ELECTRONICS, INC.
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NTE617
Varactor Diode

Description:

The NTE617 is a dual voltage–variable capacitance diode designed for FM tuning, general frequency control and tuning, or any top–of–the–line application requiring back–to–back diode configurations for minimum signal distortion and detuning. This device is supplied in the popular TO92 type plastic package for high volume, economical requirements of consumer and industrial applications.

Features:

- High Figure of Merit: Q = 140 (Typ) @ V_R = 3V, f = 100MHz
- Guaranteed Capacitance Range: 34 – 39pF @ V_R = 3V
- Dual Diodes – Save Space and Reduce Cost
- Monolithic Chip Provides Near Perfect Matching: Guaranteed ±1% (Max) Over Specified Tuning Range

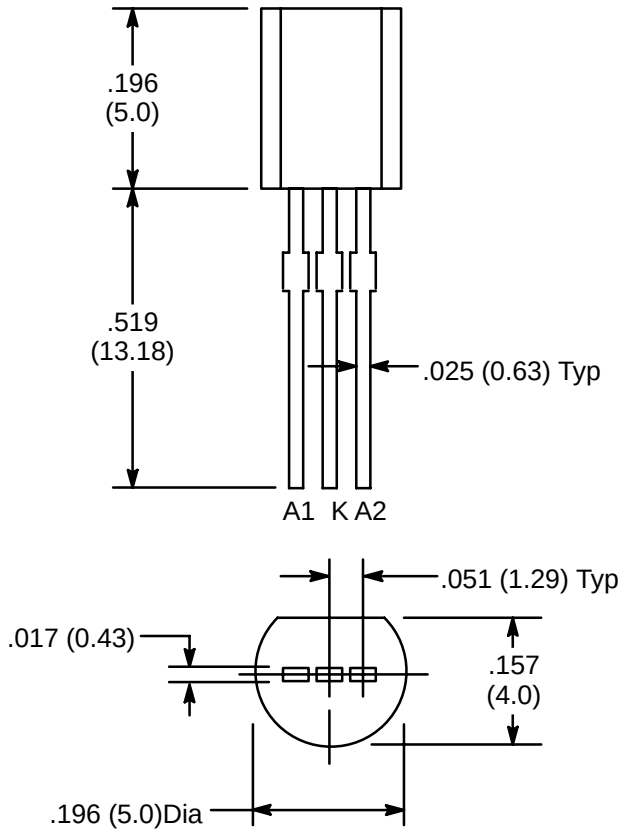
Absolute Maximum Ratings (Each Device):

Reverse Voltage, V_R 32V
Forward Current, I_F 200mA
Total Power Dissipation (T_A = +25°C), P_D 280mW
Derate Above 25°C . . . . . 2.8mW/°C
Junction Temperature, T_J . . . . . +125°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C

Electrical Characteristics (Each Device): (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Reverse Breakdown Voltage	BV_R	I_R = 10μA		32	–	–	V
Reverse Voltage Leakage Current	I_R	T_A = +25°C	V_R = 30V	–	–	50	nA
		T_A = +60°C		–	–	500	nA
Series Inductance	L_S	f = 250MHz, Lead Length ≈ 1/16”		–	6	–	nH
Case Capacitance	C_C	f = 1MHz, Lead Length ≈ 1/16”		–	0.18	–	pF
Diode Capactance Temperature Coefficient	TC_C	V_R = 4V, f = 1MHz		–	280	400	ppm/°C
Diode Capacitance	C_T	V_R = 3V, f = 1MHz		34	–	39	pF
Figure of Merit	Q	V_R = 3V, f = 100MHz, Note 1		100	–	140	
Capacitance Ratio	C_R	C_3/C_{30}, f = 1MHz		2.5	–	2.8	

Note 1. $Q = \dfrac{1}{2 \pi f C_T R_S}$


.196
(5.0)
.519
(13.18)
.025 (0.63) Typ
A1 K A2
.051 (1.29) Typ
.017 (0.43)
.157
(4.0)
.196 (5.0)Dia