

NTE2635 Silicon NPN Transistor Horizontal Deflection ^w/Internal Damper Diode

Description:

The NTE2635 is an enhanced performance, new generation, high-voltage, high-speed switching NPN transistor with an integrated damper diode in a full-pack envelope intended for use in horizontal deflection circuits in color TV receivers. This device features exceptional tolerance to base drive and collector current load variations resulting in a very low worst case dissipation.

Absolute Maximum Ratings:

Collector-Emitter Voltage ($V_{BE} = 0V$), V_{CESM}	1500V
Collector-Emitter Voltage, V_{CEO}	700V
Collector Current, I_C	
Continuous	8A
Peak	15A
Base Current, I_B	
Continuous	4A
Peak	6A
Reverse Base Current, $-I_B$	
Continuous (Average over any 20ms period)	100mA
Peak (Turn-Off Current)	5A
Total Power Dissipation ($T_C = +25^\circ C$), P_{tot}	35W
Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	-65° to +150°C
Thermal Resistance, Junction-to-Case (With Heat Sink Compound), R_{thJC}	3.6K/W
Typical Thermal Resistance, Junction-to-Ambient, R_{thJA}	55K/W

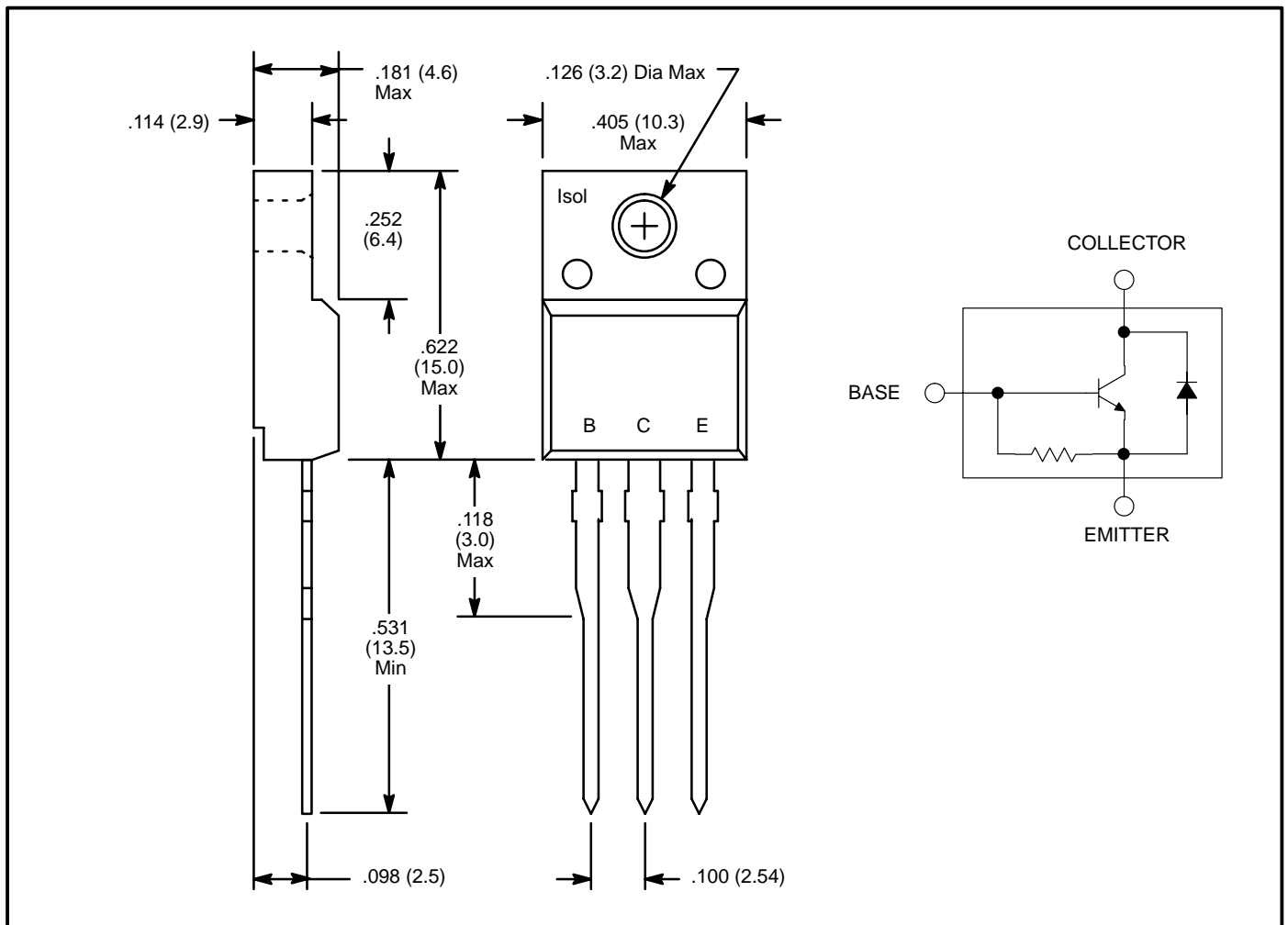
Electrical Characteristics: ($T_C = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Isolation Limiting Value						
RMS Isolation Voltage from all Three Terminals to Case	V_{ISOL}	$f = 50-60\text{hz}$, Sinusoidal Waveform, R.H. $\leq 65\%$, Clean and Dustfree	-	-	2500	V
Capacitance from T2 to External Heat Sink	C_{ISOL}	$f = 1\text{MHz}$	-	10	-	pF
Static Characteristics						
Collector Cutoff Current	I_{CES}	$V_{CE} = 1500V, V_{BE} = 0$, Note 1	-	-	1.0	mA
		$V_{CE} = 1500V, V_{BE} = 0, T_J = +125^\circ C$, Note 1	-	-	2.0	mA

Note 1. Measured with half sine-wave voltage (curve tracer).

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics (Cont'd)						
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 7.5\text{V}, I_C = 0$	140	–	390	mA
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_B = 600\text{mA}$	7.5	13.5	–	V
Base–Emitter Resistance	R_{be}	$V_{EB} = 7.5\text{V}$	–	33	–	Ω
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_B = 0, I_C = 100\text{mA}, L = 25\text{mH}$	700	–	–	V
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 4.5\text{A}, I_B = 1.1\text{A}$	–	–	5.0	V
		$I_C = 4.5\text{A}, I_B = 1.29\text{A}$	–	–	1.0	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 4.5\text{A}, I_B = 1.7\text{A}$	–	–	1.3	V
DC Current Gain	h_{FE}	$I_C = 1\text{A}, V_{CE} = 5\text{V}$	7	13	23	
		$I_C = 4.5\text{A}, V_{CE} = 1\text{V}$	4.0	5.5	7.5	
Diode Forward Voltage	V_F	$I_F = 4.5\text{A}$	–	1.6	2.0	V
Dymanic Characteristics						
Collector Capacitance	C_C	$I_E = 0, V_{CB} = 10\text{V}, f = 1\text{MHz}$	–	80	–	pF
Turn–Off Storage Time	t_s	$I_C = 4.5\text{A Peak}, I_{B(end)} = 1.1\text{A},$ $L_B = 6\mu\text{H}, -V_{BB} = 4\text{V},$ $(-dI_B/dt = 0.6\text{A}/\mu\text{s})$	–	5.0	6.0	μs
Turn–Off Fall Time	t_f		–	0.4	0.6	μs



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