

## 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	$V_{(BR)CEO}$	$I_C = 200mA$ , $I_B = 0$ , Note 1	18	—	—	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = 200mA$ , $V_{BE} = 0$ , 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 <sub>O</sub> = 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

