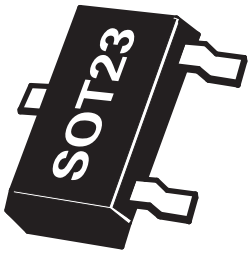
ZLLS1000

40V SILICON HIGH CURRENT LOW LEAKAGE SCHOTTKY DIODE

SUMMARY

Schottky Diode V_R = 40V; I_F = 1.16A; I_R = 20μA



DESCRIPTION

This compact SOT23 packaged Schottky diode offers users an excellent performance combination comprising high current operation, extremely low leakage and low forward voltage ensuring suitability for applications requiring efficient operation at higher temperatures (above 85°C) see Operational Efficiency chart on page 4.

Key benefits:

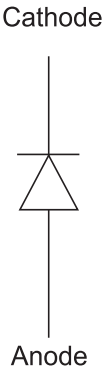
Performance capability equivalent to much larger packages

Improved circuit efficiency & power levels

PCB area savings

FEATURES

- **Low equivalent on resistance**
- Extremely low leakage (20μA @30V)
- High current capability (I_F = 1.16A)
- Low V_F, fast switching Schottky
- SOT23 package
- ZLLS1000 complements low temperature equivalent ZHCS1000
- Package thermally rated to 150°C

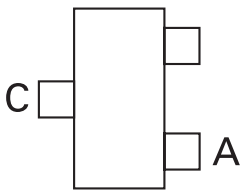


APPLICATIONS

- DC - DC converters
- Strobes
- Mobile phones
- Charging circuits
- Motor control

ORDERING INFORMATION

DEVICE	REEL (inches)	TAPE WIDTH (mm)	QUANTITY PER REEL
ZLLS1000TA	7	8mm embossed	3000 units
ZLLS1000TC	13	8mm embossed	10000 units



Top view

DEVICE MARKING

L10

ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	VALUE	UNIT
Schottky diode				
Continuous reverse voltage		V_R	40	V
Forward current		I_F	1.16	A
Peak repetitive forward current Rectangular pulse duty cycle		I_{FPK}	1.88	A
Non repetitive forward current	t=≤100μs	I_{FSM}	22	A
	t=≤10ms		6.4	A
Package				
Power dissipation at T_{amb}=25°C single die continuous		P_D	625	mW
single die measured at t<5 secs			840	mW
Storage temperature range		T_{stg}	-55 to +150	°C
Junction temperature		T_j	150	°C

THERMAL RESISTANCE

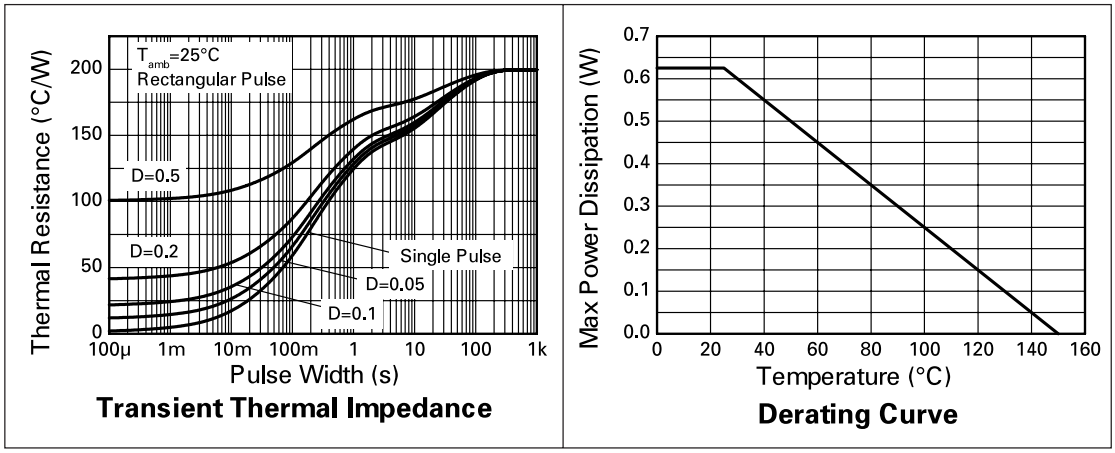
PARAMETER	SYMBOL	VALUE	UNIT
Junction to ambient (a)	$R_{\theta JA}$	200	°C/W
Junction to ambient (b)	$R_{\theta JA}$	149	°C/W

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<5secs.

TYPICAL CHARACTERISTICS



ZLLS1000

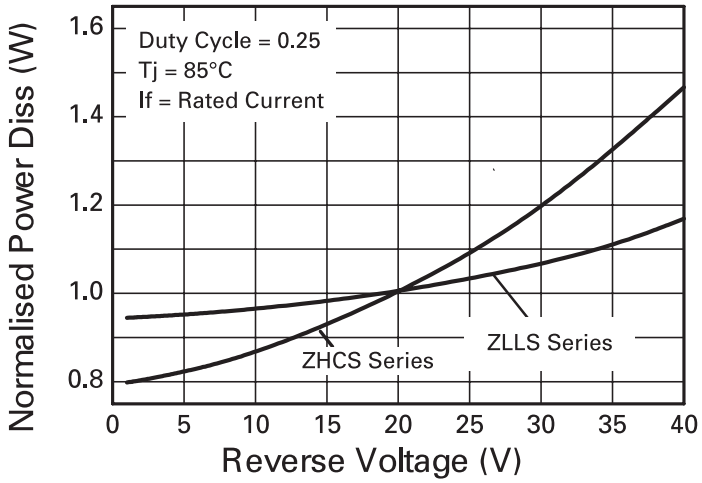
ELECTRICAL CHARACTERISTICS (at Tamb = 25°C unless otherwise stated)

SCHOTTKY DIODE CHARACTERISTICS						
PARAMETER	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**	**CONDITIONS**
Reverse breakdown voltage	$V_{(BR)R}$	40			V	I_R=500µA
Forward voltage	V_F		280	310	mV	I_F=50 mA*
			310	340	mV	I_F=100 mA*
			355	390	mV	I_F=250mA*
			405	460	mV	I_F=500mA*
			450	510	mV	I_F=750mA*
			490	560	mV	I_F=1A*
			570	660	mV	I_F=1.5A*
			475		mV	I_F=1000mA*,Ta = 100°C
Reverse current	I_R		11	20	µA	V_R=30V
			750		µA	V_R=30V,Ta = 85°C
Diode capacitance	C_D		26		pF	f=1MHz,VR=30V
Reverse recovery time Reverse recovery charge	t_{rr} Q_{rr}		4 335		ns nC	Switched from I_F = 500mA to V_R = 5.5V Measured @ I_R 50mA. di /d t = 500mA/ ns. Rsource = 6Ω;Rload= 10Ω

*Measured under pulsed conditions. Pulse width = 300µS. Duty Cycle ≤ 2%.

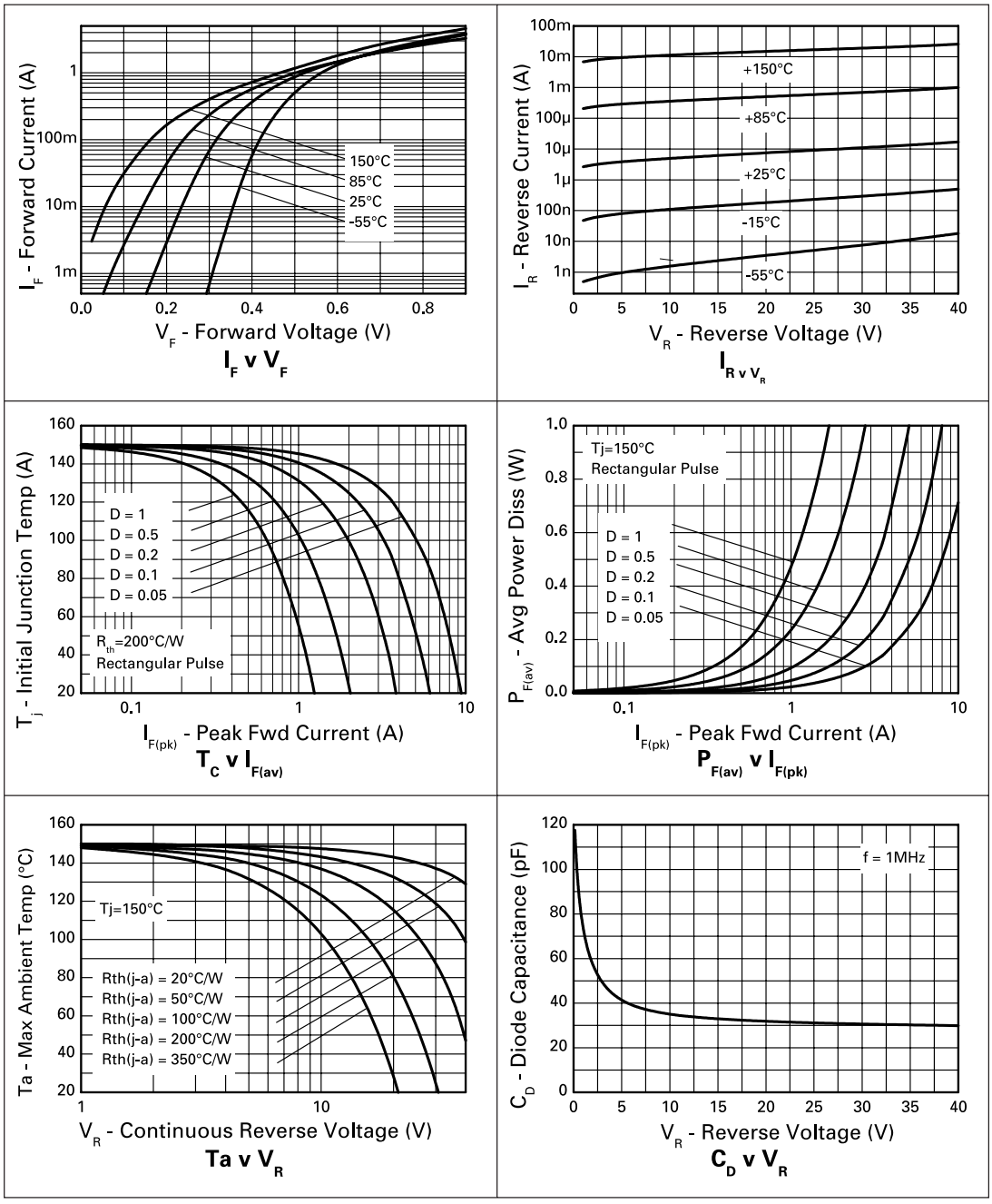
Operational Efficiency chart

The operational efficiency chart indicates the beneficial use of the ZLLS Series diodes in applications requiring higher voltage, higher temperature operation. Circuits requiring Low voltage Low temperature operation will benefit from low V_F ZHCS using Zetex Series diodes.



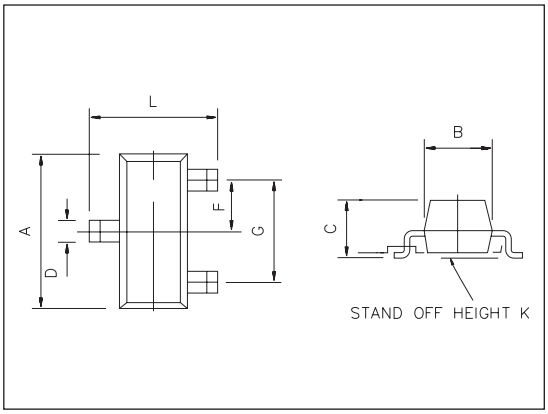
Operational Efficiency Example

TYPICAL CHARACTERISTICS

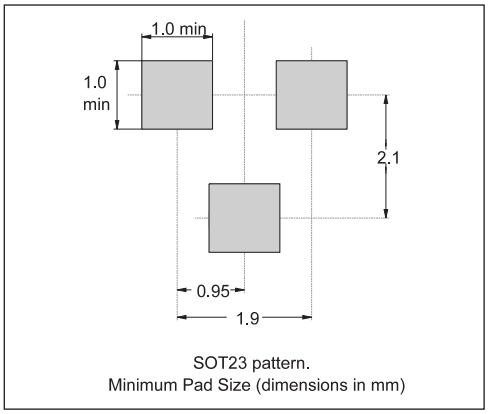


ZLLS1000

Package Outline



Pad Layout



SOT23 pattern.
Minimum Pad Size (dimensions in mm)

Package Dimensions

DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.67	3.05	0.105	0.120
B	1.20	1.40	0.047	0.055
C	–	1.10	–	0.043
D	0.37	0.53	0.0145	0.021
F	0.085	0.15	0.0033	0.0059
G	NOM 1.9		NOM 0.075	
K	0.01	0.10	0.0004	0.004
L	2.10	2.50	0.0825	0.0985

© Zetex Semiconductors plc 2006

Europe	Americas	Asia Pacific	Corporate Headquarters
Zetex GmbH Streitfeldstraße 19 D-81673 München Germany	Zetex Inc 700 Veterans Memorial Hwy Hauppauge, NY 11788 USA	Zetex (Asia) Ltd 3701-04 Metroplaza Tower 1 Hing Fong Road, Kwai Fong Hong Kong	Zetex Semiconductors plc Zetex Technology Park Chadderton, Oldham, OL9 9LL United Kingdom
Telefon: (49) 89 45 49 49 0 Fax: (49) 89 45 49 49 49 europe.sales@zetex.com	Telephone: (1) 631 360 2222 Fax: (1) 631 360 8222 usa.sales@zetex.com	Telephone: (852) 26100 611 Fax: (852) 24250 494 asia.sales@zetex.com	Telephone (44) 161 622 4444 Fax: (44) 161 622 4446 hq@zetex.com

These offices are supported by agents and distributors in major countries world-wide.

This publication is issued to provide outline information only which (unless agreed by the Company in writing) may not be used, applied or reproduced for any purpose or form part of any order or contract or be regarded as a representation relating to the products or services concerned. The Company reserves the right to alter without notice the specification, design, price or conditions of supply of any product or service.

For the latest product information, log on to www.zetex.com