

1N4815
1N5139 -
1N5148A

Varactor Diodes

99 DE 5238534 0000136 8

1N4786 to 1N4815

Type Number	Capacitance @ -4 Vdc 1 MHz (pF)	Capacitance Ratio 0.1 V to 4 V		Capacitance Ratio MWV to 4 V		Max Working Voltage (Vdc)	Min Breakdown Voltage Ir = 100 μA (Vdc)
		Min	Max	Min	Max		
1N4786	6.8	2.40	2.56	0.462	0.482	25	28
1N4787	8.2	2.42	2.58	0.455	0.473	25	28
1N4788	10.0	2.34	2.50	0.443	0.461	25	28
1N4789	12.0	2.35	2.49	0.441	0.457	25	28
1N4790	15.0	2.37	2.49	0.438	0.448	25	28
1N4791	18.0	2.36	2.48	0.487	0.497	20	22
1N4792	22.0	2.35	2.46	0.487	0.497	20	22
1N4793	27.0	2.35	2.46	0.486	0.496	20	22
1N4794	33.0	2.35	2.46	0.485	0.495	20	22
1N4795	39.0	2.34	2.44	0.483	0.494	20	22
1N4796	47.0	2.33	2.43	0.483	0.492	20	22
1N4797	56.0	2.32	2.42	0.551	0.561	15	17
1N4798	68.0	2.30	2.40	0.551	0.561	15	17
1N4799	82.0	2.26	2.36	0.549	0.558	15	17
1N4800	100.0	2.24	2.33	0.547	0.553	15	17
1N4801	6.8	2.40	2.56	0.260	0.285	100	110
1N4802	8.2	2.42	2.58	0.263	0.283	100	110
1N4803	10.0	2.34	2.50	0.242	0.262	100	110
1N4804	12.0	2.35	2.49	0.242	0.259	100	110
1N4805	15.0	2.37	2.49	0.242	0.256	100	110
1N4806	18.0	2.36	2.48	0.242	0.254	90	99
1N4807	22.0	2.35	2.46	0.241	0.252	90	99
1N4808	27.0	2.35	2.46	0.276	0.285	65	72
1N4809	33.0	2.35	2.46	0.287	0.295	60	66
1N4810	39.0	2.34	2.44	0.300	0.306	55	61
1N4811	47.0	2.33	2.43	0.313	0.320	50	55
1N4812	56.0	2.32	2.42	0.348	0.354	40	44
1N4813	68.0	2.30	2.40	0.398	0.404	30	33
1N4814	82.0	2.26	2.36	0.477	0.483	20	22
1N4815	100.0	2.24	2.33	0.478	0.484	20	22

TUNING DIODES 1N5139 to 1N5148A

Type Number	Capacitance @ 4 Vdc			Capacitance Ratio C4/C60	Figure of Merit Q
	Min	Typ	Max		
1N5139	6.12	6.8	7.48	2.7	350
Δ 1N5139A	6.46	6.8	7.14	2.7	350
1N5140	9.0	10.0	11.0	2.8	300
Δ 1N5140A	9.5	10.0	10.5	2.8	300
1N5141	10.8	12.0	13.2	2.8	300
Δ 1N5141A	11.4	12.0	12.6	2.8	300
1N5142	13.5	15.0	16.5	2.8	250
Δ 1N5142A	14.3	15.0	15.7	2.8	250
1N5143	16.2	18.0	19.8	2.8	250
Δ 1N5143A	17.1	18.0	18.9	2.8	250
1N5144	19.8	22.0	24.2	3.2	200
Δ 1N5144A	20.9	22.0	23.1	3.2	200
1N5145	24.3	27.0	29.7	3.2	200
Δ 1N5145A	25.7	27.0	28.3	3.2	200
1N5146	29.7	33.0	36.3	3.2	200
Δ 1N5146A	31.4	33.0	34.6	3.2	200
1N5147	36.1	39.0	42.9	3.2	200
Δ 1N5147A	37.1	39.0	40.9	3.2	200
1N5148	42.3	47.0	51.7	3.2	200
Δ 1N5148A	44.7	47.0	49.3	3.2	200

MAXIMUM RATINGS

Package Style		1N4786-1N4815	1N5139-1N5148A
DC Power Dissipation (Pd)	@ Ta = 25 °C	DO-7 or DO-14 500 mW	DO-7 400 mW
Forward Voltage Drop	@ If = 100 mA	1.0 Vdc	
Forward Current (If)			250 mA
Quality Factor (Q)	Vr = 4 Vdc; f = 1MHz	750 min	
	Vr = 4 Vdc; f = 50MHz	15 min	
Reverse Breakdown Voltage (Bvr)	@ Ir = 10 μAdc		65 Vdc min
Reverse Current (Ir)	@ MWV	5 nA	
Reverse Current (Ir)	@ Vr = 55 Vdc		20 nAdc
Reverse Current (Ir)	@ MWV (150 °C)	5 μA	
Reverse Current (Ir)	@ Vr = 55 Vdc; Ta = 150 °C		20 μAdc
Reverse Voltage (Vr)			60 V
Temp Coefficient of Capacitance	@ Vr = 4Vdc, Ta = -40 to +85 °C		.03 % / °C
Operating Temperature Range (Topr)		-65 to +150 °C	-65 to +175 °C
Storage Temperature Range (Tstg)		-65 to +150 °C	-65 to +200 °C
Voltage Tolerance:	Standard Device	± 20 %	± 10 %
	Suffix A	± 10 %	± 5 %
	Suffix B	± 5 %	± 2 %
	Suffix C	± 2 %	± 1 %
	Suffix D	± 1 %	

NOTE:

Δ Denotes military approval.