
SILICON 25V HYPERABRUPT VARACTOR DIODES

ZC829, ZDC833, ZMV829, ZMDC830, ZV831 Series

Device description

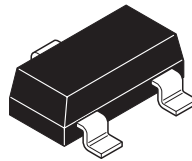
A range of silicon varactor diodes for use in frequency control and filtering. Featuring closely controlled CV characteristics and high Q. Low reverse current ensures very low phase noise performance. Available in single or dual common cathode format in a wide range of miniature surface mount packages.

Features

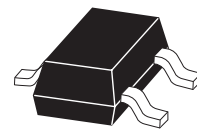
- Close tolerance C-V characteristics
- High tuning ratio
- Low I_R (typically 200pA)
- Excellent phase noise performance
- High Q
- Range of miniature surface mount packages

Applications

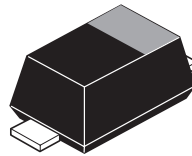
- VCXO and TCXO
- Wireless communications
- Pagers
- Mobile radio



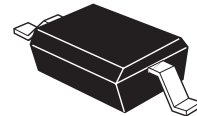
SOT23



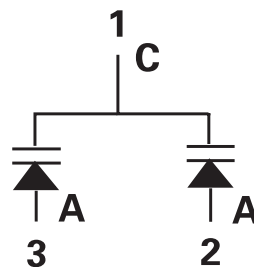
SOT323



SOD523



SOD323



*Where steeper CV slopes are required there is the 12V hyperabrupt range.
ZC930, ZMV930, ZV930, ZV931 Series

830 SERIES

TUNING CHARACTERISTICS at Tamb = 25 °C

PART	Capacitance (pF) V _R =2V, f=1MHz			Min Q V _R =3V f=50MHz	Capacitance Ratio C ₂ / C ₂₀ at f=1MHz	
	MIN.	NOM.	MAX.		MIN.	MAX.
829A	7.38	8.2	9.02	250	4.3	5.8
829B	7.79	8.2	8.61	250	4.3	5.8
830A	9.0	10.0	11.0	300	4.5	6.0
830B	9.5	10.0	10.5	300	4.5	6.0
831A	13.5	15.0	16.5	300	4.5	6.0
831B	14.25	15.0	15.75	300	4.5	6.0
832A	19.8	22.0	24.2	200	5.0	6.5
832B	20.9	22.0	23.1	200	5.0	6.5
833A	29.7	33.0	36.3	200	5.0	6.5
833B	31.35	33.0	34.65	200	5.0	6.5
834A	42.3	47.0	51.7	200	5.0	6.5
834B	44.65	47.0	49.35	200	5.0	6.5
835A	61.2	68.0	74.8	100	5.0	6.5
835B	64.6	68.0	71.4	100	5.0	6.5
836A	90.0	100.0	110.0	100	5.0	6.5

ABSOLUTE MAXIMUM RATINGS

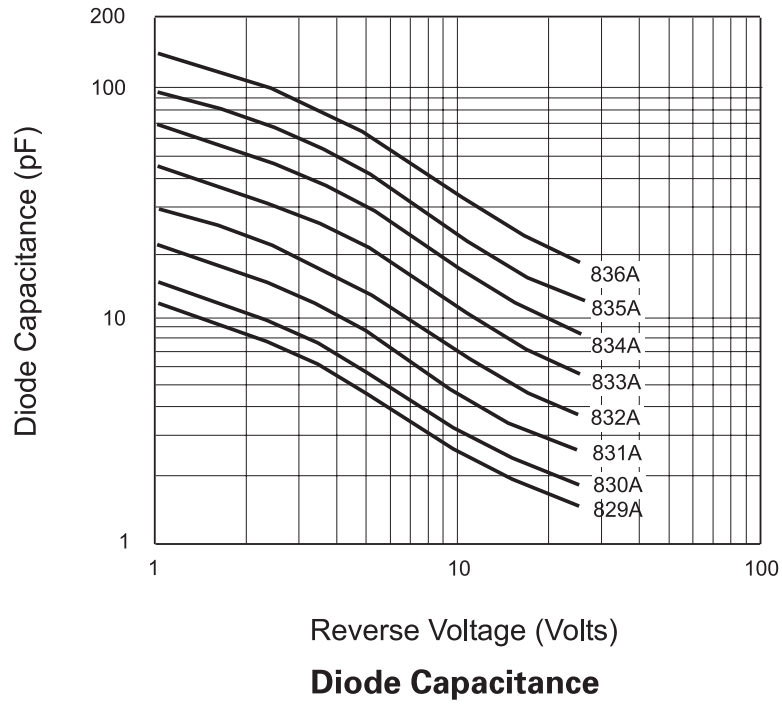
PARAMETER	SYMBOL	MAX	UNIT
Forward current	I _F	200	mA
Power dissipation at T _{amb} = 25°C SOT23	P _{tot}	330	mW
Power dissipation at T _{amb} = 25°C SOD323	P _{tot}	330	mW
Power dissipation at T _{amb} = 25°C SOD523	P _{tot}	250	mW
Operating and storage temperature range		-55 to +150	°C

ELECTRICAL CHARACTERISTICS at Tamb = 25 °C

PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	I _R = 10uA	25			V
Reverse voltage leakage	V _R = 20V		0.2	20	nA
Temperature coefficient of capacitance	V _R = 3V, f = 1MHz		300	400	ppCm/°C

830 SERIES

TYPICAL CHARACTERISTICS



830 SERIES

ORDER CODES AND PART MARKING

SOT23		SOD323		SOD523		SOT23		SOT323	
ORDER CODE	PART MARK	ORDER CODE	PART MARK	ORDER CODE	PART MARK	ORDER CODE	PART MARK	ORDER CODE	PART MARK
ZC829ATA	J9A	ZMV829ATA	AA						
ZC829BTA	J9B	ZMV829BTA	CA						
ZC830ATA	J1A	ZMV830ATA	AB						
ZC830BTA	J1B	ZMV830BTA	CB						
ZC831ATA	J3A	ZMV831ATA	AC						
ZC831BTA	J3B	ZMV831BTA	CC	ZV831BV2TA	81			ZMDC831BTA	CC
ZC832ATA	J4A	ZMV832ATA	AD						
ZC832BTA	J4B	ZMV832BTA	CD	ZV832BV2TA	82			ZMDC832BTA	CD
ZC833ATA	J2A	ZMV833ATA	AE					ZDC833ATA	C2A
ZC833BTA	J2B	ZMV833BTA	CE						
ZC834ATA	J5A	ZMV834ATA	AF					ZDC834ATA	C5A
ZC834BTA	J5B	ZMV834BTA	CF						
ZC835ATA	J6A	ZMV835ATA	AG						
ZC835BTA	J6B	ZMV835BTA	CG						

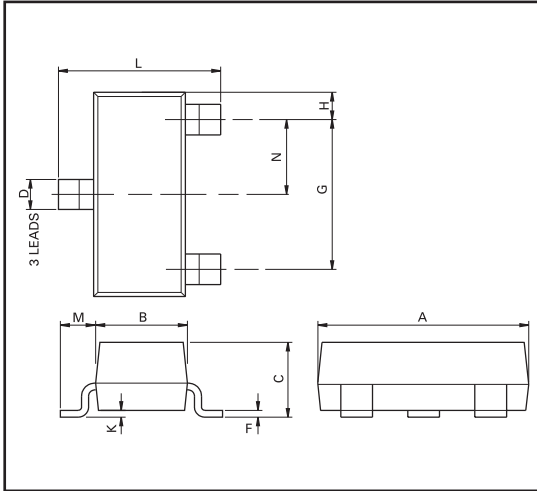
TAPE AND REEL INFORMATION

The order codes are shown as TA which is for 7 inch reels. For 13 inch reels substitute TC in place of TA in the order code.

REEL CODE	REEL SIZE	TAPE WIDTH	QUANTITY PER REEL
TA	7 inch (180mm)	8mm	3000
TC	13 inch (330mm)	8mm	10000

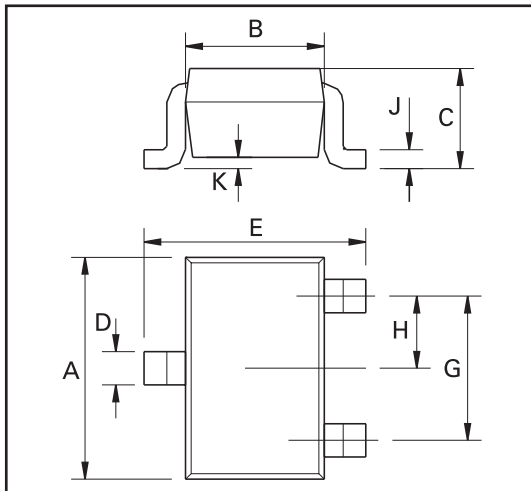
830 SERIES

SOT23 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

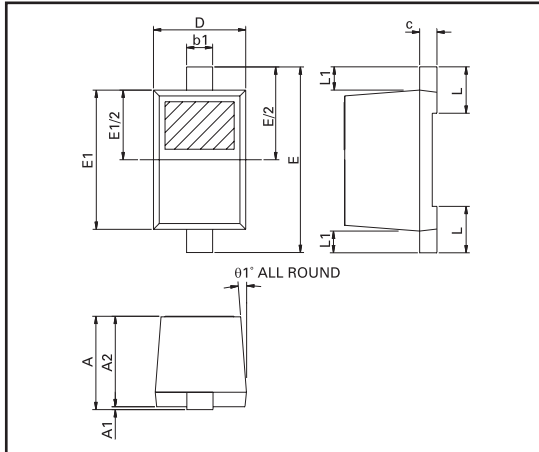
SOT323 PACKAGE DIMENSIONS



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

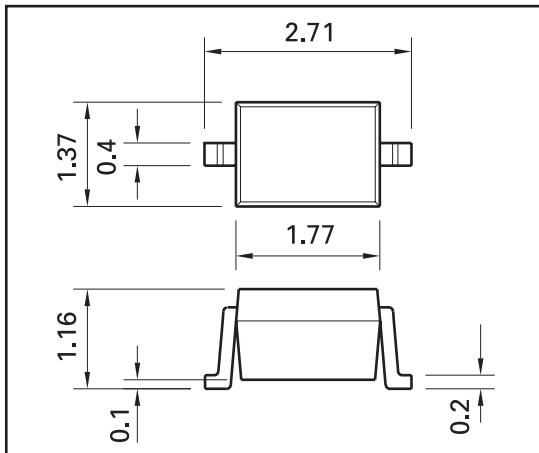
830 SERIES

SOD523 PACKAGE DIMENSIONS



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	-	0.800	-	0.0314
A1	0.000	0.100	0.000	0.0039
A2	0.600	0.800	0.0236	0.0314
b1	0.160	0.300	0.0062	0.0118
c	0.080	0.220	0.0031	0.0086
D	0.700	0.900	0.0275	0.0354
E	1.500	1.700	0.0590	0.0669
E1	1.100	1.300	0.0433	0.0511
L	0.200	0.400	0.0078	0.0157
L1	0.170	0.230	0.0066	0.0090
θ1°	4°	10°	4°	10°

SOD323 PACKAGE DIMENSIONS



DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	1.8	2.2	0.071	0.087
B	1.15	1.35	0.045	0.053
C	0.8	1.0	0.031	0.039
D	0.2	0.4	0.008	0.016
F	0.1	0.25	0.004	0.01
G	1.2	1.4	0.047	0.055

© Zetex Semiconductors plc 2004

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 europa.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



ISSUE 8 - MARCH 2005