ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

NTE365
Silicon NPN Transistor
RF Power Output
P_O = 15W @ 512MHz

Description:

The NTE365 is a silicon NPN transistor designed for 12.5 Volt UHF large–signal amplifier applications in industrial and commercial FM equipment operating to 512MHz.

Features:

- Specified 12.5 Volt, 470MHz Characteristic:
  Output Power = 15 Watts
  Minimum Gain = 7.8dB
  Efficiency = 55%
- Characterized with Series Equivalent Large–Signal Impedance Parameters
- Built–In Matching Network for Broadband Operation
- Tested for Load Mismatch Stress at all Phase Angles with 20:1 VSWR @ 16–volt High Line and Overdrive

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 16V
Collector–Base Voltage, V_{CBO} 36V
Emitter–Base Voltage, V_{EBO} 4V
Collector Current–Continuous, I_C 3A
Total Device Dissipation (T_C = +25°C), P_D 50W
Derate above 25°C . . . . . 250mW/°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 4.0°C/W

Electrical Characteristics: (T_C = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 20mA, I_B = 0	16	–	–	V
	$V_{(BR)CES}$	I_C = 20mA, V_{BE} = 0	36	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 5mA, I_C = 0	4	–	–	V
Collector Cutoff Current	I_{CES}	V_{CE} = 15V, V_{BE} = 0, T_C = +25°C	–	–	5.0	mA

Electrical Characteristics (Cont'd): (T_C = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics						
DC Current Gain	h_{FE}	V_{CE} = 5V, I_C = 1A	30	70	150	
Dynamic Characteristics						
Output Capacitance	C_{ob}	V_{CB} = 12.5V, I_E = 0, f = 1MHz	–	40	60	pF
Functional Test						
Common–Emitter Amplifier Power Gain	G_{PE}	P_{OUT} = 15W, V_{CC} = 12.5V, f = 470MHz	7.8	8.5	–	dB
Collector Efficiency	η	P_{OUT} = 15W, V_{CC} = 12.5V, f = 470MHz	55	60	–	%
Output Mismatch Stress	ψ	V_{CC} = 16V, P_{in} = 3W, f = 470MHz, VSWR = 20:1, All Phase Angles	No Degradation in Output Power			

