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NTE2401
Silicon PNP Transistor
RF Stages in FM Front Ends

Description:
The NTE2401 is a silicon PNP transistor in a plastic SOT–23 type surface mount package designed for use in RF stages in FM front–ends in common base configuration for SMD applications.

Absolute Maximum Ratings:
Collector–Base Voltage, V_{CBO} 30V
Collector–Emitter Voltage, V_{CEO} 30V
Emitter–Base Voltage, V_{EBO} 4V
DC Collector Current, I_C 25mA
Total Power Dissipation ($T_A \le +25°C$, Note 1), P_{tot} 300mW
Operating Junction Temperature, T_J . . . . . +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C
Thermal Resistance, Junction–to–Ambient (Note 1), R_{thJA} 430K/W

Note 1. Mounted on a ceramic substrate of .314 (8mm) x .393 (10mm) x .027 (0.7mm).

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	V_{CB} = 30V, I_E = 0	–	–	50	nA
Emitterr Cutoff Current	I_{EBO}	V_{EB} = 4V, I_C = 0	–	–	10	µA
Base Current	I_B	V_{CE} = 10V, I_C = 4mA	–	80	160	µA
		V_{CE} = 10V, I_C = 1mA	–	22	–	µA
Base–Emitter Voltage	V_{BE}	V_{CE} = 10V, I_C = 4mA	–	0.76	–	V
Transition Frequency	f_T	V_{CE} = 10V, I_C = 1mA	–	350	–	MHz
		V_{CE} = 10V, I_C = 4mA	–	450	–	MHz
		V_{CE} = 10V, I_C = 8mA	–	440	–	MHz
Feedback Capacitance	C_{rb}	V_{CE} = 10V, V_{EB} = 0	–	0.1	–	pF
Noise Factor	F	V_{CE} = 10V, I_C = 2mA, G_s = 16.7mS	–	3.0	–	dB
		V_{CE} = 10V, I_C = 5mA, G_s = 6.7mS, jB_s = 5mS	–	3.5	–	dB

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
y–parameters (common base)						
Input Conductance	g_{ib}	V_{CB} = 10V, I_C = 4mA, f = 100MHz	–	125	–	mS
Input Capacitance	C_{ib}		–	64	–	pF
Transfer Admittance	$\|y_{fb}\|$		–	100	–	mS
Phase Angle of Transfer Admittance	φ_{fb}		–	147	–	°
Output Conductance	g_{ob}		–	40	–	µS
Output Capacitance	C_{ob}		–	1.25	–	pF
Feedback Admittance	$\|y_{rb}\|$		–	220	–	µS
Phase Angle of Feedback Admittance	φ_{rb}		–	85	–	°

