

## NTE238 Silicon NPN Transistor Color TV, Horizontal Output

### Description:

The NTE238 is a silicon NPN horizontal deflection transistor in a TO3 type package designed for use in deflection circuits.

### Features:

- $V_{CEX} = 1500V$
- Safe Operating Area @  $50\mu s = 20A, 400V$

### Absolute Maximum Ratings:

Collector–Emitter Voltage, $V_{CEX}$ .....	1500V
Emitter–Base Voltage, $V_{EB}$ .....	5V
Collector Current–Continuous, $I_C$ .....	8A
Base Current–Continuous, $I_B$ .....	4A
Emitter Current–Continuous, $I_E$ .....	12A
Total Power Dissipation ( $T_C = +25^\circ C$ ), $P_D$ .....	100W
Derate above $25^\circ C$ .....	0.8W/ $^\circ C$
Operating Junction Temperature Range, $T_J$ .....	$-65^\circ$ to $+150^\circ C$
Storage Temperature Range, $T_{stg}$ .....	$-65^\circ$ to $+150^\circ C$
Thermal Resistance, Junction–to–Case, $R_{thJC}$ .....	1.25 $^\circ C/W$
Maximum Lead Temperature (Soldering Purposes, 1/8" from case for 5sec), $T_L$ .....	$+275^\circ C$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>OFF Characteristics</b>						
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	$V_C = 50mA, I_B = 0$	750	–	–	V
Collector Cutoff Current	$I_{CES}$	$V_{CE} = 1500V, V_{BE} = 0$	–	–	0.25	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{BE} = 5V, I_C = 0$	–	–	0.1	mA
<b>ON Characteristics (Note 1)</b>						
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 5A, I_B = 1A$	–	–	5.0	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 5A, I_B = 1A$	–	–	1.5	V
<b>SWITCHING CHARACTERISTICS</b>						
Fall Time	$t_f$	$I_C = 5A, I_{B1} = 1A, L_B = 8\mu H$	–	0.4	1.0	$\mu s$

Note 1. Pulse test: Pulse Width  $\leq 300\mu s$ , Duty Cycle = 2%.

