OBSOLETE

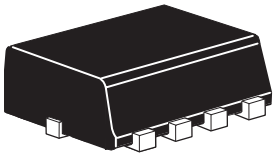
ZXSDS2M832

MPPS™ Miniature Package Power Solutions
DUAL 60V, 1.65A SCHOTTKY DIODE COMBINATION

SUMMARY
Schottky Diode - V_R = 60V; V_F = 600mV(@1A); IC=1.65A

DESCRIPTION

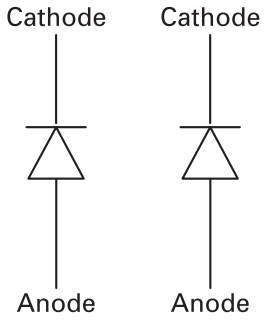
Packaged in the new innovative 3x2 MLP (Micro Leaded Package) outline, this combination dual comprises two 60V 0.9A Schottky barrier diodes. This excellent combination provides users with highly efficient performance in applications including DC-DC converters and charging circuits.



MLP832

Additionally users gain several other **key benefits**:

Performance capability equivalent to much larger packages
Improved circuit efficiency & power levels
PCB area and device placement savings
Lower Package Height (0.9mm nom)
Reduced component count



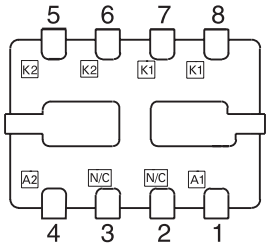
FEATURES

- **Extremely Low V_F, fast switching Schottky**
- I_F= 1.65A Continuous Forward Current
- 3mm x 2mm MLP

APPLICATIONS

- DC-DC Converters
- DC-DC Modules
- Mosfet gate drive circuits
- Charging circuits
- Mobile Phones
- Motor Control

PINOUT



Bottom View

ORDERING INFORMATION

DEVICE	REEL SIZE	TAPE WIDTH	QUANTITY PER REEL
ZXSDS2M832TA	7″	8mm	3000 units
ZXSDS2M832TC	13″	8mm	10000 units

DEVICE MARKING

- DS2

ISSUE 2 June 2003

ZETEX SEMICONDUCTORS

OBSOLETE

ZXSDS2M832

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	LIMIT	UNIT
Reverse Voltage	V_R	60	V
Forward Voltage @ I_F = 1000mA	V_F	600	mV
Forward Current	I_F	1.65	A
Average Forward Current D=50%, t<=300us	I_{FAV}	1.24	A
Non Repetitive Forward Current t<=100us	I_{FSM}	16.8	A
Non Repetitive Forward Current t<=10ms		5.63	A
Power Dissipation at TA=25°C (a)(f)	P_D	1.2	W
Linear Derating Factor		12	mW/°C
Power Dissipation at TA=25°C (b)(f)	P_D	2	W
Linear Derating Factor		20	mW/°C
Power Dissipation at TA=25°C (c)(f)	P_D	0.8	W
Linear Derating Factor		8	mW/°C
Power Dissipation at TA=25°C (d)(f)	P_D	0.9	W
Linear Derating Factor		9	mW/°C
Power Dissipation at TA=25°C (d)(g)	P_D	1.36	W
Linear Derating Factor		13.6	mW/°C
Power Dissipation at TA=25°C (e)(g)	P_D	2.4	W
Linear Derating Factor		24	mW/°C
Storage Temp, Range	Tstg	-55 to+150	°C
Operating & Storage Temp, Range	Tj	-55 to+125	°C

THERMAL RESISTANCE

PARAMETER	SYMBOL	VALUE	UNIT
Junction to Ambient (a)(f)	RθJA	83.3	°C/W
Junction to Ambient (b)(f)	RθJA	51	°C/W
Junction to Ambient (c)(f)	RθJA	125	°C/W
Junction to Ambient (d)(f)	RθJA	111	°C/W
Junction to Ambient (d)(g)	RθJA	73.5	°C/W
Junction to Ambient (e)(g)	RθJA	41.7	°C/W

NOTES

(a) For a dual device surface mounted on 8 sq. cm single sided 2oz copper on FR4 PCB, in still air conditions **with all exposed pads attached**. The copper area is split down the center line into two separate areas with one half connected to each half of the dual device.

(b) Measured at t<5 secs for a dual device surface mounted on 8 sq cm single sided 2oz copper on FR4 PCB, in still air conditions **with all exposed pads attached**. The copper area is split down the centerline into two separate areas with one half connected to each half of the dual device.

(c) For a dual device surface mounted on 8 sq cm single sided 2oz copper FR4 PCB, in still air conditions **with minimal lead connections only**.

(d) For a dual device surface mounted on 10 sq cm single sided 1oz copper FR4 PCB, in still air conditions **with all exposed pads attached**. The copper area is split down the centerline into two separate areas with one half connected to each half of the dual device.

(e) For a dual device surface mounted on 85 sq cm single sided 2oz copper FR4 PCB, in still air conditions **with all exposed pads attached**. The copper area is split down the centerline into two separate areas with one half connected to each half of the dual device.

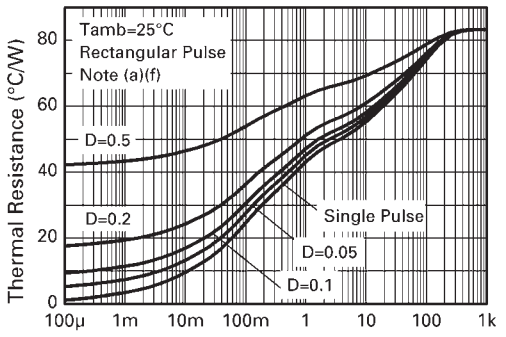
(f) For dual device with one active die.

(g) For dual device with 2 active die running at equal power.

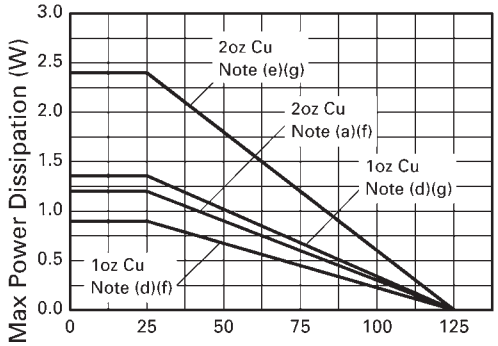
(h) Repetitive rating - pulse width limited by max junction temperature. Refer to Transient Thermal Impedance graph.

(i) The minimum copper dimensions required for mounting are no smaller than the exposed metal pads on the base of the device as shown in the package dimensions data. The thermal resistance for a dual device mounted on 1.5mm thick FR4 board using minimum copper of 1 oz weight, 1mm wide tracks and one half of the device active is Rth= 250°C/W giving a power rating of Ptot=400mW.

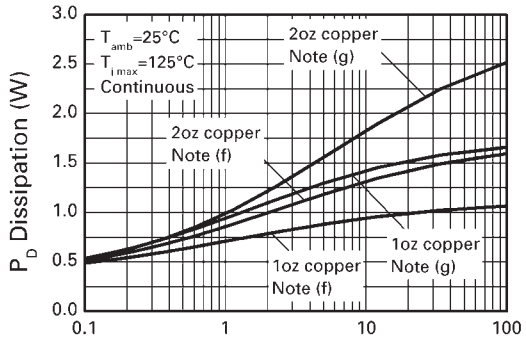
TYPICAL CHARACTERISTICS



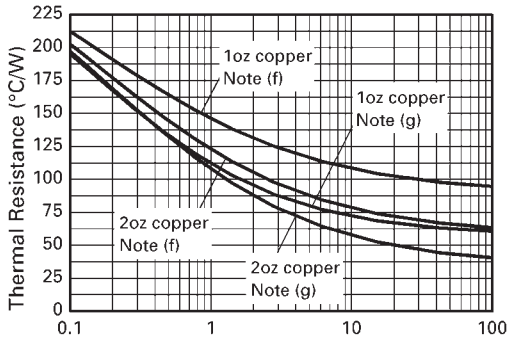
Transient Thermal Impedance



Derating Curve



Power Dissipation v Board Area



Thermal Resistance v Board Area

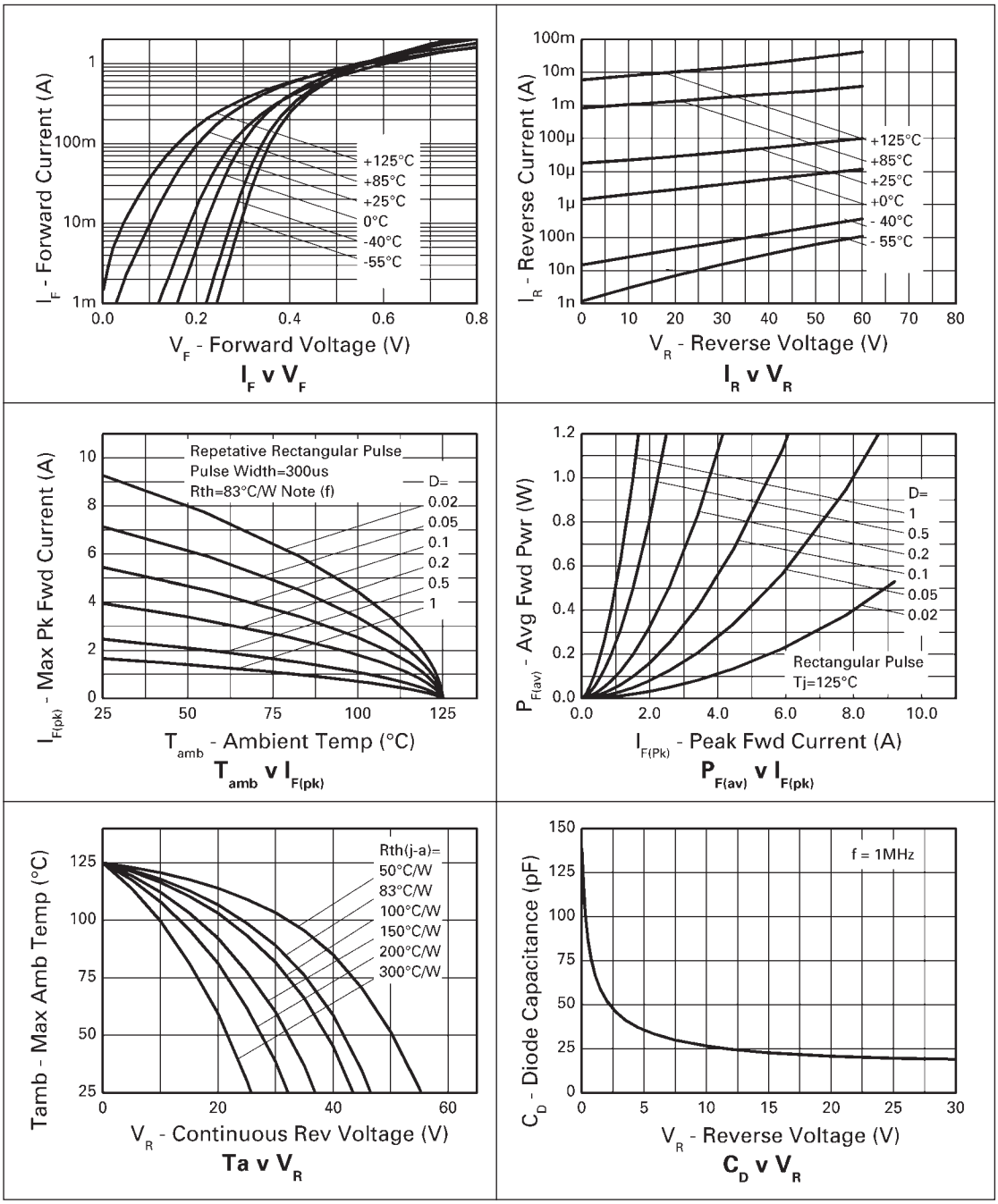
ZXSDS2M832

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
STATIC						
Reverse Breakdown Voltage	V(BR)R	60	80		V	IR = 300µA*
Forward Voltage	V_F		245	280	mV	I_F = 50mA*
			275	320	mV	I_F = 100mA*
			330	390	mV	I_F = 250mA*
			395	470	mV	I_F = 500mA*
			455	530	mV	I_F = 750mA*
			510	600	mV	I_F = 1000mA*
			620	740	mV	I_F = 1500mA*
			500	-	mV	I_F = 1000mA*, T_A = 100°C
Reverse Current	I_R		50	100	µA	V_R = 45V
Diode Capacitance	C_D		17		pF	f = 1MHz, V_R = 25V
Reverse Recovery Time	t_{rr}		12		ns	Switched from I_F = 500mA to I_R = 500mA Measured at I_R = 50mA

NOTES
* Measured under pulsed conditions

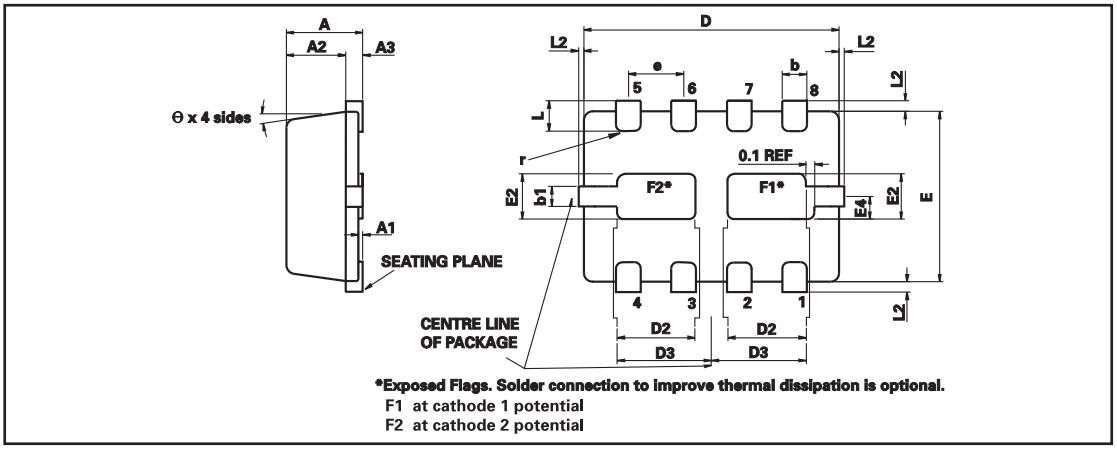
TYPICAL CHARACTERISTICS



OBSOLETE

ZXSDS2M832

PACKAGE OUTLINE (3mm x 2mm Micro Leaded Package)



Controlling dimensions are in millimetres. Approximate conversions are given in inches

PACKAGE DIMENSIONS

DIM	Millimetres		Inches		DIM	Millimetres		Inches	
	Min	Max	Min	Max		Min	Max	Min	Max
A	0.80	1.00	0.031	0.039	e	0.65 REF		0.0256 BSC	
A1	0.00	0.05	0.00	0.002	E	2.00 BSC		0.0787 BSC	
A2	0.65	0.75	0.0255	0.0295	E2	0.43	0.63	0.017	0.0249
A3	0.15	0.25	0.006	0.0098	E4	0.16	0.36	0.006	0.014
b	0.24	0.34	0.009	0.013	L	0.20	0.45	0.0078	0.0157
b1	0.17	0.30	0.0066	0.0118	L2	-	0.125	0.00	0.005
D	3.00 BSC		0.118 BSC		r	0.075 BSC		0.0029 BSC	
D2	0.82	1.02	0.032	0.040	θ	0°	12°	0°	12°
D3	1.01	1.21	0.0397	0.0476	-	-	-	-	-

Europe

Zetex plc
Fields New Road
Chadderton
Oldham, OL9 8NP
United Kingdom
Telephone (44) 161 622 4444
Fax: (44) 161 622 4446
hq@zetex.com

Zetex GmbH
Streitfeldstraße 19
D-81673 München
Germany
Telefon: (49) 89 45 49 49 0
Fax: (49) 89 45 49 49 49
europe.sales@zetex.com

Americas

Zetex Inc
700 Veterans Memorial Hwy
Hauppauge, NY 11788
USA
Telephone: (1) 631 360 2222
Fax: (1) 631 360 8222
usa.sales@zetex.com

Asia Pacific

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

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

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

ISSUE 2 June 2003