www.agelectronica.com
www.agelectronica.com

ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

NTE263 (NPN) & NTE264 (PNP)
Silicon Complementary Transistors
Darlington Power Amplifier

Description:

The NTE263 (NPN) and NTE264 (PNP) are complementary silicon Darlington power transistors in a TO220 type package designed for general purpose amplifier and low–speed switching applications.

Features:

- High DC Current Gain:
  h_{FE} = 2500 Typ (NTE263)
  = 3500 Typ (NTE264)
- Collector–Emitter Sustaining Voltage: $V_{CEO(sus)}$ = 100V Min
- Low Collector–Emitter Saturation Voltage:
  $V_{CE(sat)}$ = 2V Max @ I_C = 5A
- Monolithic Construction with Built–In Base–Emitter Shunt Resistor

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 100V
Collector–Base Voltage, V_{CB} 100V
Emitter–Base Voltage, V_{EB} 5V
Collector Current, I_C
  Continuous 10A
  Peak 15A
Base Current, I_B 250mA
Total Power Dissipation (T_C = +25°C), P_D 65W
  Derate Above 25°C . . . . 0.52W/°C
Total Power Dissipation (T_A = +25°C), P_D 2W
  Derate Above 25°C . . . . 0.016W/°C
Operating Junction Temperature range, T_J . . . . –65° to +150°C
Storage Temperature range, T_{stg} . . . . –65° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . 1.92°C/W
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . 62.5°C/W

www.agelectronica.com
www.agelectronica.com

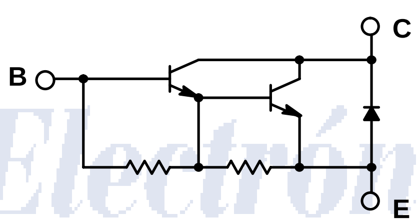
www.agelectronica.com
www.agelectronica.com

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

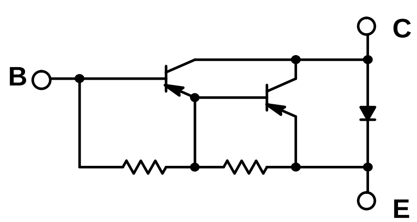
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	I_C = 200mA, I_B = 0, Note 1	100	–	–	V
Collector Cutoff Current	I_{CEO}	V_{CE} = 100V, I_B = 0	–	–	1.0	mA
	I_{CEX}	V_{CE} = 100V, $V_{EB(off)}$ = 1.5V	–	–	300	µA
		V_{CE} = 100V, $V_{EB(off)}$ = 1.5V, T_C = +125°C	–	–	3	mA
Emitter Cutoff Current	I_{EBO}	V_{BE} = 5V, I_C = 0	–	–	5	mA
ON Characteristics (Note 1)						
DC Current Gain	h_{FE}	I_C = 5A, V_{CE} = 3V	1000	–	20000	
		I_C = 10A, V_{CE} = 3V	100	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 5A, I_B = 0.01A	–	–	2	V
		I_C = 10A, I_B = 0.1A	–	–	3	V
Base–Emitter ON Voltage	$V_{BE(on)}$	I_C = 3A, V_{CE} = 3V	–	–	2.8	V
		I_C = 10A, V_{CE} = 3V	–	–	4.5	V
Dynamic Characteristics						
Small–Signal Current Gain	$\|h_{fe}\|$	I_C = 1A, V_{CE} = 5V, f_{test} = 1MHz	20	–	–	
Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz	–	–	200	pF
Small–Signal Current Gain	h_{fe}	I_C = 1A, V_{CE} = 5V, f = 1kHz	1000	–	–	

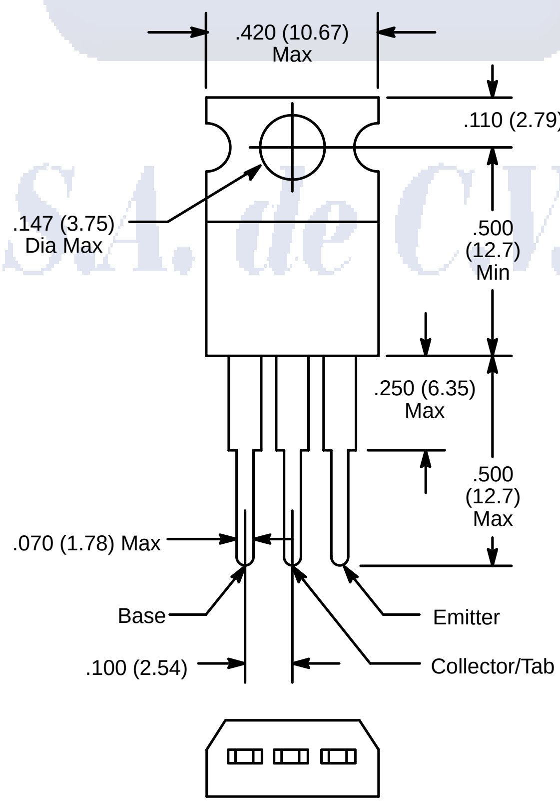
Note 1. Pulse Test: Pulse Width ≤ 300µs, Duty Cycle ≤ 2%.

NTE263



NTE264





www.agelectronica.com
www.agelectronica.com