

TUNING VARACTORS

FEATURES

- High Q and High Tuning Ratio
- Guaranteed Tuning Ratio and Temperature Coefficient
- Superior Reproducibility
- High Reliability (state-of-the-art passivation plus hermetic packaging)

ELECTRICAL SPECIFICATIONS

$$T_A = 25^\circ\text{C}$$

	DO-7 PACKAGE*						DO-14 PACKAGE*						
	MODEL NUMBER	Q, FIGURE OF MERIT $V_R = 4 \text{ Vdc}$, $f = 50 \text{ MHz}$ MIN	TR, TUNING RATIO C_2/C_{20} , $f = 1 \text{ MHz}$ MIN/TYP/MAX				MODEL NUMBER	Q, FIGURE OF MERIT $V_R = 4 \text{ Vdc}$, $f = 50 \text{ MHz}$ MIN	TR, TUNING RATIO C_2/C_{20} , $f = 1 \text{ MHz}$ MIN/TYP/MAX				
C_T DIODE CAPACITANCE (pF) $\pm 10\%$ $@ V_R = 4 \text{ Vdc}$, $f = 1 \text{ MHz}$	6.8	KV620	300										
	8.2	KV622	300										
	10	KV624	300										
	12	KV626	300										
	15	KV628	250										
	18	KV630	250										
	20	KV632	250										
	22	KV634	250										
	27	KV636	200										
	33	KV638	200										
	39	KV640	200										
	47	KV642	200										
	56	KV644	150										
	68	KV646	150										
	82	KV648	150										
	100	KV650	150										
	120						KV652	100	2.0/2.6/3.2				
	150						KV654	100	2.0/2.6/3.2				
	180						KV656	80	2.0/2.6/3.2				
	200						KV658	80	2.0/2.6/3.2				
	220						KV660	60	2.0/2.6/3.2				
PARAMETER		TEST CONDITIONS		UNIT	MIN	TYP	MAX	TEST CONDITIONS		UNIT	MIN	TYP	MAX
REVERSE BREAKDOWN VOLTAGE		V_{BR}	$I_R = 10 \mu\text{A dc}$	Vdc	20	25	—	$I_R = 10 \mu\text{A dc}$		Vdc	20	25	—
REVERSE LEAKAGE CURRENT		I_R	$V_R = 15 \text{ Vdc}$	$\mu\text{A dc}$	—	—	0.1	$V_R = 15 \text{ Vdc}$		$\mu\text{A dc}$	—	—	0.1
SERIES INDUCTANCE		L_S	$f = 250 \text{ MHz}$, $L \approx 1/16''$	nH	—	5	—	$f = 250 \text{ MHz}$, $L \approx 1/16''$		nH	—	5	—
CASE CAPACITANCE		C_C	$f = 1 \text{ MHz}$, $L \approx 1/16''$	pF	—	0.25	—	$f = 1 \text{ MHz}$, $L \approx 1/16''$		pF	—	0.25	—
DIODE CAPACITANCE TEMPERATURE COEFFICIENT		TC_C	$V_R = 4 \text{ Vdc}$, $f = 1 \text{ MHz}$	$\frac{\text{ppm}}{^\circ\text{C}}$	—	300	500	$V_R = 4 \text{ Vdc}$, $f = 1 \text{ MHz}$		$\frac{\text{ppm}}{^\circ\text{C}}$	—	300	500
MAXIMUM RATINGS													
PARAMETER		VALUE		UNIT			VALUE		UNIT				
REVERSE VOLTAGE		20		Vdc			20		Vdc				
DEVICE DISSIPATION @ $T_A = 25^\circ\text{C}$		400		mW			400		mW				
DERATE ABOVE 25°C		2.67		mW/ $^\circ\text{C}$			2.67		mW/ $^\circ\text{C}$				
OPERATING JUNCTION TEMPERATURE RANGE		+175		$^\circ\text{C}$			+175		$^\circ\text{C}$				
STORAGE TEMPERATURE RANGE		-65 TO +200		$^\circ\text{C}$			-65 TO +200		$^\circ\text{C}$				

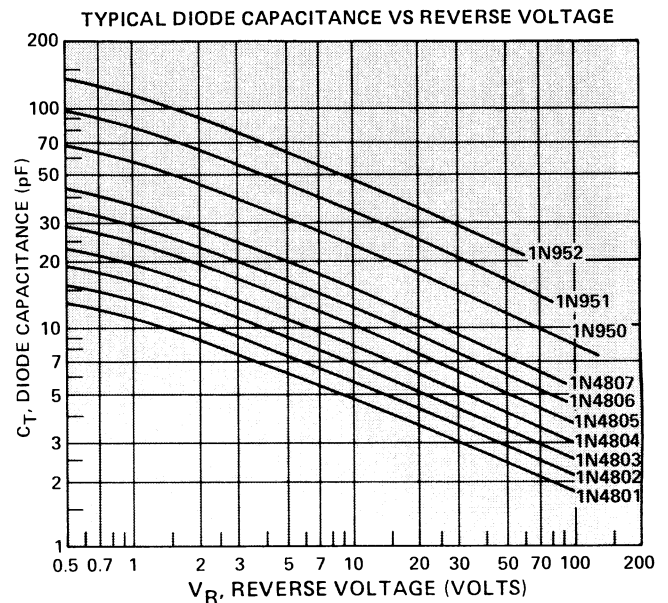
NOTES: *OTHER PACKAGE STYLES AVAILABLE

HIGH VOLTAGE TUNING VARACTORS

1N4801, A, B, C, D through 1N4807, A, B, C, D
1N950 through 1N952
KV4801, A, B, C, D through KV4807, A, B, C, D
KV950 through KV952
DO-14 Glass Package (other package styles available for
KV series)

FEATURES

- High Breakdown Voltage (for applications where large RF voltages are present)
- High Q and High Tuning Ratio (KV types)
- Guaranteed Tuning Ratio and Temperature Coefficient
- Superior Reproducibility
- High Reliability (state-of-the-art passivation plus hermetic packaging)



ELECTRICAL SPECIFICATIONS

$T_A = 25^\circ\text{C}$

MODEL NUMBER	C_T DIODE CAPACITANCE (pF) $V_R = 4 \text{ Vdc}$ MIN**/NOM/MAX**	TR TUNING RATIO $f = 1 \text{ MHz}$		Q $V_R = 4 \text{ Vdc}$ $f = 50 \text{ MHz}$ MIN**	V_{RM}^{**} MAXIMUM WORKING VOLTAGE (Vdc)	V_{BR} $I_R = 100 \mu\text{A}$ (Vdc) MIN**	I_R (μA) $V_R = V_{RM}$ MAX**	T_C DIODE CAPACITANCE TEMPERATURE COEFFICIENT (ppm/°C) MAX	MAX. DEVICE DISSIPATION		OPERATING TEMPERATURE (°C) MAX**	STORAGE TEMPERATURE RANGE (°C) **
	C(0.1V)/C(4V) MIN**/MAX**	C(4V)/C(V_{RM}) MIN**/MAX**	MIN**	MAXIMUM WORKING VOLTAGE (Vdc)	MIN**	MAX**	MAX	AT $T_a = 25^\circ\text{C}$ (mW**)	DERATE ABOVE 25°C (mW**/°C)			
1N4801	5.44/6.80/8.16	2.40/2.56	3.51/3.84	15	100	110	.005	+250**	500	4	+150	-65 TO +150
1N4802	6.58/8.20/9.84	2.42/2.58	3.53/3.80	15	100	110	.005	+250**	500	4	+150	-65 TO +150
1N4803	8/10/12	2.34/2.50	3.82/4.13	15	100	110	.005	+250**	500	4	+150	-65 TO +150
1N4804	9.6/12/14.4	2.35/2.49	3.86/4.13	15	100	110	.005	+250**	500	4	+150	-65 TO +150
1N4805	12/15/18	2.37/2.49	3.91/4.13	15	100	110	.005	+250**	500	4	+150	-65 TO +150
1N4806	14.4/18/21.6	2.36/2.48	3.94/4.13	15	90	99	.005	+250**	500	4	+150	-65 TO +150
1N4807	17.6/22/26.4	2.35/2.46	3.97/4.13	15	90	99	.005	+250	500	4	+150	-65 TO +150
1N950	28/35/42	2.4 TYP	5.1 TYP	7	130	130	1.0	+250	400	4	+175	-65 TO +150
1N951	40/50/60	2.4 TYP	4.1 TYP	7	80	80	1.0	+250	400	4	+175	-65 TO +150
1N952	56/70/84	2.4 TYP	3.55 TYP	7	60	60	1.0	+250	400	4	+175	-65 TO +150

MODEL NUMBER	C _T DIODE CAPACITANCE (pF) V _R = 4 Vdc MIN/NOM/MAX	TR TUNING RATIO f = 1 MHz		Q V _R = 4 Vdc f = 50 MHz MIN	V _{RM} ** MAXIMUM WORKING VOLTAGE (Vdc)	V _{BR} I _R = 100μA (Vdc) MIN	I _R (μA) V _R = V _{RM} MAX	T _{CC} DIODE CAPACITANCE TEMPERATURE COEFFICIENT (ppm/°C) MAX	MAX. DEVICE DISSIPATION		OPERATING TEMPERATURE (°C) MAX	STORAGE TEMPERATURE RANGE (°C)
		C(0.1V)/C(4V) MIN/MAX	C(4V)/C(V _{RM}) MIN/MAX						AT T _a = 25°C (mW)	DERATE ABOVE 25°C (mW/°C)		
KV4801	5.44/6.80/8.16	2.40/2.56	3.51/3.84	125	100	110	.005	+250	500	4	+150	-65 TO +150
KV4802	6.58/8.20/9.84	2.42/2.58	3.53/3.80	100	100	110	.005	+250	500	4	+150	-65 TO +150
KV4803	8/10/12	2.34/2.50	3.82/4.13	100	100	110	.005	+250	500	4	+150	-65 TO +150
KV4804	9.6/12/14.4	2.35/2.49	3.86/4.13	100	100	110	.005	+250	500	4	+150	-65 TO +150
KV4805	12/15/18	2.37/2.49	3.91/4.13	100	100	110	.005	+250	500	4	+150	-65 TO +150
KV4806	14.4/18/21.6	2.36/2.48	3.94/4.13	100	90	99	.005	+250	500	4	+150	-65 TO +150
KV4807	17.6/22/26.4	2.35/2.46	3.97/4.13	100	90	99	.005	+250	500	4	+150	-65 TO +150
KV950	28/35/42	2.4 TYP	5.1 TYP	100	130	130	1.0	+250	400	4	+175	-65 TO +150
KV951	40/50/60	2.4 TYP	4.1 TYP	100	80	80	1.0	+250	400	4	+175	-65 TO +150
KV952	56/70/84	2.4 TYP	3.55 TYP	100	60	60	1.0	+250	400	4	+175	-65 TO +150

ADD SUFFIX "A" FOR $\pm 10\%$ C_T TOLERANCE, SUFFIX "B" FOR $\pm 5\%$ C_T TOLERANCE, SUFFIX "C"
FOR $\pm 2\%$ C_T TOLERANCE, SUFFIX "D" FOR $\pm 1\%$ C_T TOLERANCE.

**INDICATES JEDEC REGISTERED DATA.