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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:** ( $T_A = +25^\circ C$ 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 ( $T_C = +25^\circ C$ ), $P_D$ .....	11.6W
Derate Above $25^\circ C$ .....	66.4mW/ $^\circ C$
Operating Junction Temperature Range, $T_J$ .....	$-65^\circ$ to $+200^\circ C$
Storage Temperature Range, $T_{stg}$ .....	$-65^\circ$ to $+200^\circ C$
Thermal Resistance, Junction–to–Case, $R_{thJC}$ .....	$+15^\circ C/W$

### **Electrical Characteristics:** ( $T_C = +25^\circ C$ 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%





