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NTE16003
Silicon NPN Transistor
RF Power Output, P_O = 7W, 175MHz

Description:

The NTE16003 is an RF power transistor in a TO60 type case that employs a multi emitter electrode design. This feature together with a heavily diffused base matrix located between the individual emitters results in high RF current handling capability, high power gain, low base resistance, and low output capacitance. This device is intended for Class A, B, or C amplifier, oscillator, or frequency multiplier circuits and is specifically designed for operation in the VHF–UHF region.

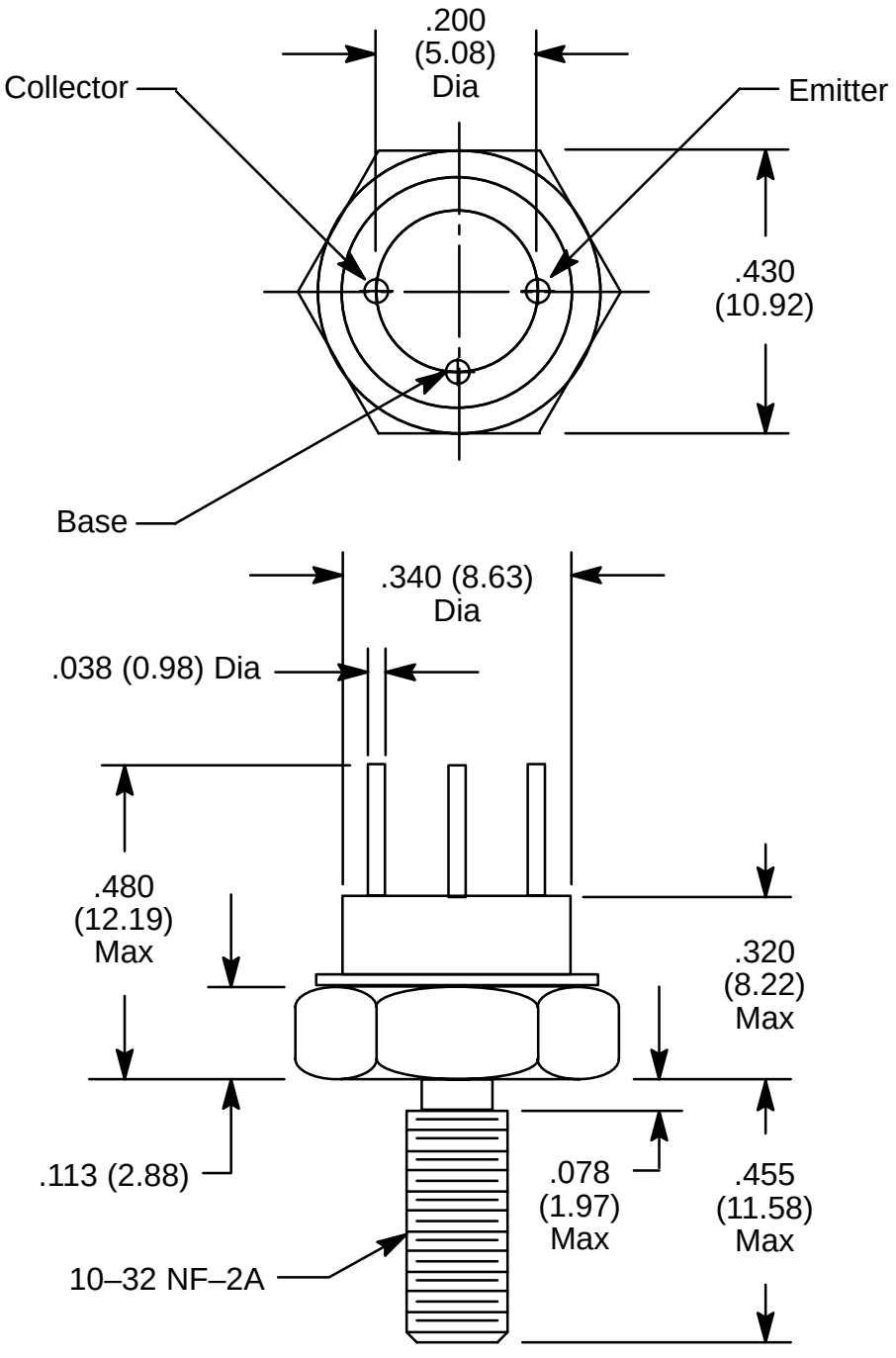
Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Collector–Base Voltage, V_{CBO} 65V
Collector–Emitter Voltage, V_{CEO} 40V
Emitter–Base Voltage, V_{EBO} 4V
Continuous Collector Current, I_C (max) 1.5A
Total Device Dissipation (T_C = +25°C), P_D 11.6W
Derate Above 25°C . . . . . 66.4mW/°C
Operating Junction Temperature Range, T_J . . . . . –65° to +200°C
Storage Temperature Range, T_{stg} . . . . . –65° to +200°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . +15°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CEO}	V_{CE} = 30V, I_B = 0	–	–	0.1	mA
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 0.1mA, I_E = 0	65	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 0.1mA, I_C = 0	4	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 0 to 200mA, I_B = 0, Note 1	40	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEV}$	I_C = 0 to 200mA, V_{BE} = –1.5V, Note 1	65	–	–	V
Output Capacitance	C_{ob}	V_{CB} = 30V, I_C = 0, f = 1MHz	–	–	10	pF
Current Gain–Bandwidth Product	f_T	V_{CE} = 28V, I_C = 150mA, f = 100MHz	–	500	–	MHz
RF Power Output, Class C, Unneutralized	P_{out}	f = 175MHz, V_{CE} = 28V, P_{IN} = 1W	3	–	–	W

Note 1. Pulsed through 25mH inductor, Duty Factor = 50%


.200
(5.08)
Dia
Collector
Emitter
.430
(10.92)
Base
.340 (8.63)
Dia
.038 (0.98) Dia
.480
(12.19)
Max
.320
(8.22)
Max
.113 (2.88)
.078
(1.97)
Max
.455
(11.58)
Max
10–32 NF–2A