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## NTE2562 (NPN) & NTE2563 (PNP) Silicon Complementary Transistors High Current Switch

**Description:**

The NTE2562 (NPN) and NTE2563 (PNP) are silicon complementary transistors in a TO220 type package designed for use as a high current switch. Typical applications include relay drivers, high-speed inverters, converters, etc.

**Features:**

- Low Collector–Emitter Saturation Voltage
- High Current Capacity

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

Collector–Base Voltage, $V_{CBO}$ .....	60V
Collector–Emitter Voltage, $V_{CEO}$ .....	30V
Emitter–Base Voltage, $V_{EBO}$ .....	6V
Collector Current, $I_C$	
Continuous .....	12A
Pulse .....	20A
Collector Dissipation, $P_C$	
$T_A = +25^\circ\text{C}$ .....	2W
$T_C = +25^\circ\text{C}$ .....	25W
Operating Junction Temperature, $T_J$ .....	+150°C
Storage Temperature Range, $T_{stg}$ .....	–55° to +150°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 40V, I_E = 0$	–	–	0.1	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 4V, I_C = 0$	–	–	0.1	mA
DC Current Gain	$h_{FE}$	$V_{CE} = 2V, I_C = 1A$	100	–	200	
		$V_{CE} = 2V, I_C = 6A$	30	–	–	
Current Gain–Bandwidth Product	$f_T$	$V_{CE} = 5V, I_C = 1A$	–	120	–	MHz

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Saturation Voltage NTE2562	$V_{CE(sat)}$	$I_C = 5\text{A}, I_B = 0.25\text{A}$	–	–	0.4	V
NTE2563			–	–	0.5	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 1\text{mA}, I_E = 0$	60	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, R_{BE} = \infty$	30	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1\text{mA}, I_C = 0$	6	–	–	V
Turn–On Time NTE2562	$t_{on}$	$V_{CC} = 10\text{V}, V_{BE} = -5\text{V},$ $10I_{B1} = -10I_{B2} = I_C = 5\text{A},$ Pulse Width = $20\mu\text{s},$ Duty Cycle = 1%	–	0.2	–	$\mu\text{s}$
NTE2563			–	0.1	–	$\mu\text{s}$
Storage Time NTE2562	$t_{stg}$		–	0.5	–	$\mu\text{s}$
NTE2563			–	0.3	–	$\mu\text{s}$
Fall Time	$t_f$		–	0.03	–	$\mu\text{s}$

