

## NTE2506 Silicon NPN Transistor High Frequency Video Driver

### **Description:**

The NTE2506 is a silicon NPN epitaxial transistor in a TO126 type package designed for use in the cascode stage of the driver for high-resolution color graphics monitors.

### **Features:**

- High Breakdown Voltage
- Low Output Capacitance

### **Absolute Maximum Ratings:**

Collector–Base Voltage, $V_{CBO}$ .....	115V
Collector–Emitter Voltage, $V_{CEO}$ .....	95V
Collector–Emitter Voltage ( $R_{BE} = 100\Omega$ ), $V_{CER}$ .....	110V
Emitter–Base Voltage, $V_{EBO}$ .....	3V
DC Collector Current, $I_C$ .....	400mA
Total Power Dissipation ( $T_S \leq +85^\circ\text{C}$ , Note 1), $P_{tot}$ .....	5W
Operating Junction Temperature, $T_J$ .....	+175°C
Storage Temperature Range, $T_{stg}$ .....	–65° to +150°C
Thermal Resistance, Junction–to–Soldering Point ( $T_S \leq +85^\circ\text{C}$ , Note 1), $R_{thJS}$ .....	18K/W

Note 1.  $T_S$  is the temperature at the soldering point of the collector lead.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 0.1\text{mA}$	115	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}$	95	–	–	V
	$V_{(BR)CER}$	$I_C = 10\text{mA}$ , $R_{BE} = 100\Omega$	110	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 0.1\text{mA}$	3	–	–	V
Collector Cutoff Current	$I_{CES}$	$I_B = 0$ , $V_{CE} = 50\text{V}$	–	–	100	$\mu\text{A}$
	$I_{CBO}$	$I_E = 0$ , $V_{CB} = 50\text{V}$	–	–	20	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$I_C = 100\text{mA}$ , $V_{CE} = 10\text{V}$ , $T_A = +25^\circ\text{C}$	20	35	–	
Transition Frequency	$f_T$	$I_C = 100\text{mA}$ , $V_{CE} = 10\text{V}$ , $f = 100\text{MHz}$ , $T_A = +25^\circ\text{C}$	0.8	1.2	–	GHz
Collector–Base Capacitance	$C_{cb}$	$I_C = 0$ , $V_{CB} = 10\text{V}$ , $f = 1\text{MHz}$ , $T_A = +25^\circ\text{C}$	–	2.0	–	pF
Collector Capacitance	$C_C$	$I_E = I_e = 0$ , $V_{CB} = 10\text{V}$ , $f = 1\text{MHz}$	–	3.5	–	pF

