

ZLLS400

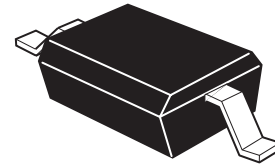
40V SILICON HIGH CURRENT LOW LEAKAGE SCHOTTKY DIODE

SUMMARY

Schottky Diode $V_R = 40V$; $I_F = 0.52A$; $I_R = 10\mu A$

DESCRIPTION

This compact SOD323 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.



SOD323

key benefits:

- Performance capability equivalent to much larger packages
- Improved circuit efficiency and power levels
- PCB area savings

FEATURES

- Low equivalent on resistance
- Extremely low leakage ($10\mu A$ @30V)
- High current capability ($I_F = 0.52A$)
- Low VF, fast switching Schottky
- SOD323 package
- ZLLS400 complements low temperature equivalent ZHCS400
- Package thermally rated to 150°C

APPLICATIONS

- DC - DC converters
- Cellular / mobile phones
- Charging circuits
- Motor control

ORDERING INFORMATION

DEVICE	REEL (inches)	TAPE WIDTH (mm)	QUANTITY PER REEL
ZLLS400TA	7	8mm embossed	3000 units
ZLLS400TC	13	8mm embossed	10,000 units

DEVICE MARKING

40

Cathode



Anode

Text for example only



TOP VIEW

ZLLS400

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT	
Schottky diode				
Continuous reverse voltage	V_R	40	V	
Forward current	I_F	0.52	A	
Peak repetitive forward current Rectangular pulse duty cycle	I_{FPK}	0.85	A	
Non repetitive forward current		$t \leq 100\mu s$	12	A
		$t \leq 10ms$	2.5	A
Package				
Power dissipation at $T_{amb}=25^\circ C$ Single die continuous	P_D	330	mW	
Single die measured at $t < 5$ secs		390	mW	
Storage temperature range	T_{stg}	-55 to +150	$^\circ C$	
Junction temperature	T_j	150	$^\circ C$	

THERMAL RESISTANCE

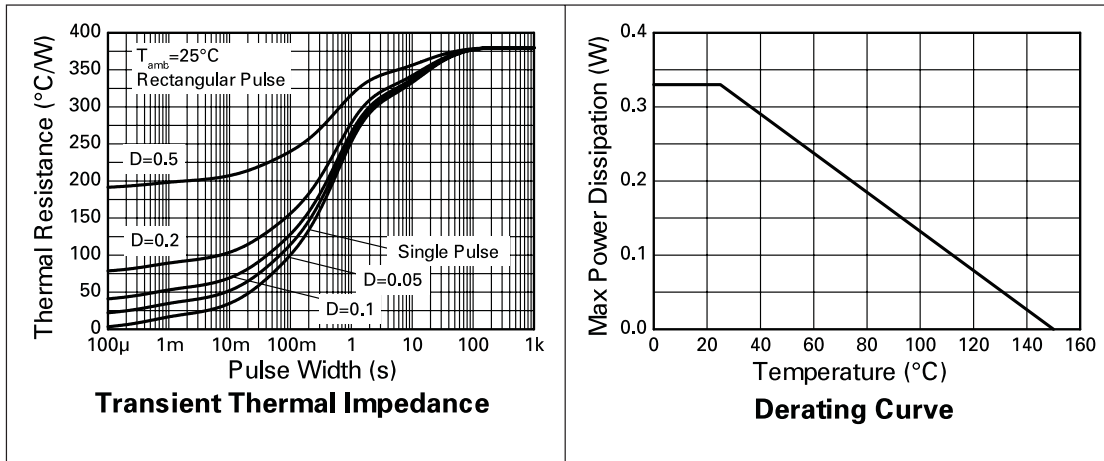
PARAMETER	SYMBOL	VALUE	UNIT
Junction to ambient ^(a)	$R_{\theta JA}$	379	$^\circ C/W$
Junction to ambient ^(b)	$R_{\theta JA}$	317	$^\circ C/W$

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 $t < 5$ secs.

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TYPICAL CHARACTERISTICS



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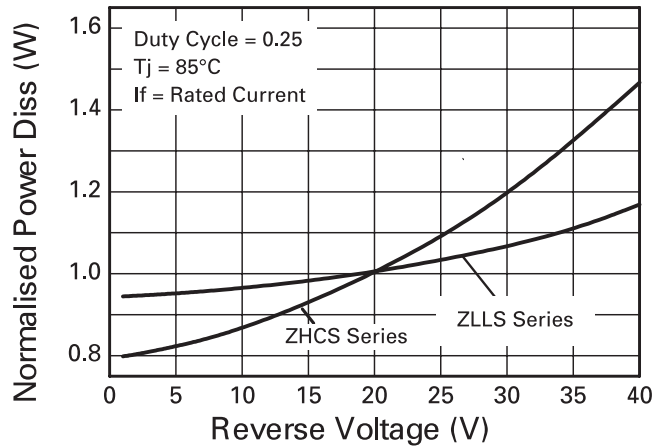
ELECTRICAL CHARACTERISTICS (at Tamb = 25°C unless otherwise stated)

SCHOTTKY DIODE CHARACTERISTICS						
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Reverse breakdown voltage	$V_{(BR)R}$	40			V	$I_R=200\mu A$
Forward voltage	V_F		305	360	mV	$I_F=50mA^*$
			335	390	mV	$I_F=100mA^*$
			395	450	mV	$I_F=250mA^*$
			445	500	mV	$I_F=400mA^*$
			550	630	mV	$I_F=750mA^*$
			620	710	mV	$I_F=1A^*$
			710	800	mV	$I_F=1.5A^*$
			405		mV	$I_F=400mA^*, T_a = 100^\circ C$
Reverse current	I_R		6	10	μA	$V_R=30V$
			370		μA	$V_R=30V, T_a = 85^\circ C$
Diode capacitance	C_D		15		pF	$f=1MHz, V_R=30V$
Reverse recovery time	t_{rr}		3		ns	Switched from $I_F = 500mA$ to $V_R = 5.5V$ Measured @ $I_R 50mA$ $di/dt = 500mA/ns$ $R_{source} = 6\Omega; R_{load} = 10\Omega$
Reverse recovery charge	Q_{rr}		210		pC	

*Measured under pulsed conditions. Pulse width = 300 μ S. Duty cycle \leq 2%.

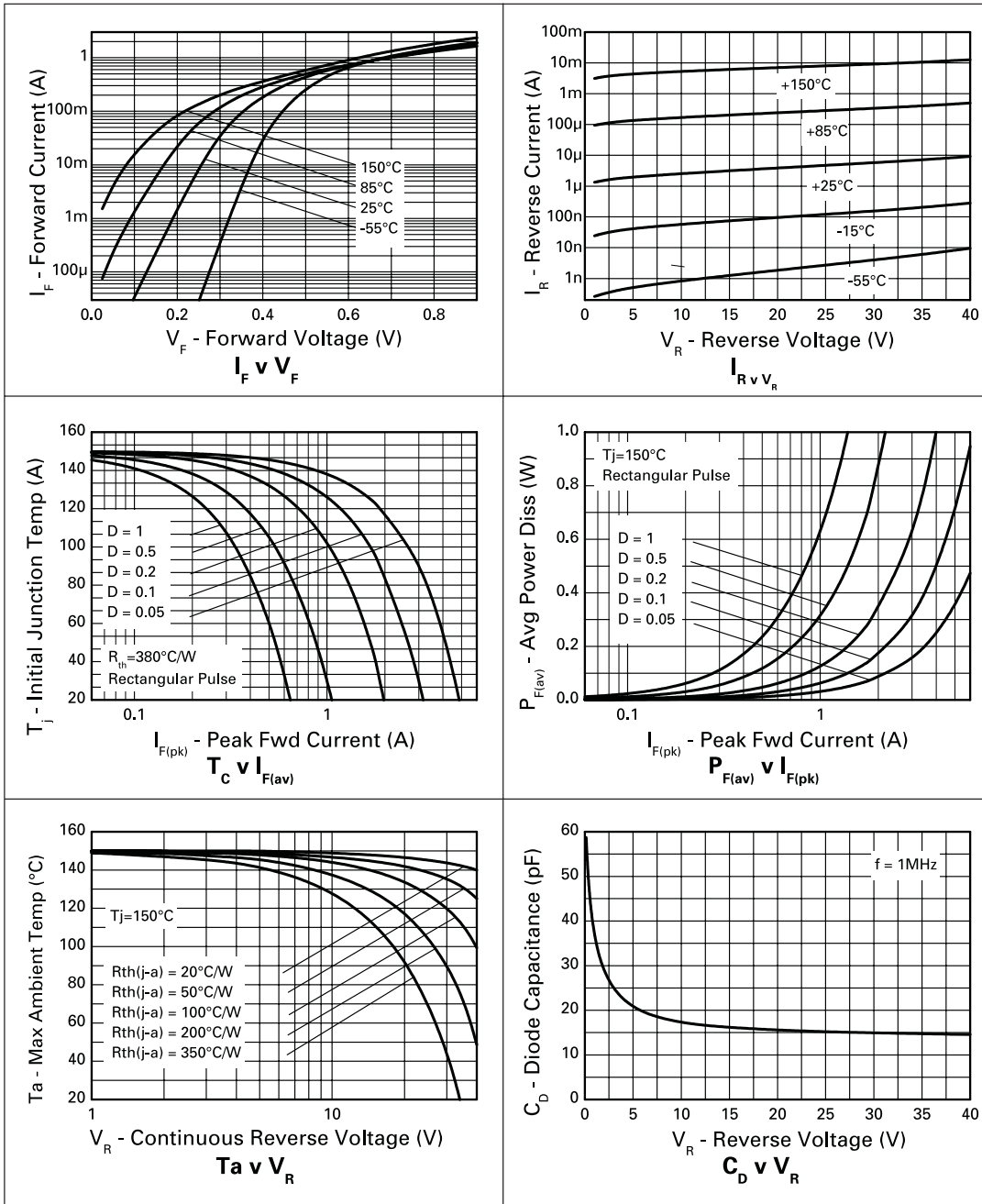
Operational efficiency chart

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 using Zetex low V_F ZHCS series diodes.



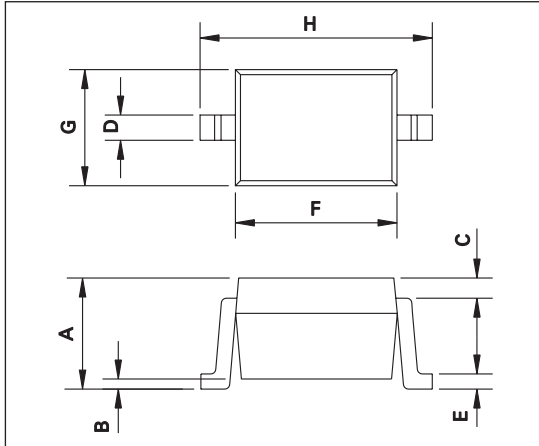
Operational Efficiency Example

TYPICAL CHARACTERISTICS

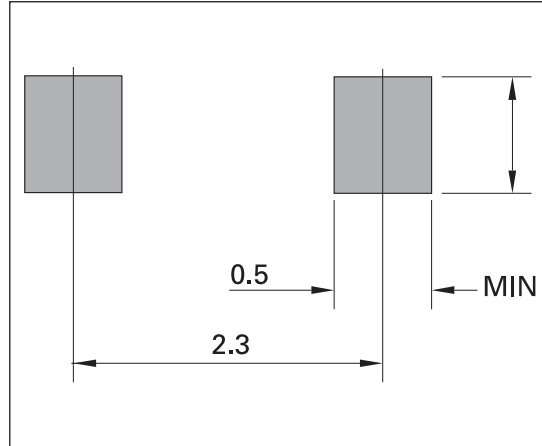


ZLLS400

Package Outline



Pad Layout



Package Dimensions

DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.91	1.16	0.036	0.046
B	0.0	0.1	0.0	0.004
D	0.33	0.4	0.013	0.016
E	0.127	0.2	0.005	0.008
F	1.52	1.77	0.060	0.070
G	1.11	1.37	0.044	0.054
H	2.46	2.71	0.097	0.107

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