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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°C Stud, P_D	23.2W
Thermal Resistance, Junction-to-Stud, R_{thJC}	7.54°C/W
Junction Temperature Range, T_J	-65° to 200°C
Storage Temperature Range, T_{stg}	-65° to 200°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
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
Dynamic Characteristics						
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
Functional Tests						
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)	η		80	–	–	%

Note 1. Pulsed thru a 25mH inductor.

