NTE ELECTRONICS, INC.

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 = 2MHz (Min) @ I_C = 500mA

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°C), P_D 90W
Derate Above 25°C . . . . . 0.72W/°C
Operating Junction Temperature Range, T_J . . . . . −55° to +150°C
Storage Temperature Range, T_{stg} . . . . . −55° to +150°C
Thermal Resistance, Junction−to−Case, R_{thJC} . . . . . 1.39°C/W

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

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

Note 1. Pulse Test: Pulse Width ≤ 300μs. Duty Cycle ≤ 2%.

Electrical Characteristics (Cont'd): (T_C =+25°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 ≤ 300μs. Duty Cycle ≤ 2%.