ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089

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°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°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 = 50–60hz, Sinusoidal Waveform, R.H. ≤ 65%, Clean and Dustfree	–	–	2500	V
Capacitance from T2 to External Heat Sink	C_{ISOL}	f = 1MHz	–	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°C, Note 1	–	–	2.0	mA

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

Electrical Characteristics: (T_C = +25°C unless otherwise specified)

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