

NTE267
Silicon NPN Transistor
High Gain Darlington Power Amp, Switch

Features:

- Forward Current Transfer Ratio: $h_{FE} = 90,000$ min.
- Free-Air Power Dissipation: $1.33W @ T_A = +50^{\circ}C$
- Hard Solder Mountdown

Applications:

- | | |
|--------------------|------------------------|
| ● Driver | ● Oscillator |
| ● Regulator | ● IC Driver |
| ● Audio Output | ● Servo Amplifier |
| ● Relay Substitute | ● Capacitor Multiplier |
| ● Touch Switch | |

Absolute Maximum Ratings: ($T_A = +25^{\circ}C$, unless otherwise specified)

Collector to Emitter, V_{CEO}	30V
Emitter to Base, V_{EBO}	13V
Collector to Emitter, V_{CES}	30V
Collector Current, I_C	
Continuous	500mA
Peak	1A
Power Dissipation, P_T	
Tab at $+25^{\circ}C$	6.25W
Free Air at $+50^{\circ}C$ ^w /Tab	1.33W
Thermal Resistance, Junction to Case (Note 1), R_{thJC}	$20^{\circ}C/W$
Thermal Resistance, Junction to Ambient (Note 1), R_{thJA}	$75^{\circ}C/W$
Operating Junction Temperature Range, T_J	-55° to $+150^{\circ}C$
Storage Temperature Range, T_{stg}	-55° to $+150^{\circ}C$
Lead Temperature (During Soldering, $1/16'' \pm 1/32''$ from case, 10sec max), T_L	$+260^{\circ}C$

Note 1. Tab temperature is measured on center of tab, $1/16''$ from plastic body.

Electrical Characteristics: ($T_A = +25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Current Transfer Ratio	h_{FE}	$V_{CE} = 5\text{V}$, $f = 1\text{kHz}$, $I_C = 200\text{mA}$	90k	–	–	
		$I_C = 20\text{mA}$	90k	–	–	
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}$, $I_B = 0.5\text{mA}$, Note 2	–	–	1.5	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 500\text{mA}$, $I_B = 0.5\text{mA}$	–	–	2.0	V
Collector Cutoff Current	I_{CES}	$V_{CE} = \text{Rated } V_{CES}$, $T_J = +25^\circ\text{C}$	–	–	0.5	μA
	I_{CBO}	$V_{CE} = \text{Rated } V_{CES}$, $T_J = +150^\circ\text{C}$	–	–	20	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 13\text{V}$	–	–	0.1	μA
Collector Capacitance	C_{cbo}	$V_{CB} = 10\text{V}$, $f = 1\text{MHz}$	–	5	10	pF
Gain Bandwidth Product	f_T	$V_{CE} = 5\text{V}$, $I_C = 20\text{mA}$	–	75	–	MHz
Switching Times						
Delay Time and Rise Time	t_d & t_r	$I_C = 1\text{A}$, $I_{B1} = 1\text{mA}$	–	100	–	ns
Storage Time	t_s	$I_C = 1\text{A}$, $I_{B1} = I_{B2} = 1\text{mA}$	–	350	–	ns
Fall Time	t_f	$I_C = 1\text{A}$, $I_{B1} = I_{B2} = 1\text{mA}$	–	800	–	ns

Note 2. Pulsed measurement, 300 μsec pulse width, duty cycle $\leq 2\%$.

