



ELECTRONICS, INC.  
 44 FARRAND STREET  
 BLOOMFIELD, NJ 07003  
 (973) 748-5089  
<http://www.nteinc.com>



## NTE2662 Silicon NPN Transistor High Frequency, Low Noise RF

**Description:**

The NTE2662 is a silicon NPN type transistor in a miniature surface mount package designed for oscillator applications up to 3GHz. This device features low voltage operation, low phase noise, and high immunity to pushing effects.

**Features:**

- New Miniature Surface Mount Package
  - Small Transistor Footprint
  - 1.0mm x 0.5mm x 0.5mm
  - Low Profile / 0.50mm Package Height
  - Flat Lead Style for Better RF Performance
- Ideal for ≤ 3GHz Oscillators
- Low Phase Noise
- Low Pushing Factor

**Absolute Maximum Ratings:** ( $T_A = +25^{\circ}\text{C}$ , Note 1 unless otherwise specified)

Collector-to-Base Voltage, $V_{CBO}$ .....	9V
Collector-to-Emitter Voltage, $V_{CEO}$ .....	5.5V
Emitter-to-Base Voltage, $V_{EBO}$ .....	1.5V
Collector Current, $I_C$ .....	100mA
Total Power Dissipation (Note 2), $P_T$ .....	140mW
Operating Junction Temperature, $T_J$ .....	+150°C
Storage Temperature Range, $T_{stg}$ .....	-65° to +150°C

Note 1. Operation in excess of any one of these parameters may result in permanent damage.

Note 2. With device mounted on 1.8cm<sup>2</sup> x 1.0mm glass epoxy board.

**Electrical Characteristics:** ( $T_A = +25^{\circ}\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Gain Bandwidth	$f_T$	$V_{CE} = 1V, f = 2GHz$	$I_C = 5mA$	3.0	4.5	-	GHz
			$I_C = 15mA$	5.0	6.5	-	GHz
Insertion Power Gain	$ S_{21E} $	$V_{CE} = 1V, f = 2GHz,$ Note 3	$I_C = 5mA$	3.0	4.0	-	dB
			$I_C = 15mA$	4.5	5.5	-	dB

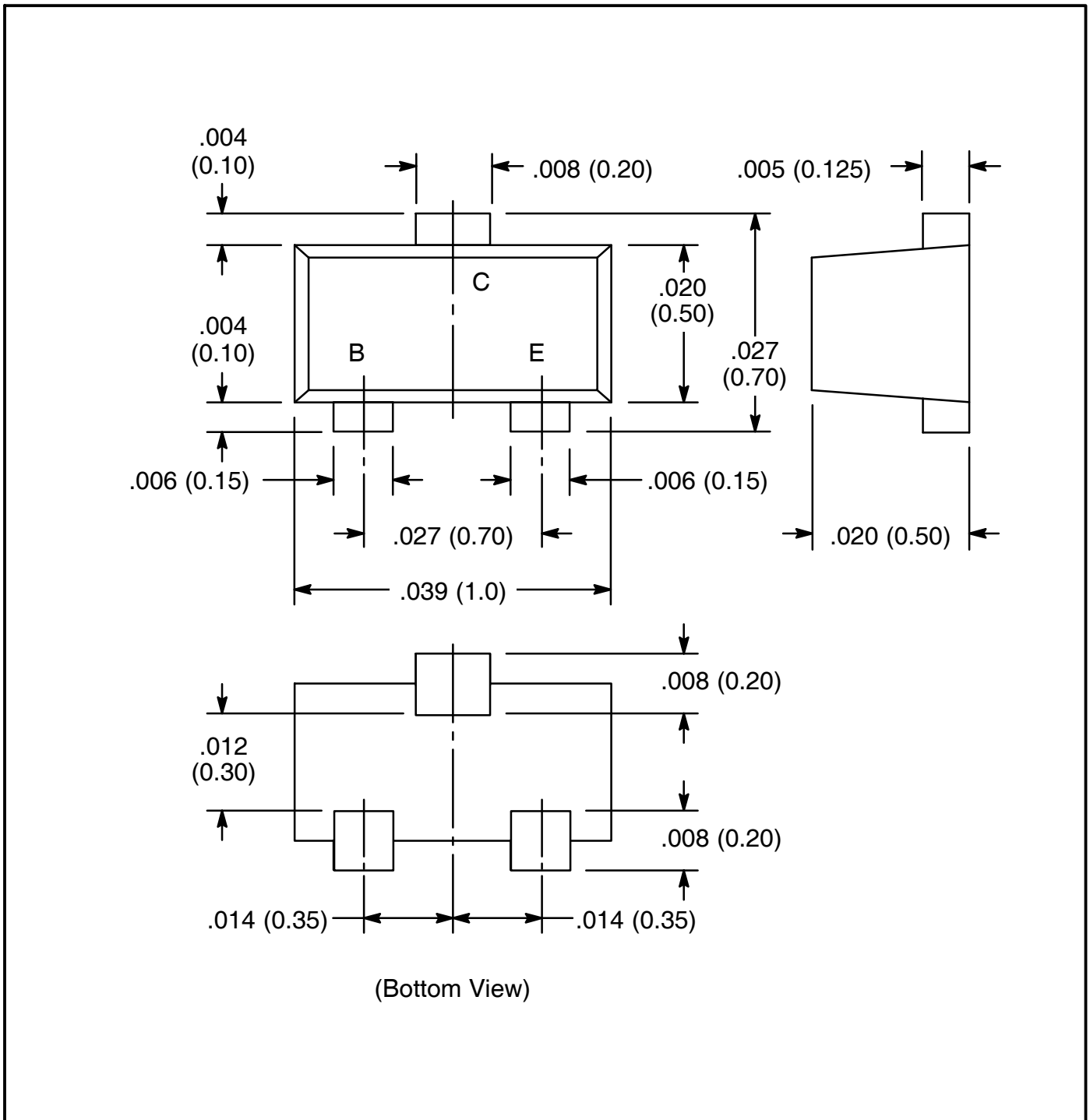
Note 3. Pulsed measurement, Pulse Width ≤ 350μs, Duty Cycle ≤ 2%.

**Electrical Characteristics (Cont'd):** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Noise Figure	NF	$V_{CE} = 1\text{V}, I_C = 10\text{mA}, f = 2\text{GHz}$	-	1.9	2.5	dB
Reverse Transfer Capacitance	$C_{RE}$	$V_{CB} = 0.5\text{V}, I_E = 0\text{mA}, f = \text{MHz}, \text{Note 4}$	-	0.6	0.8	pF
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 5\text{V}, I_E = 0$	-	-	600	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 1, I_C = 0$	-	-	600	nA
DC Current Gain	$h_{FE}$	$V_{CE} = 1\text{V}, I_C = 5\text{mA}, \text{Note 3}$	100	120	145	

Note 3. Pulsed measurement, Pulse Width  $\leq 350\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

Note 4. Collector-to-Base capacitance when the emitter is grounded.



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