ELECTRONICS, INC.
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NTE186 (NPN) & NTE187 (PNP)
Silicon Complementary Transistors
General Purpose Output & Driver for Audio Amplifier

Description:

The NTE186 (NPN) and NTE187 (PNP) are silicon complementary transistors in a TO202 type case designed for use as output and driver stages of amplifiers operating at frequencies from DC to greater than 1MHz, series, shunt, and switching regulators, low and high frequency inverters/converters, and many other general purpose applications.

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Collector–Emitter Voltage, V_{CEO} 60V

Collector–Emitter Voltage, V_{CES} 70V

Emitter–Base Voltage, V_{EBO} 5V

Collector Current, I_C

- Continuous 3A
- Peak 5A

Power Dissipation, P_T

- T_C = +25°C 12.5W
- T_A = +25°C 2.1W

Operating Junction Temperature Range, T_J . . . . . –55° to +150°C

Storage Temperature Range, T_{stg} . . . . . –55° to +150°C

Lead Temperature (During Soldering, 1/16” from case for 10sec max), T_L . . . . . +260°C

Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 10°C/W

Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 60°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
DC Current Gain	h_{FE}	V_{CE} = 1V, I_C = 200mA	100	–	220	
		V_{CE} = 1V, I_C = 2A	20	–	–	
Collector Saturation Voltage	$V_{CE(sat)}$	I_C = 1A, I_B = 50mA	–	–	0.5	V
Base Saturation Voltage	$V_{BE(sat)}$	I_C = 1A, I_B = 100mA	–	–	1.3	V
Collector Cutoff Current	I_{CES}	V_{CE} = 70V, T_J = +25°C	–	–	10	µA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 5V, T_J = +25°C	–	–	100	µA
Collector Capacitance	C_{cbo}	V_{CB} = 10V, f = 1MHz	–	–	100	pF
Current Gain–Bandwidth Product	f_T	V_{CE} = 4V, I_C = 20mA	–	50	–	MHz
Delay Time	t_d	I_C = 1A, I_{B1} = I_{B2} = 100mA	–	100	–	ns
Rise Time	t_r		–	100	–	ns
Storage Time	t_s		–	500	–	ns
Fall Time	t_f		75	–	–	ns