ELECTRONICS, INC.
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NTE320/NTE320F
Silicon NPN RF Power Transistor
40W @ 175MHz

Description:

The NTE320 and NTE320F are silicon NPN power transistors designed for 12.5V VHF large–signal amplifier applications required in commercial and industrial equipment operating to 300MHz.

Features:

- Specified 12.5V, 175MHz Characteristics:
  Output Power: 40W
  Minimum Gain: 4.5dB
  Efficiency: 70%
- Available in Two Different Package Styles:
  T72 Stud Mount: NTE320
  W52K Flange Mount: NTE320F

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 18V
Collector–Base Voltage, V_{CBO} 36V
Emitter–Base Voltage, V_{EBO} 4V
Continuous Collector Current, I_C 7A
Total Device Dissipation (T_C = +25°C, Note 1), P_D 80W
Derate Above 25°C . . . . . 460mW/°C
Storage Temperature Range, T_{stg} . . . . . –65° to +200°C
Stud Torque (NTE320 Only, Note 2) . . . . . 6.5in. lb.

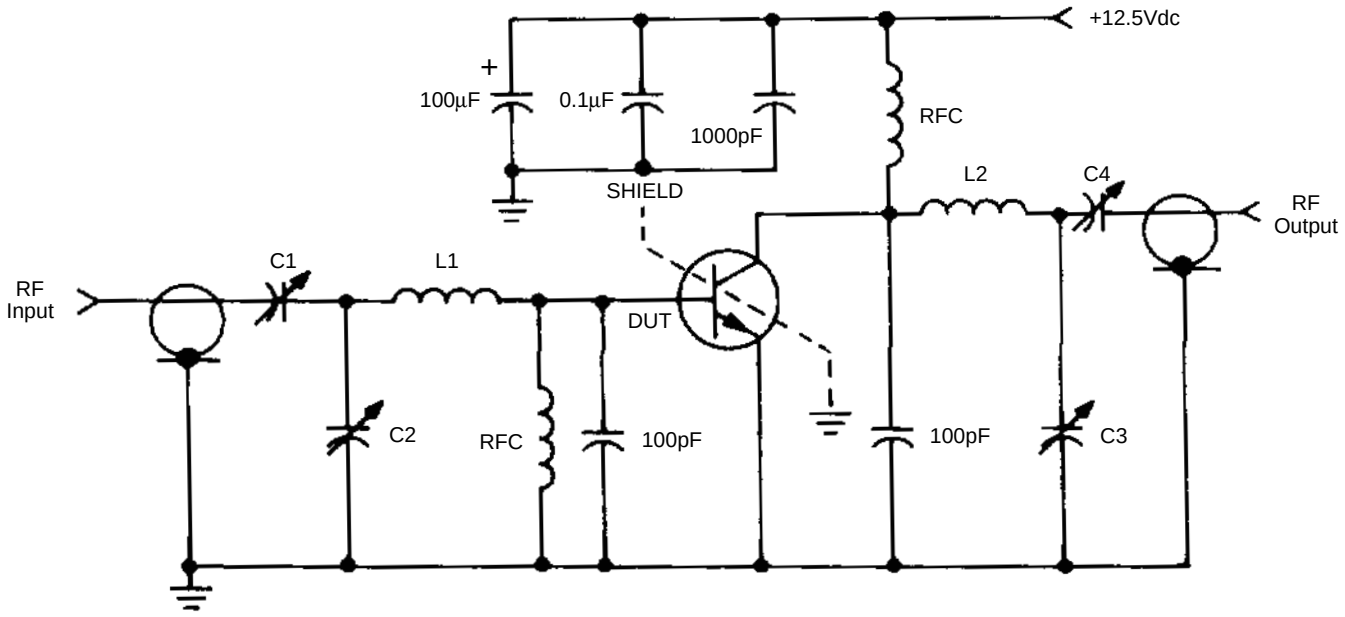
Note 1. These devices are designed for RF operation. The total device dissipation rating applies only when the devices are operated as RF amplifiers.

Note 2. For repeated assembly, use 5in. lb.

Electrical Characteristics: (T_C = +25°C unless otherwise specified)

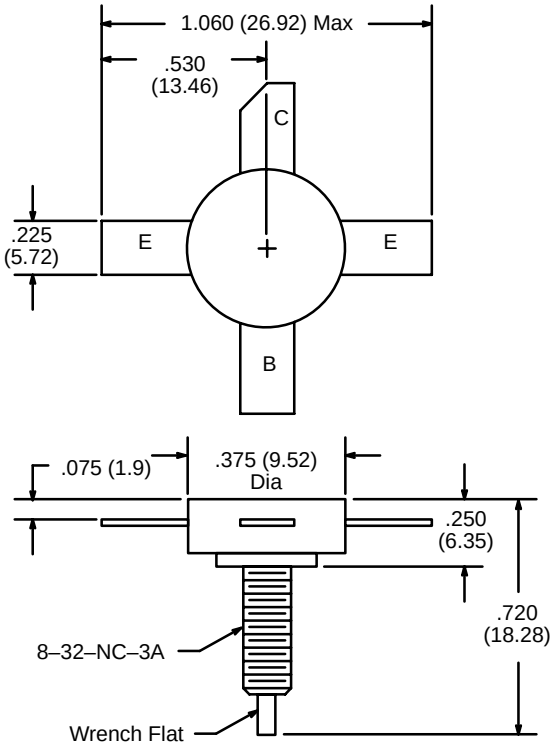
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 100mA, I_B = 0	18	–	–	V
	$V_{(BR)CES}$	I_C = 20mA, V_{BE} = 0	36	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10mA, I_C = 0	4	–	–	V
Collector Cutoff Current	I_{CES}	V_{CE} = 15V, V_{BE} = 0, T_C = +55°C	–	–	10	mA
	I_{CBO}	V_{CB} = 15V, I_E = 0	–	–	2.5	mA
ON Characteristics						
DC Current Gain	h_{FE}	I_C = 1A, V_{CE} = 5V	5	–	–	
Dynamic Characteristics						
Output Capacitance	C_{ob}	V_{CB} = 15V, I_E = 0, f = 0.1MHz	–	170	200	pF
Function Test						
Common–Emitter Amplifier Power Gain	G_{PE}	P_O = 40W, V_{CC} = 12.5V, f = 175MHz	4.5	–	–	dB
Collector Efficiency	η	P_O = 40W, V_{CC} = 12.5V, f = 175MHz	70	–	–	%

175MHz Test Circuit



C1, C2, C3, C4 5.0 – 80pF ARCO 462
L1 Straight Wire, #14 AWG, 1–3/8” Long
L2 1 Turn, #14 AWG, 3/8” ID, Length Plus Leads = 1.000
RFC VK200–20/4B, FERROXCUBE

NTE320
(T72, Stud Mount)



NTE320F
(W52K, Flange Mount)

