



ELECTRONICS, INC.

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

NTE2643 Silicon NPN Transistor, VHF/UHF Low Noise Amp (Surface Mount)

Features:

- Low Noise Figure, High Gain
- $NF = 1.1\text{dB}$, $|S_{21e}|^2 = 13\text{dB}$ ($f = 1\text{GHz}$)

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

Collector–Base Voltage, V_{CBO}	20V
Collector–Emitter Voltage, V_{CEO}	12V
Emitter–Base Voltage, V_{EBO}	3V
Collector Current, I_C	80mA
Base Current, I_B	40mA
Collector Power Dissipation, P_C	100mW
Operating Junction Temperature, T_J	+125°C
Storage Temperature Range, T_{stg}	–55° to +125°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 10\text{V}$, $I_E = 0$	–	–	1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 1\text{V}$, $I_C = 0$	–	–	1	μA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{V}$, $I_C = 20\text{mA}$	80	–	240	
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$, Note 1	–	1.1	1.6	pF
Reverse Transfer Capacitance	C_{re}		–	0.65	1.05	pF
Transition Frequency	f_T	$V_{CE} = 10\text{V}$, $I_C = 20\text{mA}$	5	7	–	GHz
Insertion Gain	$ S_{21e} ^2$	$V_{CE} = 10\text{V}$, $I_C = 20\text{mA}$, $f = 500\text{MHz}$	–	18	–	dB
		$V_{CE} = 10\text{V}$, $I_C = 20\text{mA}$, $f = 1\text{GHz}$	9.5	13.0	–	dB
Noise Figure	NF	$V_{CE} = 10\text{V}$, $I_C = 5\text{mA}$, $f = 500\text{MHz}$	–	1	–	dB
		$V_{CE} = 10\text{V}$, $I_C = 5\text{mA}$, $f = 1\text{GHz}$	–	1.1	2.0	dB

Note 1. C_{re} is measured by 3 terminal method with capacitance bridge.

