

## NTE2519 (NPN) & NTE2520 (PNP) Silicon Complementary Transistors High Voltage Driver

### **Features:**

- High Breakdown Voltage
- Large Current Capacity
- Isolated Package

### **Applications:**

- Color TV Audio Output
- Converters
- Inverters

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

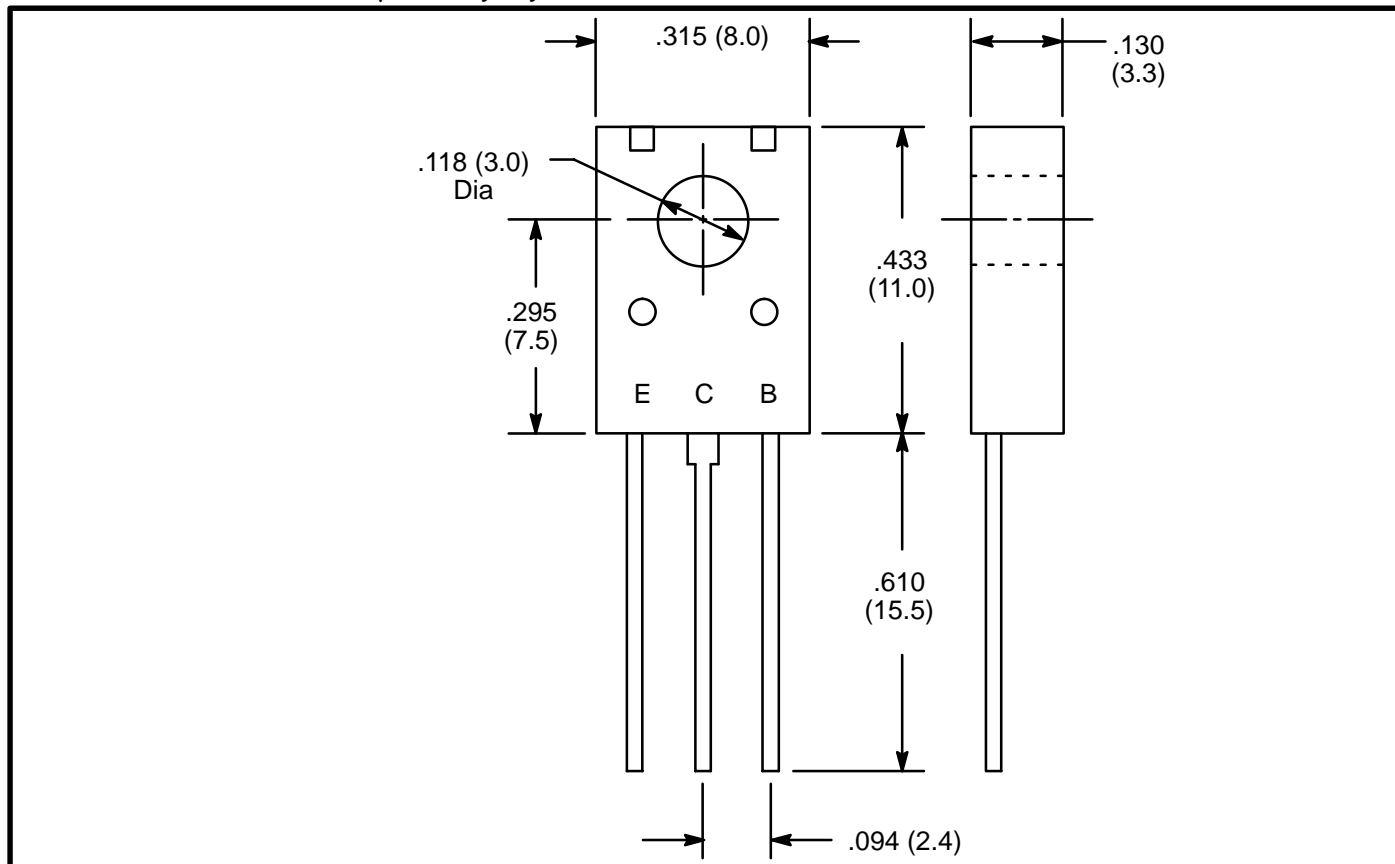
Collector to Base Voltage, $V_{CBO}$	180V
Collector to Emitter Voltage, $V_{CEO}$	160V
Emitter to Base Voltage, $V_{EBO}$	6V
Collector Current, $I_C$	
Continuous	1.5A
Peak	2.5A
Collector Dissipation, $P_C$	
$T_A = +25^\circ\text{C}$	1.5W
$T_C = +25^\circ\text{C}$	10W
Operating Junction Temperature, $T_J$	$+150^\circ\text{C}$
Storage Temperature Range, $T_{stg}$	$-55^\circ$ to $+150^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 120\text{V}, I_E = 0$	—	—	1.0	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 4\text{V}, I_C = 0$	—	—	1.0	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = 5\text{V}, I_C = 100\text{mA}$	140	—	400	
		$V_{CE} = 5\text{V}, I_C = 10\text{mA}$	90	—	—	
Gain Bandwidth Product	$f_T$	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$	—	120	—	MHz

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Capacitance NTE2519	C <sub>ob</sub>	V <sub>CB</sub> = 10V, f = 1MHz	—	14	—	pF
NTE2520			—	22	—	pF
Collector to Emitter Saturation Voltage NTE2519	V <sub>CE(sat)</sub>	I <sub>C</sub> = 500mA, I <sub>B</sub> = 50mA	—	0.13	0.45	V
NTE2520			—	0.2	0.5	V
Base to Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 500mA, I <sub>B</sub> = 50mA	—	0.85	1.2	V
Collector to Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 10μA, I <sub>E</sub> = 0	180	—	—	V
Collector to Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 1mA, R <sub>BE</sub> = ∞	160	—	—	V
Emitter to Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 10μA, I <sub>C</sub> = 0	6	—	—	V
Rise Time	t <sub>on</sub>	I <sub>C</sub> = 10A, I <sub>B1</sub> = 10A, I <sub>B2</sub> = 700mA, Note 1	—	0.04	—	μs
Storage Time NTE2519	t <sub>stg</sub>		—	1.2	—	μs
NTE2520			—	0.7	—	μs
Fall Time NTE2519	t <sub>f</sub>		—	0.08	—	μs
NTE2520			—	0.04	—	μs

Note 1. Pulse Width =  $20\mu\text{s}$ , Duty Cycle  $\leq 1\%$ .

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