

ZC930, ZMV930 series

SILICON 12V HYPERABRUPT VARACTOR DIODES

Device Description

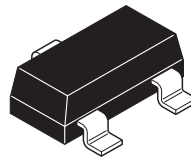
A range of silicon varactor diodes for use in frequency control and filtering. Featuring closely controlled CV characteristics and high Q. Low reverse current ensures very low phase noise performance. Available in single or dual common cathode format in a wide range of miniature surface mount packages.

Features

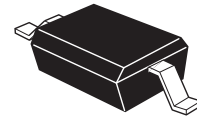
- Close tolerance C-V characteristics
- Octave tuning from 0 to 6V
- Low I_R (typically 200pA)
- Excellent phase noise performance
- High Q

Applications

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



SOT23



SOD323



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ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MAX.	UNIT
Reverse voltage	V_R	12	V
Forward current	I_F	100	mA
Power dissipation at $T_{amb} = 25^\circ\text{C}$ SOT23	P_{tot}	330	mW
Power dissipation at $T_{amb} = 25^\circ\text{C}$ SOD323	P_{tot}	330	mW
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to +150	$^\circ\text{C}$

TUNING CHARACTERISTICS at $T_{amb} = 25^\circ\text{C}$

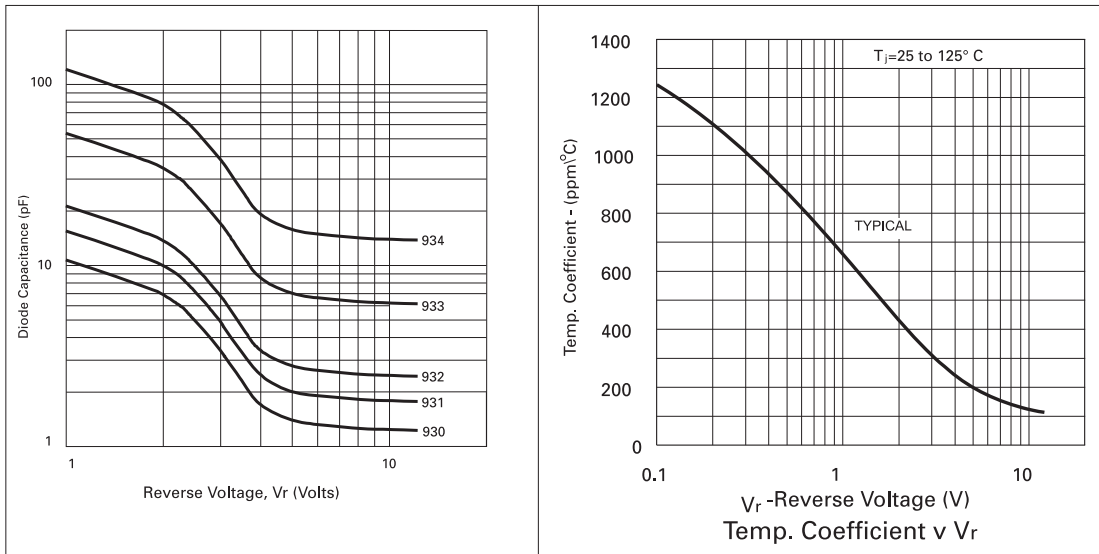
PART	Capacitance $V_R=1\text{V}$	Capacitance $V_R=2.5\text{V}$		Capacitance $V_R=4\text{V}$	Minimum Q $V_R=4\text{V}$ $f=50\text{MHz}$
	MIN. pF	MIN. pF	MAX. pF	MAX. pF	
930	8.70	4.30	5.50	2.90	200
931	13.50	6.50	7.80	4.00	300
932	17.00	8.50	10.50	5.50	200
933	42.00	18.00	27.00	12.00	150
933A	42.00	20.25	24.75	12.00	150
934	95.00	40.00	65.00	25.00	80
934A	95.00	47.25	57.75	25.00	80

ELECTRICAL CHARACTERISTICS at $T_{amb} = 25^\circ\text{C}$

PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 10\mu\text{A}$	12			V
Reverse voltage leakage	$V_R = 8\text{V}$		0.2	100	nA
Temperature coefficient of capacitance	$V_R = 3\text{V}, f = 1\text{MHz}$		300	400	ppCm/ $^\circ\text{C}$

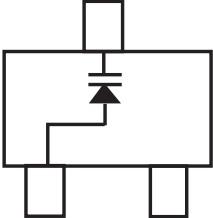
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TYPICAL CHARACTERISTICS



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ORDER CODES AND PART MARKING

SOT23		SOD323	
			
ORDER CODE	PART MARK	ORDER CODE	PART MARK
ZC930TA	V15	ZMV930TA	AH
ZC931TA	V14	ZMV931TA	AJ
ZC932TA	V13	ZMV932TA	AK
ZC933TA	V17	ZMV933TA	AL
ZC933ATA	A17	ZMV933ATA	AM
ZC934TA	V16	ZMV934TA	AN
ZC934ATA	A16	ZMV934ATA	AO

SOD323 - PART MARK ORIENTATION



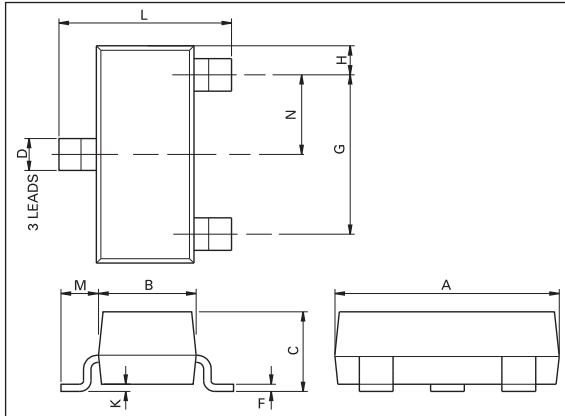
Partmarking shown is for example only

TAPE AND REEL INFORMATION

REEL CODE	REEL SIZE	TAPE WIDTH	QUANTITY PER REEL
TA	7 inch (180mm)	8mm	3,000

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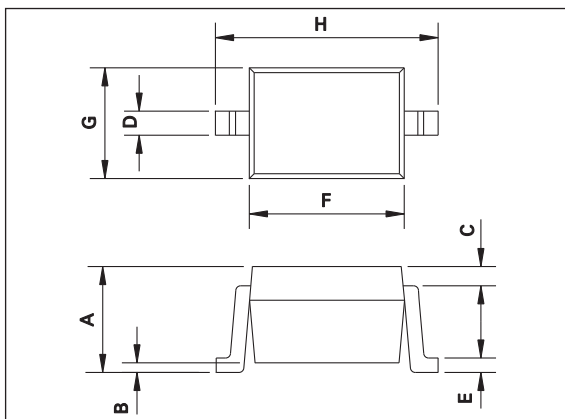
SOT23 PACKAGE OUTLINE



PACKAGE DIMENSIONS

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Max.	Max.
A	2.67	3.05	0.105	0.120	H	0.33	0.51	0.013	0.020
B	1.20	1.40	0.047	0.055	K	0.01	0.10	0.0004	0.004
C	—	1.10	—	0.043	L	2.10	2.50	0.083	0.0985
D	0.37	0.53	0.015	0.021	M	0.45	0.64	0.018	0.025
F	0.085	0.15	0.0034	0.0059	N	0.95 NOM		0.0375 NOM	
G	1.90 NOM		0.075 NOM		-	-		-	

SOD323 PACKAGE OUTLINE



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
C	-	-	-	-
D	0.33	0.4	0.013	0.016
E	0.12	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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"Active"Product status recommended for new designs

"Last time buy (LTB)"Device will be discontinued and last time buy period and delivery is in effect

"Not recommended for new designs"Device is still in production to support existing designs and production

"Obsolete"Production has been discontinued

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"Draft version"This term denotes a very early datasheet version and contains highly provisional information, which may change in any manner without notice.

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