

Low Cost Silicon Hyperabrupt Tuning Varactors



Glass Axial Leaded

- Low Inductance
- Wide Capacitance Swing
- High Q
- Superior Reproducibility

The Aeroflex / Metelics Low Cost Hyperabrupts offer high Qs. These diodes are excellent for octave tuning up to 800 MHz and for straight-line frequency tuning between 3 and 8 Volt of bias. They achieve high Q values when tuned between 9 and 20 volts.

TV3201, TV3901, TV 3902

Model	C_T Diode Capacitance pF		T_R Tuning Ratio		Q		V_{BR} Vdc	I_R nA	Cathode Strip	Case Style
	MIN/MAX	MIN/MAX	MIN	MAX	MIN	TYP	MIN	MAX		
TV3201	9/13	2.0/2.3	4.5	5.8	300	415	30	50	White	DO34
TV3901	26/32	4.5/6.0	5.0	6.5	200	280	30	50	Yellow	DO34
TV3902	22.5/27.5	2.9/3.5	6.8	8.9	115	160	30	50	Green	DO34
Test Conditions	@ -3 Vdc F = 1 MHz	@ -25 Vdc F = 1 MHz	C_T -3 / C_T -25 F = 1 MHz		@ -3 Vdc F = 50 MHz		@ 10 μ A	@ -28 Vdc		

Maximum Ratings	Parameter	Value
	Reverse Voltage	30 Vdc
	Forward Current	200 mAdc
	Power Dissipation at $T_A = 25^\circ \text{C}$	400 mW
	Derate Above 25°C	4.0 mW / $^\circ \text{C}$
	Maximum Junction Temperature	+125 $^\circ \text{C}$
	Storage Temperature	-65 to +200 $^\circ \text{C}$

KSV1401-KSV1412

Model	C_T Diode Capacitance pF				T_R Tuning Ratio		Quality Factor Q
	MIN	MAX	MIN	MAX	MIN	MIN	MIN
KSV1401	440	660			14:1		200
KSV1402			45	69		10:1	200
KSV1403			140	210		10:1	200
KSV1404			96	144		10:1	200
KSV1405			200	300		10:1	200
KSV1406			80	120		10:1	200
KSV1407			54	82		10:1	200
KSV1408			37	57		10:1	200
KSV1409			26	40		10:1	200
KSV1410			17	27		9.5:1	200
KSV1411			12	18		8.5:1	200
KSV1412			8	12		7.5:1	200
Test Conditions	@ -1 V, F = 1 MHz		@ -2 V, F = 1 MHz		C_T 1V / C_T 10V @ F = 1 MHz	C_T 2V / C_T 10V @ F = 1 MHz	@ -2 V F = 1 MHz

Maximum Ratings	Parameter	Value
	Device Dissipation $T_A = 25^\circ \text{C}$	400 mW
	Junction Temperature	175 $^\circ \text{C}$
	Reverse Breakdown Voltage	10 μ Adc, 12 Vdc Min
	Max Reverse Leakage Current	$V_R = 10 \text{ Vdc}$, 0.1 μ Vdc
	Operating Temperature	-55 $^\circ$ to + 150 $^\circ \text{C}$
	Storage Temperature	-65 $^\circ$ to + 200 $^\circ \text{C}$
	Capacitance Tolerance	+ 20%
	Suffix A	+ 10%
	Suffix B	+ 5%

To order devices screened to MIL-PRF-19500 JANTX level, Appendix E, Table IV add suffix H.