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## NTE253 (NPN) & NTE254 (PNP) Silicon Complementary Transistors Darlington Power Amplifier TO-126 Type Package

**Description:**

The NTE253 (NPN) and NTE254 (PNP) are silicon complementary Darlington transistors in a TO-126 type case designed for general-purpose amplifier and low-speed switching applications.

**Features:**

- High DC Current Gain:  $h_{FE} = 750$  (Min) @  $I_C = 1.5A$
- Monolithic Construction with Built-In Base-Emitter Resistors to Limit Leakage Multiplication

**Absolute Maximum Ratings:** ( $T_A = +25^\circ C$  unless otherwise specified)

Collector-Emitter Voltage, $V_{CEO}$ .....	100V
Collector-Base Voltage, $V_{CBO}$ .....	100V
Emitter-Base Voltage, $V_{EBO}$ .....	5V
Collector Current, $I_C$ .....	4A
Base Current, $I_B$ .....	100mA
Total Power Dissipation ( $T_C = +25^\circ C$ ), $P_D$ .....	40W
Operating Junction Temperature, $T_J$ .....	+150°C
Storage Temperature Range, $T_{stg}$ .....	-55° to +150°C
Thermal Resistance, Junction-to-Case, $R_{thJC}$ .....	3.13°C/W

Note 1. NTE253MCP is a matched complementary pair containing 1 each of NTE253 (NPN) and NTE254 (PNP).

**Electrical Characteristics:** ( $T_A = +25^\circ C$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>OFF Characteristics</b>						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 50mA, I_B = 0$ , Note 1	100	-	-	V
Collector Cutoff Current	$I_{CEO}$	$V_{CE} = 100V, I_B = 0$	-	-	0.5	mA
		$V_{CE} = 100V, I_E = 0$	-	-	0.2	mA
		$V_{CE} = 100V, I_E = 0, T_C = +100^\circ C$	-	-	2.0	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{BE} = 5V, I_C = 0$	-	-	2.0	mA

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>ON Characteristics</b>						
DC Current Gain	$h_{FE}$	$V_{CE} = 3V, I_C = 1.5A$	750	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1.5A, I_B = 30mA$	-	-	2.5	V
Base-Emitter ON Voltage	$V_{BE(on)}$	$V_{CE} = 3V, I_C = 1.5A$	-	-	2.5	V

