



**International
Semiconductor, Inc.**

**HIGH Q
VOLTAGE VARIABLE
CAPACITORS**

1N5681 thru 1N5695

HIGH Q - HIGH TUNING RANGE VOLTAGE VARIABLE CAPACITORS for UHF tuning applications

1N5696, A, B, C thru 1N5710, A, B, C

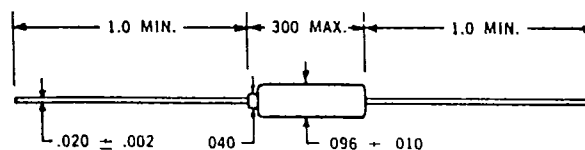
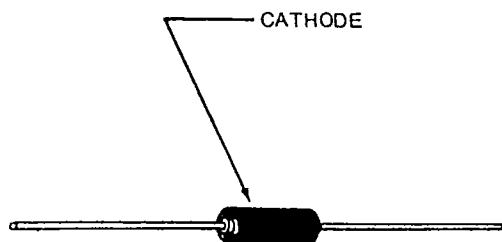
6.8-100 pica farad

International Semiconductor's high Q abrupt-junction Voltage Variable Capacitors are designed specifically for critical and sophisticated frequency control applications through the UHF range.

The computer-aided design evaluation of these devices guarantees tight tolerance of capacitance versus voltage tracking over the complete range of tuning.

SPECIAL FEATURES

- High Q
- High Tuning Range
- Precision Tracking
- Low Leakage
- High Reliability
- Stable



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T-07-19

1N5681, A, B, C thru 1N5695, A, B, C

Specifications

HIGH Q
VOLTAGE VARIABLE
CAPACITORS

1N5681 thru 1N5695

MAXIMUM RATINGS (At $T_A = 25^\circ\text{C}$ unless otherwise specified)

Reverse Breakdown Voltage (BV_R)	@ $I_R = 10\mu\text{A dc}$	45 volts
Reverse Current (I_R)	@ $V_R = 40\text{Vdc}$	$0.02\mu\text{A}$
	@ $V_R = 40\text{Vdc}$, $T_A = 150^\circ\text{C}$	$20.00\mu\text{A}$
Series Inductance (L_s)	@ $f = 250\text{MHz}$ lead length = 1.16"	6nH
Case Capacitance (C_c)	@ $f = 1\text{MHz}$	$0.25\text{pf} \pm 20\%$
Diode Capacitance	@ $V_R = 4.0\text{Vdc}$	$300\text{ppm}/^\circ\text{C}$
Temperature Coefficient (TC)	@ 25°C	
Dissipation (P_D)	400mw (Derate 2.65 mW/ $^\circ\text{C}$ above $T_A = 25^\circ\text{C}$)	
Operating Temperature Range (T_A)	-65°C to $+150^\circ\text{C}$	
Storage Temperature Range (T_{STG})	-65°C to $+200^\circ\text{C}$	

ELECTRICAL CHARACTERISTICS

(At $T_A = 25^\circ\text{C}$ unless otherwise specified)

JEDEC Type No.	Nominal Capacitance * C_j @ $V_R = 4\text{Vdc}$ $f = 1\text{MHz}$	Capacitance Tuning Ratio $C2V/C30V$ $f = 1\text{MHz}$		Figure of Merit, Q @ $V_R = 4\text{Vdc}$ $f = 50\text{MHz}$
		(Min.)	(Typ.)	
1N5681	6.8	3.1	3.3	600
1N5682	8.2	3.1	3.3	600
1N5683	10.0	3.2	3.4	550
1N5684	12.0	3.2	3.4	550
1N5685	15.0	3.2	3.4	550
1N5686	18.0	3.2	3.4	500
1N5687	22.0	3.3	3.5	500
1N5688	27.0	3.3	3.5	500
1N5689	33.0	3.3	3.5	500
1N5690	39.0	3.3	3.5	450
1N5691	47.0	3.3	3.5	400
1N5692	56.0	3.3	3.5	300
1N5693	68.0	3.3	3.5	250
1N5694	82.0	3.3	3.5	225
1N5695	100.0	3.3	3.5	200

Figure of Merit (Q) vs Reverse Bias Voltage

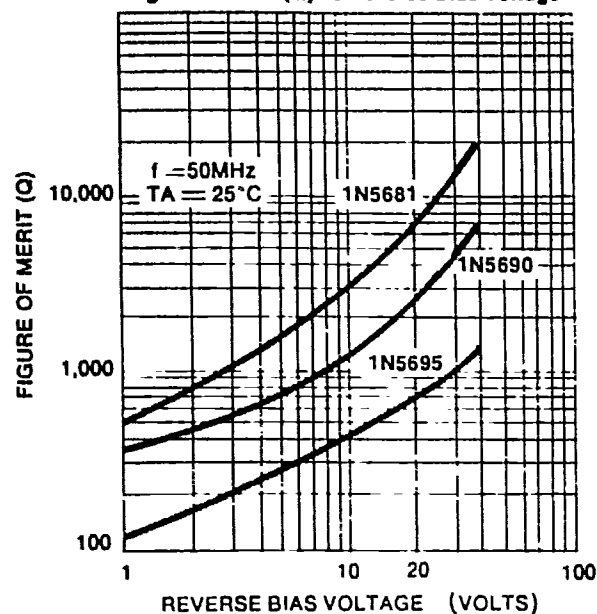


Figure of Merit (Q) vs Frequency

