ELECTRONICS, INC.
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NTE265
Silicon NPN Transistor
Darlington Power Amplifier

Features:
- Forward Current Transfer Ratio: h_{FE} = 10,000 Min
- Power Dissipation: 1.33W Free–Air @ T_A = +50°C
- Hard Solder Mountdown

Applications:
- Driver, IC Driver
- Regulator
- Touch Switch
- Audio Output
- Relay Substitute
- Oscillator
- Servo–Amplifier
- Capacitor Multiplier

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

Collector–to–Emitter Voltage, V_{CEO} 50V
Collector–to–Emitter Voltage, V_{CES} 50V
Emitter–to–Base Voltage, V_{EBO} 13V
Collector Current (Note 1), I_C
- Continuous 0.5A
- Peak 1.0A

Power Dissipation, P_D
- T_C = +25°C (Note 2) 6.25W
- T_C = +70°C 4W
- T_A = +50°C
  - With Tab 1.33W
  - Without Tab 1W

Thermal Resistance, Junction–to–Case (Note 2), $R_{\Theta JC}$ . . . . . 20°C/W
Thermal Resistance, Junction–to–Ambient (Note 2), $R_{\Theta JA}$
- With Tab . . . . . 75°C/W
- Without Tab . . . . . 100°C/W

Operating Junction Temperature range (Note 2), T_J . . . . . –55° to +150°C
Storage Temperature range (Note 2), T_{stg} . . . . . –55° to +150°C
Lead Temperature (During Soldering, 1/16” from case, 10sec Max, Note 2), T_L . . . . . +260°C

Note 1. Pulse Test: Pulse Width = 25ms, Duty Cycle = 50%
Note 2. Tab temperature is measured on center of tab, 1/16” from plastic body.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Current Transfer Ratio	h_{FE}	I_C = 200mA, V_{CE} = 5V	10k	–	60k	
	h_{fe}	I_C = 20mA, V_{CE} = 5V, f = 1kHz	–	10k	–	
Collector–to–Emitter Voltage	V_{CEO}	I_C = 10mA	50	–	–	V
Collector Saturation Voltage	$V_{CE(sat)}$	I_C = 500mA, I_B = 0.5mA, Note 3	–	–	1.5	V
Base Saturation Voltage	$V_{BE(sat)}$	I_C = 500mA, I_B = 0.5mA, Note 3	–	–	2.0	V
Collector Cutoff Current	I_{CES}	V_{CE} = 50V, T_J = +25°C	–	–	0.5	µA
	I_{CBO}	V_{CE} = 50V, T_J = +150°C	–	–	20	µA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 13V	–	–	0.1	µA
Input Impedance	h_{ie}	I_C = 20mA, V_{CE} = 5V, f = 1kHz	50	500	–	Ω
Collector Capacitance	C_{cbo}	V_{CB} = 10V, f = 1MHz	–	5	10	pF
Gain Bandwidth Product	f_T	V_{CE} = 5V, I_C = 20mA	–	75	–	MHz
Delay Time and Rise Time	$t_d + t_r$	I_C = 1A, I_{B1} = 1mA	–	100	–	ns
Storage Time	t_s	I_C = 1A, I_{B1} = I_{B2} = 1mA	–	350	–	ns
Fall Time	t_f	I_C = 1A, I_{B1} = I_{B2} = 1mA	–	800	–	ns

Note 3. Pulsed measurement: Pulse Width = 300µs, Duty Cycle ≤ 2%.