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## NTE476 Silicon NPN Transistor RF Power Output

**Description:**

The NTE476 is a silicon epitaxial NPN-planar transistor which employs a multi-emitter electrode design. This feature together with a heavily diffused base matrix located between the individual emitters result in high RF current handling capability, high power gain, low base resistance and low output capacitance. This device is intended for use as a Class A, B or C amplifier and in oscillator and frequency multiplier circuits.

**Features:**

- Designed for VHF mobile and marine transmitters
- High efficiency at maximum stability
- Improved metallization to achieve extreme ruggedness

**Absolute Maximum Ratings:** ( $T_A = +25^{\circ}\text{C}$  except where specified)

Collector-Base Voltage, $V_{CBO}$ .....	36V
Collector-Emitter Voltage, $V_{CEO}$ .....	18V
Emitter-Base Voltage, $V_{EBO}$ .....	4V
Continuous Collector Current, $I_{Cmax}$ .....	3A
Total Dissipation at $25^{\circ}\text{C}$ Stud, $P_D$ .....	23.2W
Thermal Resistance, Junction-to-Stud, $R_{thJC}$ .....	$7.54^{\circ}\text{C/W}$
Junction Temperature Range, $T_J$ .....	$-65^{\circ}$ to $200^{\circ}\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-65^{\circ}$ to $200^{\circ}\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>OFF Characteristics</b>						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 200\text{mA}$ , $I_B = 0$ , Note 1	18	–	–	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 500\mu\text{A}$ , $I_E = 0$	36	–	–	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 2\text{mA}$ , $I_C = 0$	4	–	–	V
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 15\text{V}$ , $I_E = 0$	–	–	0.25	mA
<b>Dynamic Characteristics</b>						
Current Gain – Bandwidth Product	$f_T$	$I_C = 100\text{mA}$ , $V_{CE} = 13.6\text{V}$	–	350	–	MHz
Output Capacitance	$C_{ob}$	$V_{CB} = 13.6\text{V}$ , $I_E = 0$ , $f = 100\text{kHz}$	–	–	45	pF
<b>Functional Tests</b>						
Power Output	$P_{OUT}$	$V_{CE} = 13.6\text{V}$ , $f = 175\text{MHz}$	12	–	–	W
Power Gain (Class C)	$P_g$		4.77	–	–	dB
Collector Efficiency (Class C)	$\eta$		80	–	–	%

Note 1. Pulsed thru a 25mH inductor.

