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NTE182 (NPN) & NTE183 (PNP) Silicon Complementary Transistors General Purpose Amplifier, Switch

Description:

The NTE182 (NPN) and NTE183 (PNP) are silicon transistors in a TO127 type case designed for use in general purpose amplifier and switching applications.

Features:

- DC Current Gain Specified to 10A
- High Current Gain-Bandwidth Product: $f_T = 2\text{MHz (Min) @ } I_C = 500\text{mA}$

Absolute Maximum Ratings:

Collector-Emitter Voltage, V_{CEO}	60V
Collector-Base Voltage, V_{CB}	70V
Emitter-Base Voltage, V_{EB}	5V
Collector Current, I_C	10A
Base Current, I_B	6A
Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D	90W
Derate Above 25°C	$0.72\text{W}/^\circ\text{C}$
Operating Junction Temperature Range, T_J	-55° to $+150^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ\text{C}$
Thermal Resistance, Junction-to-Case, R_{thJC}	$1.39^\circ\text{C}/\text{W}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 200\text{mA}, I_B = 0$, Note 1	60	-	-	V
Collector Cutoff Current	I_{CEO}	$V_{CE} = 30\text{V}, I_B = 0$	-	-	700	μA
		$V_{CE} = 70\text{V}, V_{BE(off)} = 1.5\text{V}$	-	-	1.0	mA
	I_{CBO}	$V_{CB} = 70\text{V}, I_E = 0$	-	-	1.0	mA
		$V_{CB} = 70\text{V}, I_E = 0, T_C = +150^\circ\text{C}$	-	-	10	mA
Emitter Cutoff Current	I_{EBO}	$V_{BE} = 5\text{V}, I_C = 0$	-	-	5.0	mA

Note 1. Pulse Test: Pulse Width $\leq 300\mu\text{s}$. Duty Cycle $\leq 2\%$.

Electrical Characteristics (Cont'd): ($T_C = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	$I_C = 4\text{A}, V_{CE} = 4\text{V}$	20	-	100	
		$I_C = 10\text{A}, V_{CE} = 4\text{V}$	5.0	-	-	
Base-Emitter ON Voltage	$V_{BE(on)}$	$I_C = 4\text{A}, V_{CE} = 4\text{V}$	-	-	1.8	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 4\text{A}, I_B = 400\text{mA}$	-	-	1.1	V
		$I_C = 10\text{A}, I_B = 3.3\text{A}$	-	-	8.0	V
Dynamic Characteristics						
Current Gain-Bandwidth Product	f_T	$I_C = 500\text{mA}, V_{CE} = 10\text{V}, f = 1\text{MHz}$	2.0	-	-	MHz

Note 1. Pulse Test: Pulse Width $\leq 300\mu\text{s}$. Duty Cycle $\leq 2\%$.

