

SILICON 25V HYPERABRUPT VARACTOR DIODES

ZC829, ZDC833, ZMV829, ZMDC830, ZV831 Series

Device description

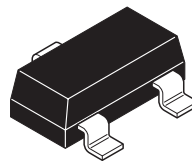
A range of silicon varactor diodes for use in frequency control and filtering. Featuring closely controlled CV characteristics and high Q. Low reverse current ensures very low phase noise performance. Available in single or dual common cathode format in a wide range of miniature surface mount packages.

Features

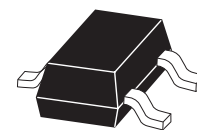
- Close tolerance C-V characteristics
- High tuning ratio
- Low I_R (typically 200pA)
- Excellent phase noise performance
- High Q
- Range of miniature surface mount packages

Applications

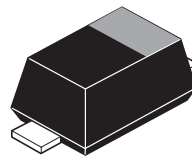
- VCXO and TCXO
- Wireless communications
- Pagers
- Mobile radio



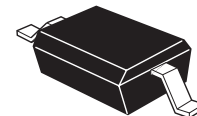
SOT23



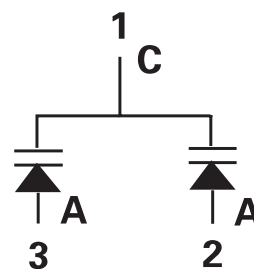
SOT323



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

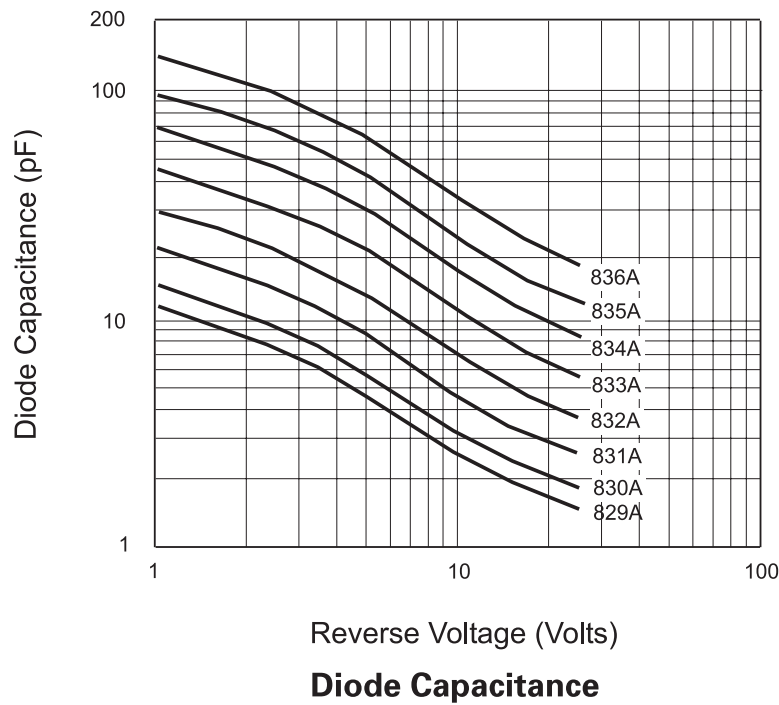
PARAMETER	SYMBOL	MAX	UNIT
Forward current	I _F	200	mA
Power dissipation at T _{amb} = 25°C SOT23	P _{tot}	330	mW
Power dissipation at T _{amb} = 25°C SOD323	P _{tot}	330	mW
Power dissipation at T _{amb} = 25°C SOD523	P _{tot}	250	mW
Operating and storage temperature range		-55 to +150	°C

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

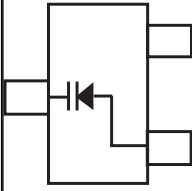
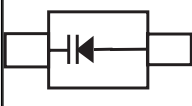
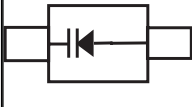
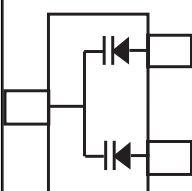
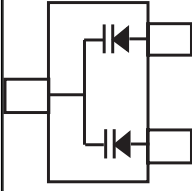
830 SERIES

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										

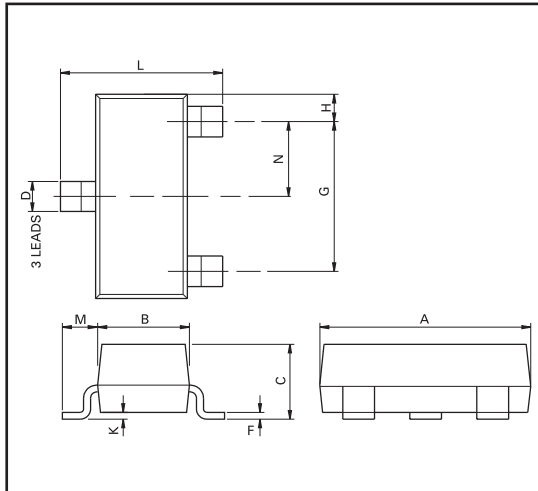
TAPE AND REEL INFORMATION

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

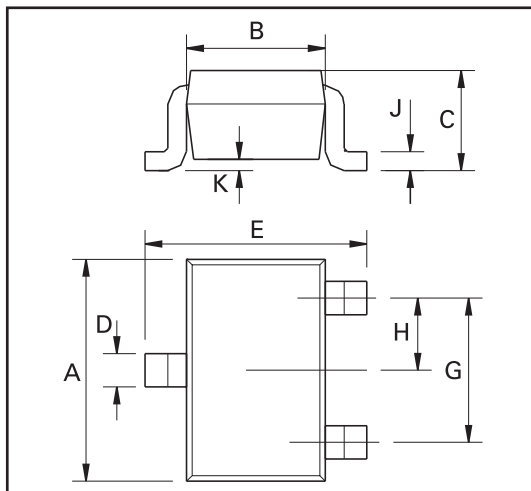
830 SERIES

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

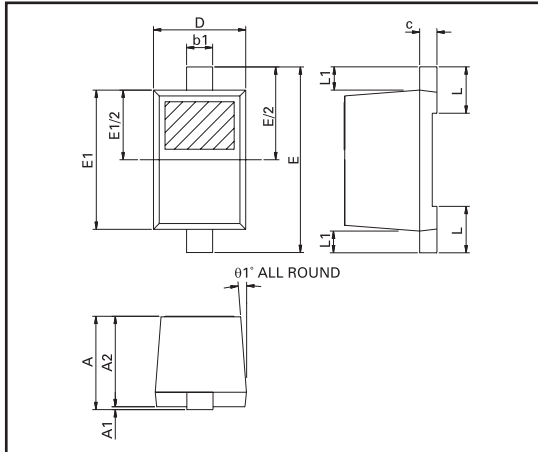
SOT323 PACKAGE DIMENSIONS



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

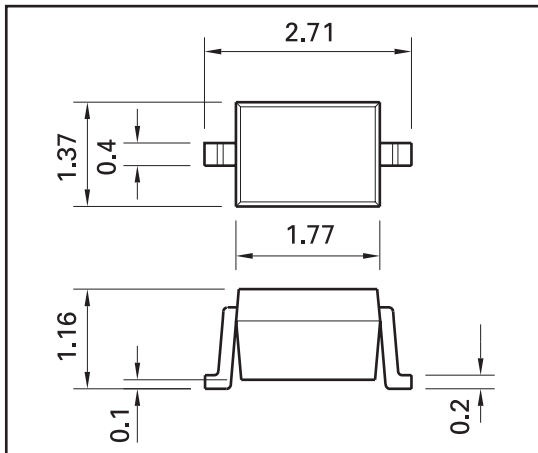
830 SERIES

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

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