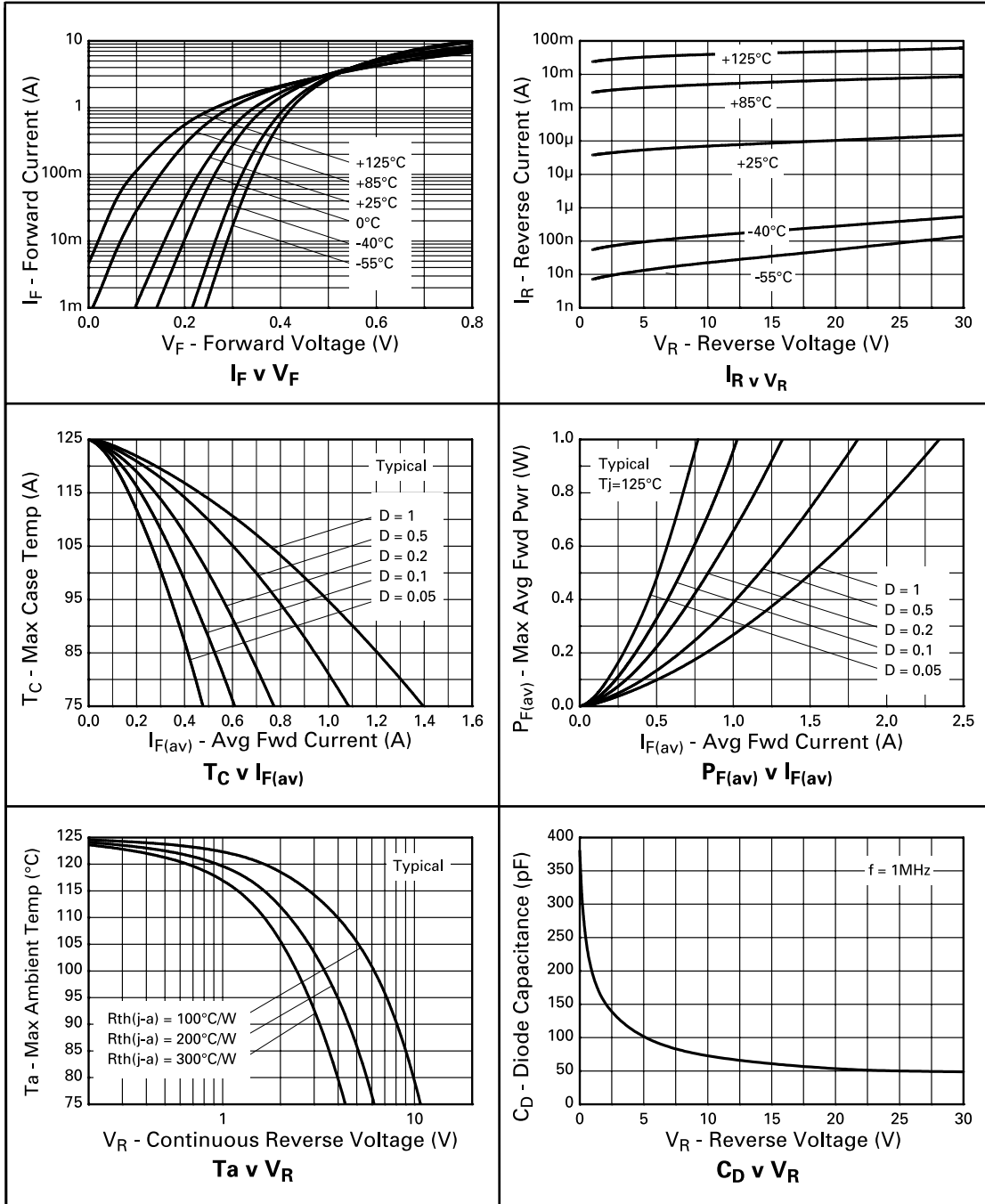
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## ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Reverse Breakdown Voltage	$V_{(BR)R}$	40			V	$I_R = 1\text{mA}$
Forward Voltage	$V_F$		290 340 380 420 485 420	325 385 445 500 615	mV mV mV mV mV mV	$I_F = 500\text{mA}^*$ $I_F = 1000\text{mA}^*$ $I_F = 1500\text{mA}^*$ $I_F = 2000\text{mA}^*$ $I_F = 3000\text{mA}^*$ $I_F = 2000\text{mA}^*, T_{amb} = 100^{\circ}\text{C}^*$
Reverse Current	$I_R$		160	300	$\mu\text{A}$	$V_R = 30\text{V}$
Diode Capacitance	$C_D$		50		pF	$f = 1\text{MHz}, V_R = 25\text{V}$
Reverse Recovery Time	$t_{rr}$		5.5		ns	switched from $I_F = 500\text{mA}$ to $I_R = 500\text{mA}$ Measured at $I_R = 50\text{mA}$

\*Measured under pulsed conditions. Pulse width=300 $\mu\text{s}$ . Duty cycle  $\leq 2\%$

TYPICAL CHARACTERISTICS



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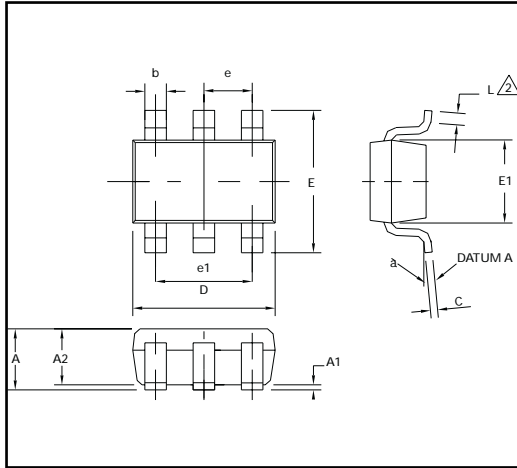
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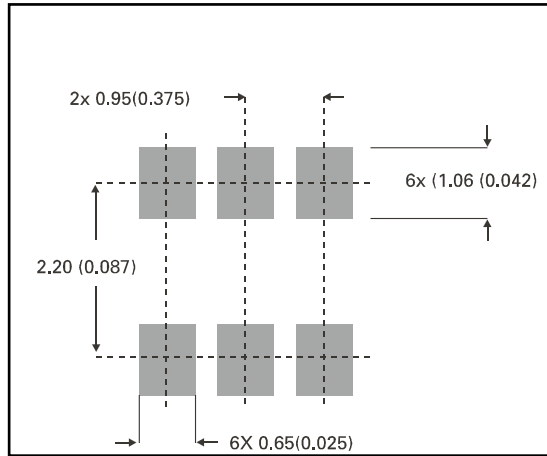


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## PACKAGE DIMENSIONS



## PAD LAYOUT DETAILS



DIM	Millimetres		Inches	
	Min	Max	Min	Max
A	0.90	1.45	0.35	0.057
A1	0.00	0.15	0	0.006
A2	0.90	1.30	0.035	0.051
b	0.35	0.50	0.014	0.019
C	0.09	0.20	0.0035	0.008
D	2.80	3.00	0.110	0.118
E	2.60	3.00	0.102	0.118
E1	1.50	1.75	0.059	0.069
L	0.10	0.60	0.004	0.002
e	0.95 REF		0.037 REF	
e1	1.90 REF		0.074 REF	

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