

CRYSTALONCS
 2805 Veterans Highway
 Suite 14
 Ronkonkoma, N.Y. 11779



HIGH Q
SILICON VARACTRON[™]
VOLTAGE-VARIABLE CAPACITANCE DIODES

1N5139-48
 *1N5139A-48A

GEOMETRY 415

*** JAN, JAN-TX, JAN-TXV VERSIONS AVAILABLE**

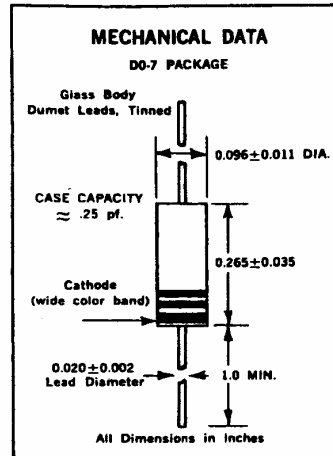
- Q @ -4.0V to 350
- 60V DC (MWW) RATINGS
- LOW LEAKAGE

ABSOLUTE MAXIMUM RATINGS: (ALL TYPES)

PARAMETER	SYMBOL	MAXIMUM	UNIT
Reverse Voltage	V _R	60	Volts
Forward Current	I _F	250	mA
Device Dissipation @ T _A = 25°C	P _D	400	mW
Operating Temperature Range	T _{opr}	-65 to +175	°C
Storage Temperature Range	T _{stg}	-65 to +200	°C

ELECTRICAL DATA: (T_A = 25°C) ALL TYPES (UNLESS OTHERWISE NOTED)

PARAMETER	SYMBOL	Min.	Max.	Unit
Reverse Voltage Breakdown @ I _R = 10 μA dc	B _{V_R}	60		Volts
Reverse Leakage Current @ V _R = 55 Vdc	I _R		0.02	μA
Reverse Leakage Current @ V _R = 55 Vdc, T _A = 150°C	I _R		20	μA
Temp. Coefficient of Capacitance V _R = 4 Vdc, f = 1 MHz (-65 to +85°C)	T _{cc}		300	ppm/°C



ELECTRICAL CHARACTERISTICS: T_A = 25°C (UNLESS OTHERWISE NOTED)

Device	C _T , Diode Capacitance V _R = 4 Vdc, f = 1 MHz pF			Q, Figure of Merit V _R = 4 Vdc, f = 50 MHz	α* V _R = 4 Vdc, f = 1 MHz		TR, Tuning Ratio C ₀ /C ₁₀₀ f = 1 MHz	
	Min.	Typ.	Max.		Min.	Typ.	Min.	Typ.
1N5139	6.1	6.8	7.5	360	0.37	0.40	2.7	2.9
1N5139A	6.5	6.8	7.1	350	0.37	0.40	2.7	2.9
1N5140	9.0	10.0	11.0	300	0.38	0.41	2.8	3.0
1N5140A	9.5	10.0	10.5	300	0.38	0.41	2.8	3.0
1N5141	10.8	12.0	13.2	300	0.38	0.41	2.8	3.0
1N5141A	11.4	12.0	12.6	300	0.38	0.41	2.8	3.0
1N5142	13.5	15.0	16.5	250	0.38	0.41	2.8	3.0
1N5142A	14.3	15.0	15.7	250	0.38	0.41	2.8	3.0
1N5143	16.2	18.0	19.8	250	0.38	0.41	2.8	3.0
1N5143A	17.1	18.0	18.9	250	0.38	0.41	2.8	3.0
1N5144	19.8	22.0	24.2	200	0.43	0.45	3.2	3.4
1N5144A	20.9	22.0	23.1	200	0.43	0.45	3.2	3.4
1N5145	24.3	27.0	29.7	200	0.43	0.45	3.2	3.4
1N5145A	25.7	27.0	28.3	200	0.43	0.45	3.2	3.4
1N5146	29.7	33.0	36.3	200	0.43	0.45	3.2	3.4
1N5146A	31.4	33.0	34.6	200	0.43	0.45	3.2	3.4
1N5147	36.1	39.0	42.9	200	0.43	0.45	3.2	3.4
1N5147A	37.1	39.0	40.9	200	0.43	0.45	3.2	3.4
1N5148	42.3	47.0	51.7	200	0.43	0.45	3.2	3.4
1N5148A	44.7	47.0	49.3	200	0.43	0.45	3.2	3.4

α* = log C_T(4) - log C_T(60)
 log 60 - log 4

where C_T(4) is diode capacitance measured @ V_R = 4.0 Vdc, f = 1 MHz
 C_T(60) " " " " " V_R = 60.0 Vdc, f = 1 MHz