ELECTRONICS, INC.
44 FARRAND STREET
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NTE16002
Silicon NPN Transistor
RF Power Output, P_O = 13.5W, 175MHz

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 40V
Collector–Base Voltage, V_{CB} 65V
Emitter–Base Voltage, V_{EB} 4V
Collector Current, I_C 3A
Total Device Dissipation (T_C = +25°C), P_D 23W
Derate Above 25°C . . . . . 131mW/°C
Operating Junction Temperature Range, T_J . . . . . –65° to +200°C
Storage Temperature Range, T_{stg} . . . . . –65° to +200°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Sustaining Voltage	$V_{(BR)CEO(sus)}$	I_C = 200mA, I_B = 0, Note 1	40	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 0.25mA, I_C = 0	4	–	–	V
Collector Cutoff Current	I_{CEO}	V_{CE} = 30V, I_B = 0	–	–	0.25	mA
	I_{CEX}	V_{CE} = 30V, $V_{BE(off)}$ = 1.5V, T_C = +200°C	–	–	10	mA
		V_{CE} = 65V, $V_{BE(off)}$ = 1.5V	–	–	5	mA
	I_{CBO}	V_{CB} = 65V, I_E = 0	–	–	1	mA
Emitter Cutoff Current	I_{EBO}	V_{BE} = 4V, I_C = 0	–	–	0.25	mA
ON Characteristics						
DC Current Gain	h_{FE}	V_{CE} = 5V, I_C = 1A	5	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 500mA, I_B = 100mA	–	–	1.0	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 1A, I_B = 5A	–	–	1.5	V
Dynamic Characteristics						
Current Gain–Bandwidth Product	f_T	V_{CE} = 28V, I_C = 150mA, f = 100MHz	–	400	–	MHz
Output Capacitance	C_{ob}	V_{CB} = 30V, I_E = 0, f = 100kHz	–	16	20	pF

Note 1. Pulsed through 25mH inductor.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Functional Tests						
Power Input	P_{in}	V_{CE} = 28V, P_{out} = 2.5W, f = 175MHz	–	–	0.25	W
Common–Emitter Amplifier Power Gain	G_{pe}		10	–	–	dB
Collector Efficiency	η		50	–	–	%