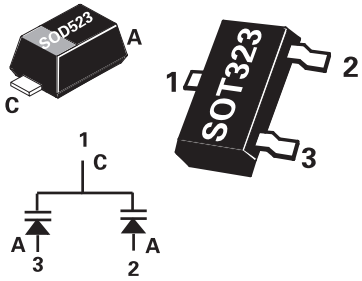
950 series

SILICON LOW VOLTAGE HYPERABRUPT VARACTOR DIODES

ZV950V2, ZV952V2, ZV953V2, ZMDC953, FSD273



Device Description

A range of silicon varactor diodes for use in frequency control and filtering. Featuring closely controlled CV characteristics, low voltage operation and high Q. Low reverse current ensures very low phase noise performance. These parts can be used with control voltages from 0.5V to 2.5V, making them ideal for 3 volt systems. Available in miniature surface mount packages.

Features

- Close tolerance C-V characteristics
- Tuning from 0.5 to 2.5 Volts to suit 3 volt systems
- Low I_R (typically 10pA)
- Excellent phase noise performance
- High Q at low voltage
- Miniature surface mount packages
- Band selection for DAB applications - FSD273

Applications

- VCXO and TCXO
- Wireless communications
- Pagers
- Mobile radio
- Digital Radio receivers

950 series

TUNING CHARACTERISTICS at T_{amb} = 25°C

PART	CAPACITANCE pF V_R=0.5V, f=1MHz	CAPACITANCE pF V_R=1.5V, f=1MHz		CAPACITANCE RATIO $C_{0.5}$ / $C_{2.5}$ f=1MHz	Minimum Q V_R=0.5V f=50MHz
	Min	Min	Max	Min	
ZV950V2	9.5	6.3	7.8	2.0	250
ZV952V2	19	12.7	15.7	2.0	250
ZV953V2	45	30	37	2.0	200
ZMDC953(DUAL)	45	30	37	2.0	250

ZMDC953 is available banded to tighter capacitance range. This product has the order code FSD273TA. Measured at VR=1.5V the bands are

Band A = 30.0 to 32.5
Band B = 32.3 to 34.7
Band C = 34.5 to 37.0

Product is supplied in reels. A banded reel will only contain a single band. Shipments containing several reels may have reels in different bands. It is not possible to supply a specific band as processing affects which bands are available

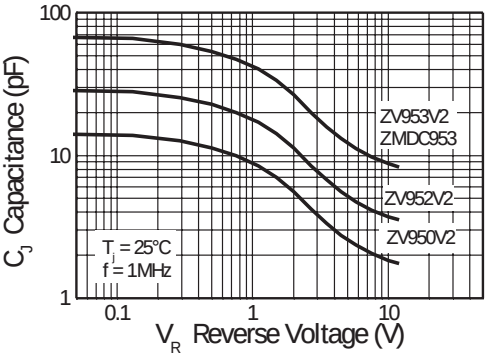
ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MAX	UNIT
Reverse voltage	V_R	12	V
Forward current	I_F	100	mA
Power dissipation at T_{amb} = 25°C SOD523	P_{tot}	250	mW
Power dissipation at T_{amb} = 25°C SOT323	P_{tot}	300	mW

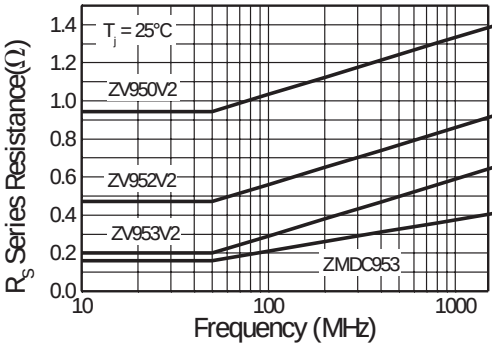
ELECTRICAL CHARACTERISTICS at Tamb = 25°C

PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	I_R = 10uA	12			V
Reverse voltage leakage	V_R = 8V		0.010	20	nA

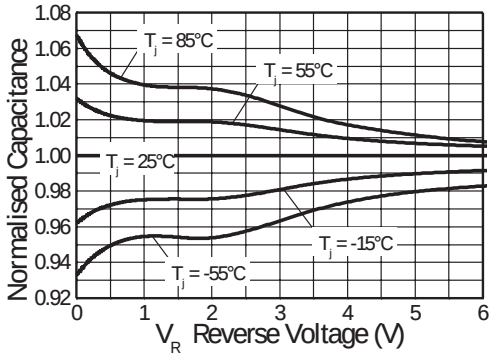
TYPICAL CHARACTERISTICS



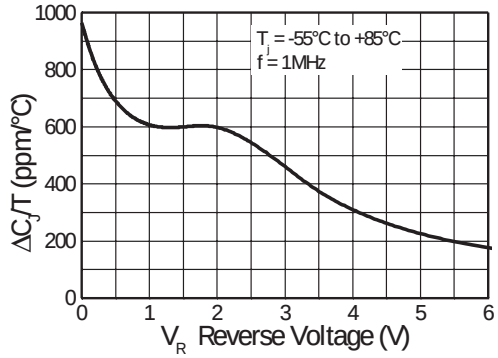
Capacitance v Reverse Voltage



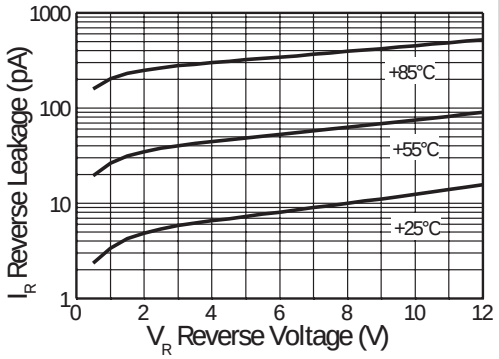
Series Resistance v Frequency



Normalised Capacitance v Voltage



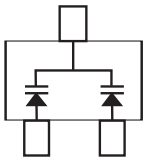
C_J Temperature Coefficient v V_R



Leakage v Reverse Voltage

950 series

ORDER CODES AND PART MARKING

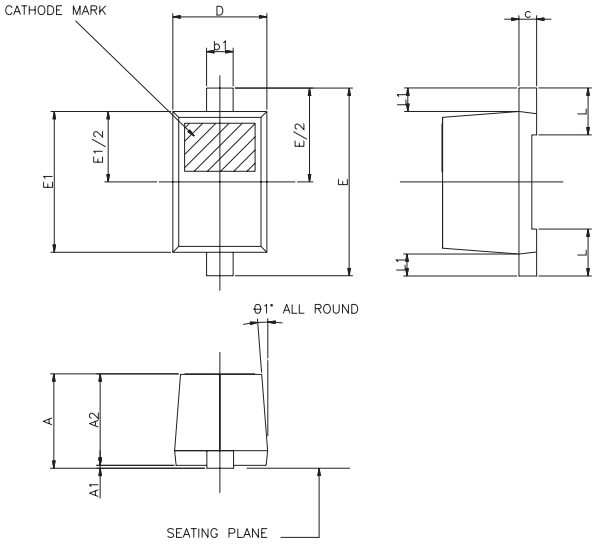
SOD523		SOT323		
				
ORDER CODE	**PART MARK**	**ORDER CODE**	**PART MARK**	
ZV950V2TA	50			
ZV952V2TA	52			
ZV953V2TA	53	ZMDC953TA	54	
		FSD273TA	55	Band A
		FSD273TA	56	Band B
		FSD273TA	57	Band C

FSD273 is a band selected version of the ZMDC953. Product is supplied in reels containing a single capacitance band. Shipments of several reels may contain reels of different bands. It is not possible for customers to specify a particular band, because availability is process dependent.

TAPE AND REEL INFORMATION

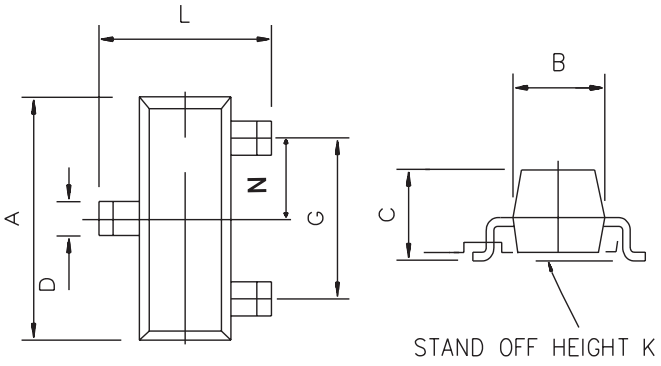
REEL CODE	REEL SIZE	TAPE WIDTH	QUANTITY PER REEL
TA	7 inch (180mm)	8mm	3000

SOD523 PACKAGE DIMENSIONS



	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
θ1°	4°	10°

SOT323 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

950 series

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