



ELECTRONICS, INC.

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## NTE318 Silicon NPN Transistor RF Power Output

### **Description:**

The NTE318 is a 12.5V epitaxial silicon NPN planar transistor designed primarily for HF communications. This device utilizes improved metallization systems to achieve extreme ruggedness under severe operating conditions.

### **Features:**

- Designed for HF military and commercial equipment 40W minimum with greater than 10.0dB gain
- Withstands severe mismatch under operating conditions
- Low inductance Stripline Package

### **Absolute Maximum Ratings:**

Collector Base Voltage, $V_{CBO}$	36V
Collector–Emitter Voltage, $V_{CEO}$	18V
Emitter–Base Voltage, $V_{EBO}$	4V
Maximum Collector Current, $I_C$	6A
Total Device Dissipation (+25°C), $P_T$	80W
Thermal Resistance, Junction–to–Case, $R_{thJC}$	2.2°C/W
Junction Temperature Range, $T_J$	–65° to +200°C
Storage Temperature Range, $T_{stg}$	–65° to +200°C

### **Electrical Characteristics:**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 200mA, I_B = 0, \text{Note 1}$	18	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = 200mA, V_{BE} = 0, \text{Note 1}$	36	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 2.5mA, I_C = 0$	4	–	–	V
Collector Cut–Off Current	$I_{CBO}$	$V_{CB} = 15V, I_E = 0$	–	–	1	mA
DC Current Gain	$h_{FE}$	$V_{CE} = 5V, I_C = 250mA$	10	–	–	
Gain Bandwidth	$f_t$	$V_{CE} = 13.5V, I_C = 100mA$	200	–	–	MHz
Output Capacitance	$C_{ob}$	$V_{CB} = 12.5V, I_C = 0, -F_O = 1.0MHz$	–	–	200	pF
Amplifier Power Out	$P_O$	28MHz/12.5V	47	–	–	W
Amplifier Power Gain	$P_g$		10	–	–	dB

Note 1. Pulsed through 25mH Inductor

