



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089
<http://www.nteinc.com>

NTE2639 Silicon NPN Transistor CRT Horizontal Deflection, High Voltage, High Speed Switch

Description:

The NTE2639 is a high voltage, high speed switching silicon NPN transistor in a plastic full-pack envelope designed for use in horizontal deflection circuits of color TV receivers.

Absolute Maximum Ratings:

Collector-Emitter Voltage Peak Value ($V_{BE} = 0V$), V_{CESM}	1700V
Collector-Emitter Voltage (OpenBase), V_{CEO}	825V
Collector Current, I_C	
DC	12A
Peak Value	30A
Base Current, I_B	
DC	12A
Peak Value	20A
Reverse Base Current (Average over any 20ms period), $-I_{B(AV)}$	200mA
Reverse Base Current Peak Value (Note 1), $-I_{BM}$	9A
Total Power Dissipation ($T_{HS} \leq +25^{\circ}C$), P_{tot}	45W
Electrostatic Discharge Capacitor Voltage (Human body model (250pF, 1.5k Ω), V_C	10kV
Operating Junction Temperature, T_J	+150 $^{\circ}C$
Storage Temperature Range, T_{stg}	-65 $^{\circ}$ to +150 $^{\circ}C$
Maximum Thermal Resistance, Junction-to-Heatsink, R_{thJHS}	
Without Heatsink Compound	3.7K/W
With Heatsink Compound	2.8K/W
Typical Thermal Resistance, Junction-to-Ambient (In Free Air), R_{thJA}	35K/W

Note 1. Turn-off current.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Isolation Limiting Value and Characteristic						
Repetitive Peak Voltage from All Three Terminals to External Heatsink	V_{isol}	R.H. $\leq 65\%$; Clean and Dustfree	-	-	2500	V
Capacitance from T2 to External Heatsink	C_{isol}	$f = 1\text{MHz}$	-	22	-	pF
Static Characteristics						
Collector Cutoff Current	I_{CES}	$V_{CE} = 1700\text{V}, V_{BE} = 0$	-	-	1.0	mA
		$V_{CE} = 1700\text{V}, V_{BE} = 0, T_J = +125^{\circ}\text{C}$	-	-	2.0	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 7.5\text{V}, I_C = 0\text{A}$	-	-	1.0	mA
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_B = 1\text{mA}$	7.5	13.5	-	V
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_B = 0\text{A}, I_C = 100\text{mA}, L = 25\text{mH}$	825	-	-	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 7\text{A}, I_B = 1.75\text{A}$	-	-	1.0	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 7\text{A}, I_B = 1.75\text{A}$	-	-	1.1	V
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 0.1\text{A}$	-	22	-	
		$V_{CE} = 1\text{V}, I_C = 7\text{A}$	4.0	6.0	6.5	
Dynamic Characteristics (Switching Times, 16kHz Line Deflection Circuit)						
Turn-Off Storage Time	t_s	$I_{C(sat)} = 7\text{A}, L_C = 650\mu\text{H}, C_{fb} = 18\text{nF}, V_{CC} = 162\text{V}, I_{B(end)} = 1.5\text{A}, L_B = 2\mu\text{H}, -V_{BB} = 4\text{V}$	-	5.8	6.5	μs
Turn-Off Fall Time	t_f		-	0.6	0.8	μs

Note 2. Measured with half sine-wave voltage (curve tracer).

