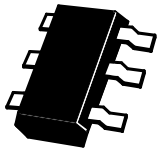
40V SILICON HIGH CURRENT SCHOTTKY BARRIER DIODE

SUMMARY

V_R=40V; I_C= 2A



SOT23-6

DESCRIPTION

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

FEATURES

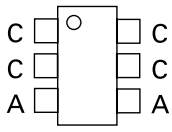
- High current capability
- Low forward voltage ($V_F$max=0.5V)
- Fast recovery time
- Small package size

APPLICATIONS

- Mobile telecomms, PCMIA & 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



Top View

DEVICE MARKING

ZS2

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≤100μs t≤10ms	I_{FSM}	20 10	A A
Power Dissipation at T_{amb}=25°C	P_{tot}	1.1	W
Storage Temperature Range	T_{stg}	-55 to +150	°C
Junction Temperature	T_j	125	°C

THERMAL RESISTANCE

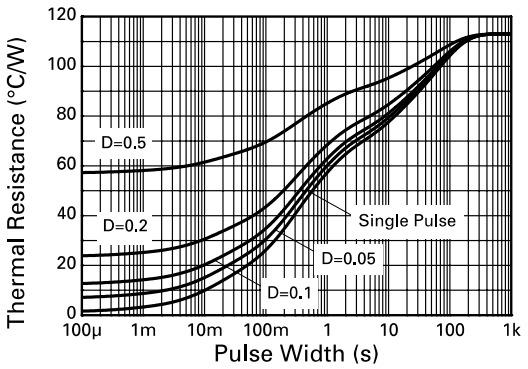
PARAMETER	SYMBOL	VALUE	UNIT
Junction to Ambient (a)	$R_{\theta JA}$	113	°C/W
Junction to Ambient (b)	$R_{\theta JA}$	73	°C/W

NOTES

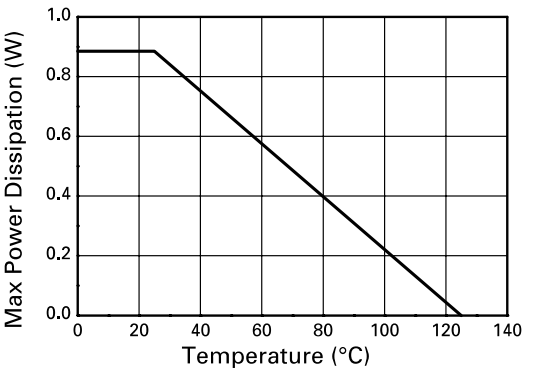
(a) For a device surface mounted on 25mm x 25mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions

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

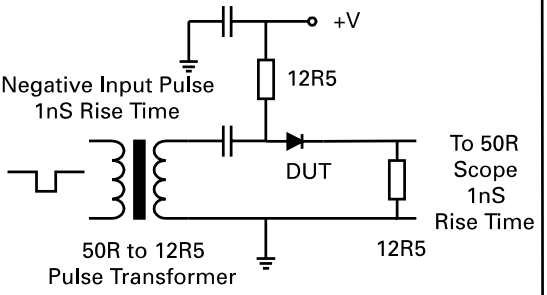
TYPICAL CHARACTERISTICS



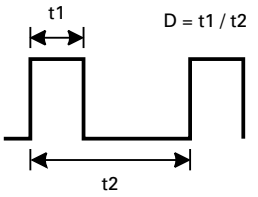
Transient Thermal Impedance



Derating Curve



Reverse Recovery Time Circuit



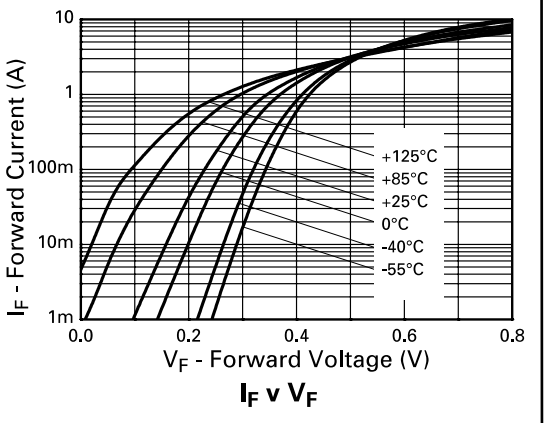
Duty Cycle

ELECTRICAL CHARACTERISTICS (at T_{amb} = 25°C unless otherwise stated).

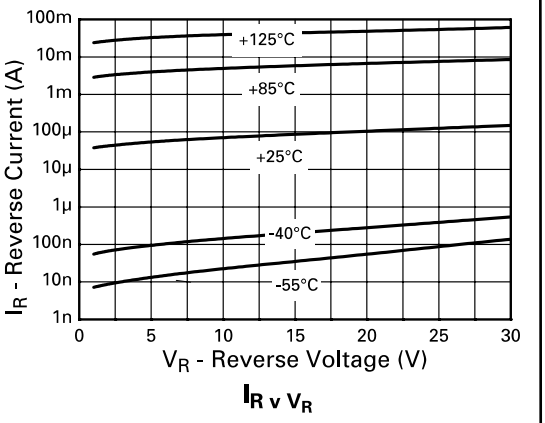
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Reverse Breakdown Voltage	$V_{(BR)R}$	40			V	I_R=1mA
Forward Voltage	V_F		290 340 380 420 485 420	325 385 445 500 615	mV mV mV mV mV mV	I_F=500mA* I_F=1000mA* I_F=1500mA* I_F=2000mA* I_F=3000mA* I_F=2000mA*,T_{amb}=100°C*
Reverse Current	I_R		160	300	µA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

*Measured under pulsed conditions. Pulse width=300µs. Duty cycle ≤2%

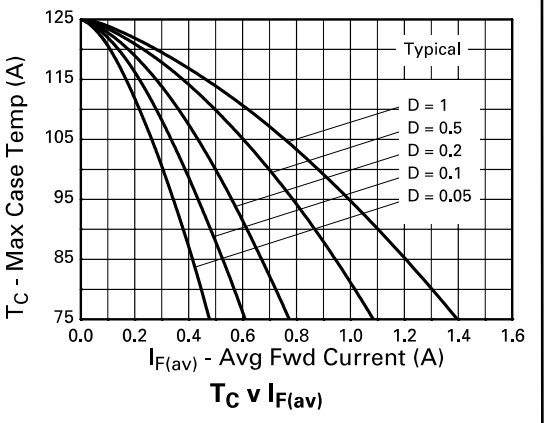
TYPICAL CHARACTERISTICS



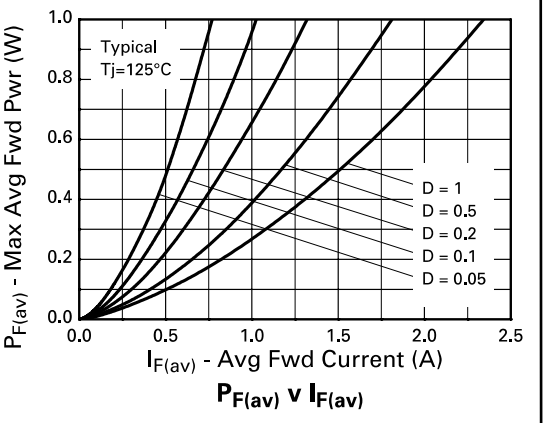
I_F v V_F



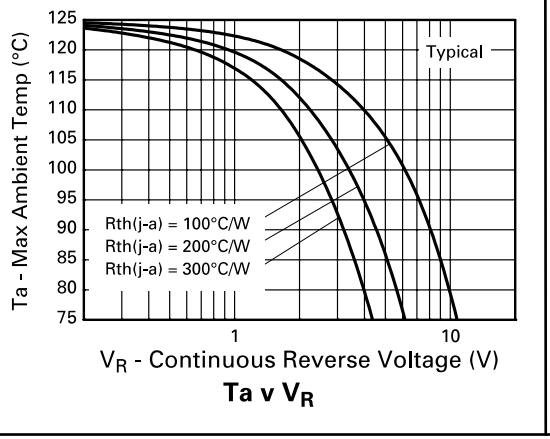
I_R v V_R



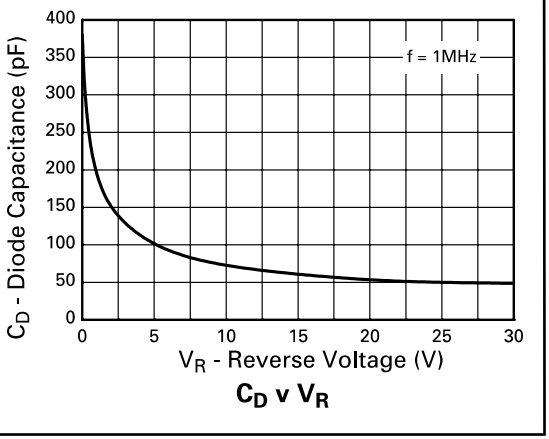
T_C v $I_{F(av)}$



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



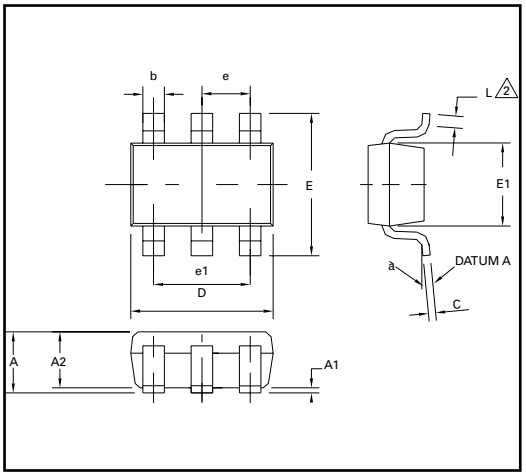
Ta v V_R



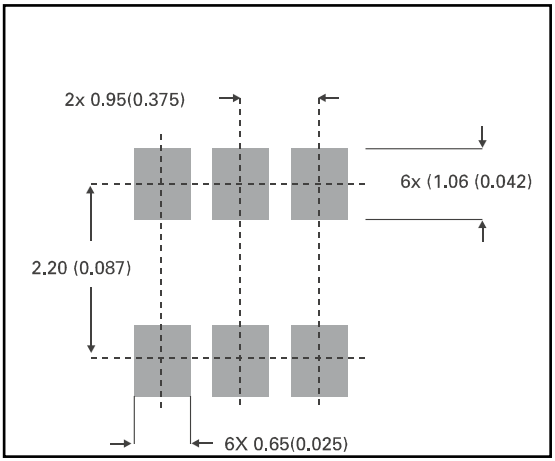
C_D v V_R

ZHCS2000

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	

Zetex plc.
Fields New Road, Chadderton, Oldham, OL9-8NP, United Kingdom.
Telephone: (44)161 622 4422 (Sales), (44)161 622 4444 (General Enquiries)
Fax: (44)161 622 4420

Zetex GmbH
Streitfeldstraße 19
D-81673 München
Germany
Telefon: (49) 89 45 49 49 0
Fax: (49) 89 45 49 49 49

Zetex Inc.
47 Mall Drive, Unit 4
Commack NY 11725
USA
Telephone: (631) 543-7100
Fax: (631) 864-7630

Zetex (Asia) Ltd.
3701-04 Metroplaza, Tower 1
Hing Fong Road,
Kwai Fong, Hong Kong
Telephone:(852) 26100 611
Fax: (852) 24250 494

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