

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

Description:

The NTE182 (NPN) and NTE183 (PNP) are silicon transistors in a TO18 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
	I_{CEX}	$V_{CE} = 70\text{V}$, $V_{BE(off)} = 1.5\text{V}$	–	–	1.0	mA
		$V_{CE} = 70\text{V}$, $V_{BE(off)} = 1.5\text{V}$, $T_C = +150^\circ\text{C}$	–	–	5.0	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 = 4A, V _{CE} = 4V	20	–	100	
		I _C = 10A, V _{CE} = 4V	5.0	–	–	
Base–Emitter ON Voltage	V _{BE(on)}	I _C = 4A, V _{CE} = 4V	–	–	1.8	V
Collector–Emitter Saturation Voltage	V _{CE(sat)}	I _C = 4A, I _B = 400mA	–	–	1.1	V
		I _C = 10A, I _B = 3.3A	–	–	8.0	V
Dynamic Characteristics						
Current Gain–Bandwidth Product	f _T	I _C = 500mA, V _{CE} = 10V, f = 1MHz	2.0	–	–	MHz

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

