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NTE2404 (NPN) & NTE2405 (PNP)
Silicon Complementary Transistors
Darlington, General Purpose

Description:

The NTE2404 (NPN) and NTE2405 (PNP) are silicon complementary Darlington transistors in an SOT–23 type surface mount case designed for general–purpose applications.

Absolute Maximum Ratings:

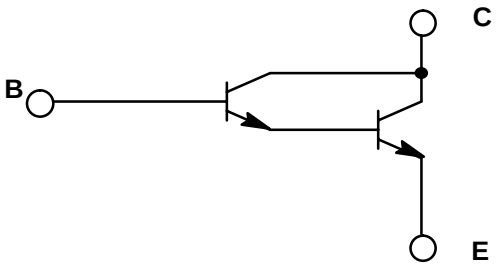
Collector–Emitter Voltage, V_{CEO} 30V
Collector–Base Voltage, V_{CBO} 40V
Emitter–Base Voltage, V_{EBO} 10V
Collector Current, I_C
  Continuous 300mA
  Peak 800mA
Base Current, I_B 100mA
Total Power Dissipation (T_A = +25°C, Note 1), P_D 350mW
Operating Junction Temperature, T_J . . . . . +150°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C
Thermal Resistance, Junction to Ambient (Note 1), R_{thJA} 350K/W

Note 1. Mounted on a ceramic substrate of .590 (15mm) x .590 (15mm) x .027 (0.7mm).

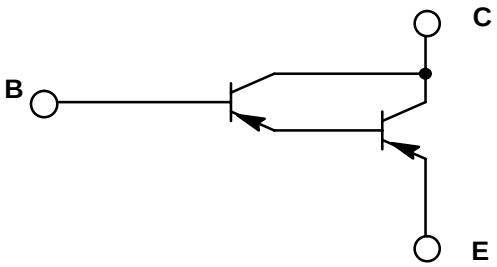
Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Base Current	I_{CBO}	V_{CBO} = 30V	–	–	100	nA
Emitter–Base Current	I_{EBO}	V_{EB} = 10V	–	–	100	nA
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 10mA	30	–	–	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 10μA	40	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 100nA	10	–	–	V
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 100mA, I_B = 0.1mA	–	–	1	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 100mA, I_B = 0.1mA	–	–	1.5	V
DC Current Gain	h_{FE}	I_C = 1mA, V_{CE} = 5V	4000	–	–	
		I_C = 10mA, V_{CE} = 5V	10000	–	–	
		I_C = 100mA, V_{CE} = 5V	20000	–	–	
Transition Frequency	f_T	I_C = 30mA, V_{CE} = 5V, f = 100MHz	–	220	–	MHz
Collector Capacitance	C_c	I_E = 0, V_{CB} = 30V	–	3.5	–	pF

Schematic Diagram



NPN



PNP