

SILICON 28V HYPERABRUPT VARACTOR DIODES

ZC829, ZDC833, ZMV829, ZMDC830, ZV831 Series

Device Description

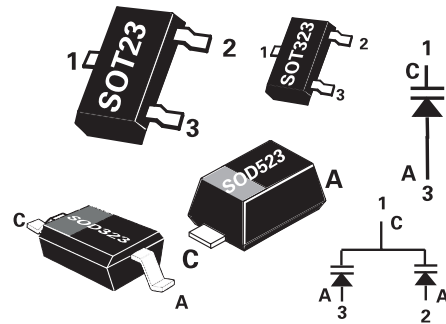
A range of silicon varactor diodes for use in frequency control and filtering. Featuring closely controlled CV characteristics and high Q. Low reverse current ensures very low phase noise performance. Available in single or dual common cathode format in a wide range of miniature surface mount packages.

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



*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
836B	95.0	100.0	105.0	100	5.0	6.5

ABSOLUTE MAXIMUM RATINGS

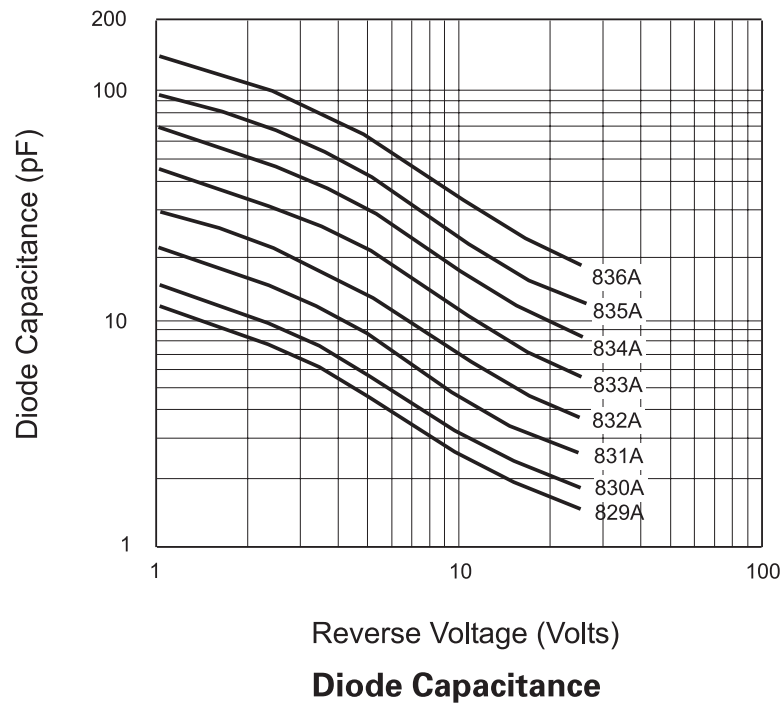
PARAMETER	SYMBOL	MAX	UNIT
Forward current	I_F	200	mA
Power dissipation at $T_{amb} = 25^\circ C$ SOT23	P_{tot}	330	mW
Power dissipation at $T_{amb} = 25^\circ C$ SOD323	P_{tot}	330	mW
Power dissipation at $T_{amb} = 25^\circ C$ SOD523	P_{tot}	250	mW
Operating and storage temperature range		-55 to +150	$^\circ C$

ELECTRICAL CHARACTERISTICS at Tamb = 25°C

PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 10\mu A$	25			V
Reverse voltage leakage	$V_R = 20V$		0.2	20	nA
Temperature coefficient of capacitance	$V_R = 3V$, $f = 1MHz$		300	400	ppCm/ $^\circ C$

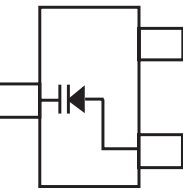
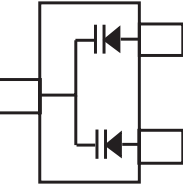
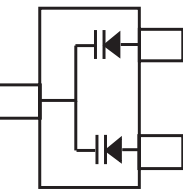
830 series

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		ZDC833ATA	C2A		ZMDC832BTA		CD
ZC833ATA	J2A		ZMV833ATA	AE										
ZC833BTA	J2B		ZMV833BTA	CE										
ZC834ATA	J5A		ZMV834ATA	AF					ZDC834ATA	C5A				
ZC834BTA	J5B		ZMV834BTA	CF										
ZC835ATA	J6A		ZMV835ATA	AG										
ZC835BTA	J6B		ZMV835BTA	CG										
ZC836ATA	J7A													
ZC836BTA	J7B													

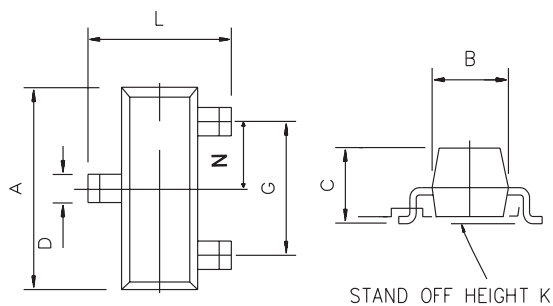
TAPE AND REEL INFORMATION

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

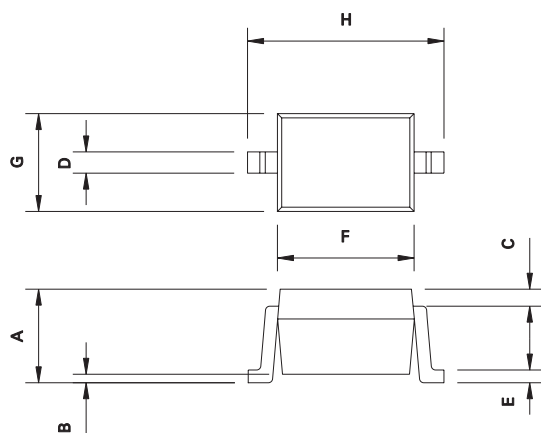
830 series

SOT23 PACKAGE DIMENSIONS



DIM	Millimetres		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
N	NOM 0.95		NOM 0.037	

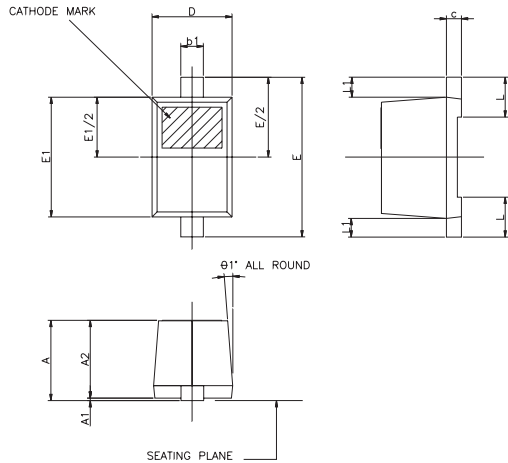
SOD323 PACKAGE DIMENSIONS



DIM	Millimetres		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

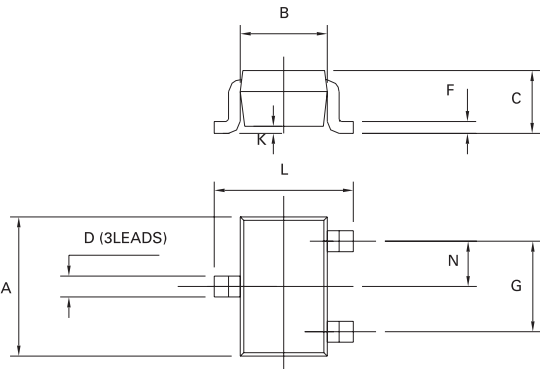
830 series

SOD523 PACKAGE DIMENSIONS



DIM	MILLIMETRES	
	MIN.	MAX
A	—	0.800
A1	0.000	0.100
A2	0.600	0.800
b1	0.160	0.300
c	0.080	0.220
D	0.700	0.900
E	1.500	1.700
E1	1.100	1.300
L	0.200	0.400
L1	0.170	0.230
$\theta 1^\circ$	4°	10°

SOD323 PACKAGE DIMENSIONS



DIM	Millimetres		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
K	—	0.1	—	0.004
L	2.0	2.2	0.079	0.087
N	0.60	0.70	0.023	0.028

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Zetex plc
Fields New Road
Chadderton
Oldham, OL9 8NP
United Kingdom
Telephone (44) 161 622 4422
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
700 Veterans Memorial Hwy
Hauppauge, NY11788
USA
Telephone: (631) 360 2222
Fax: (631) 360 8222

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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