



ST2001HI

HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTOR

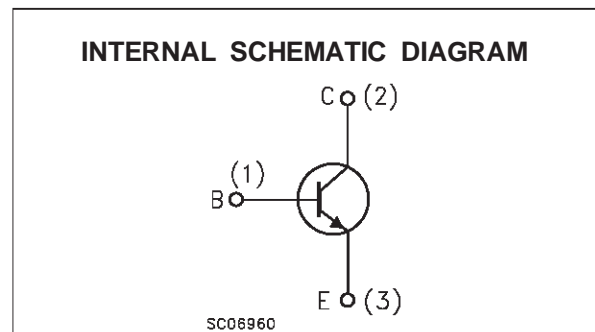
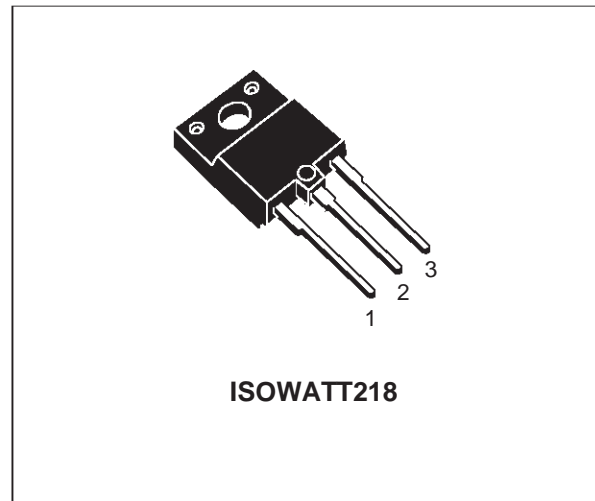
- NEW SERIES, ENHANCED PERFORMANCE
- FULLY INSULATED PACKAGE FOR EASY MOUNTING
- HIGH VOLTAGE CAPABILITY
- HIGH SWITCHING SPEED
- TIGHTER h_{fe} CONTROL
- IMPROVED RUGGEDNESS

APPLICATIONS:

- HORIZONTAL DEFLECTION FOR COLOR TV AND MONITOR

DESCRIPTION

The ST2001HI is manufactured using Diffused Collector technology for more stable operation Vs base drive circuit variations resulting in very low worst case dissipation.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	1500	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	600	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	7	V
I_C	Collector Current	10	A
I_{CM}	Collector Peak Current ($t_p < 5$ ms)	20	A
I_B	Base Current	7	A
P_{tot}	Total Dissipation at $T_C = 25$ °C	55	W
T_{stg}	Storage Temperature	-65 to 150	°C
T_j	Max. Operating Junction Temperature	150	°C

ST2001HI

THERMAL DATA

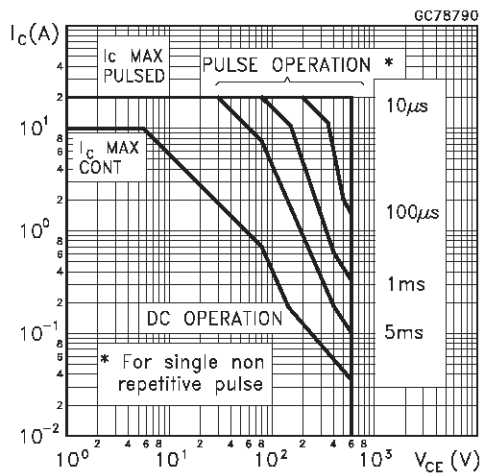
R _{thj-case}	Thermal Resistance Junction-case	Max	2.3	°C/W
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ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

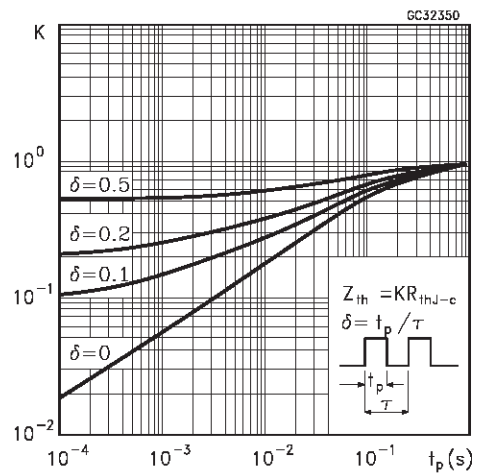
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CES}	Collector Cut-off Current (V _{BE} = 0)	V _{CE} = 1500 V V _{CE} = 1500 V T _j = 125 °C			1 2	mA mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 7 V			1	mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 100 mA L = 25 mH	600			V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 5 A I _B = 1.25 A			1.5	V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 5 A I _B = 1.25 A			1.2	V
h _{FE*}	DC Current Gain	I _C = 6 A V _{CE} = 5 V	5		10	
t _s t _f	INDUCTIVE LOAD Storage Time Fall Time	I _C = 5 A I _{Bon(END)} = 1 A L _B = 1 μH V _{BB} = -2.5 V f = 64 KHz		2.5 0.3	3.5 0.45	μs μs

* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

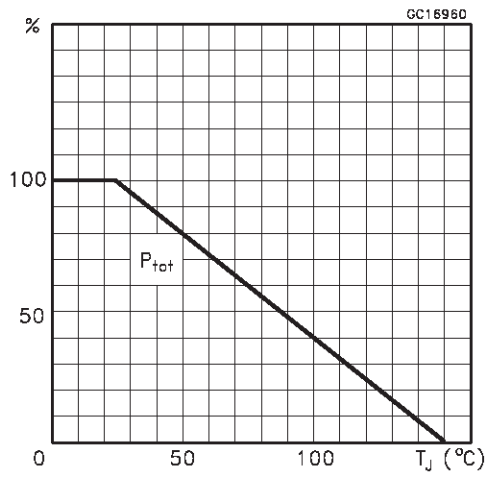
Safe Operating Area



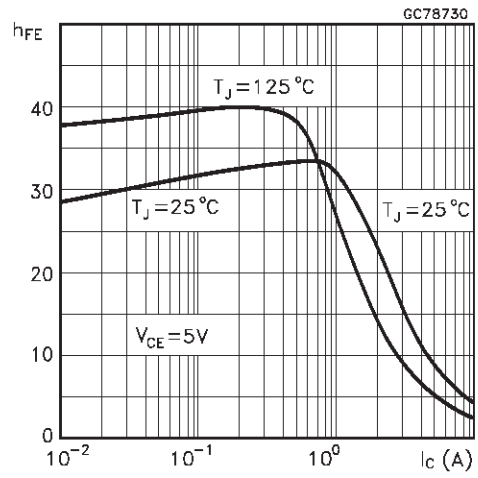
Thermal Impedance



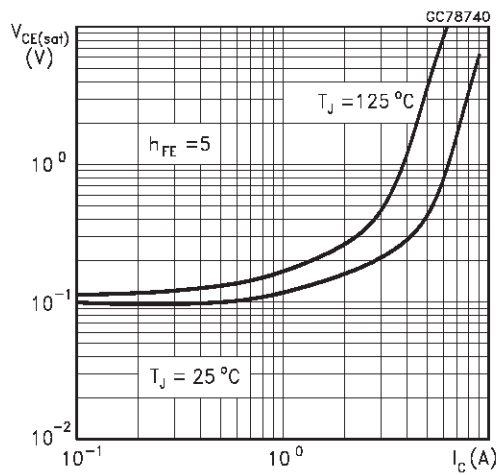
Derating Curve



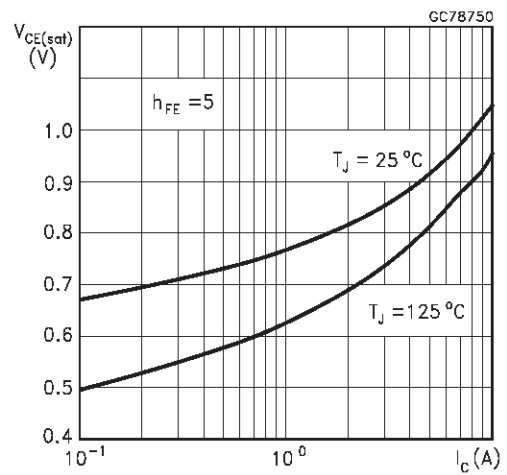
DC Current Gain



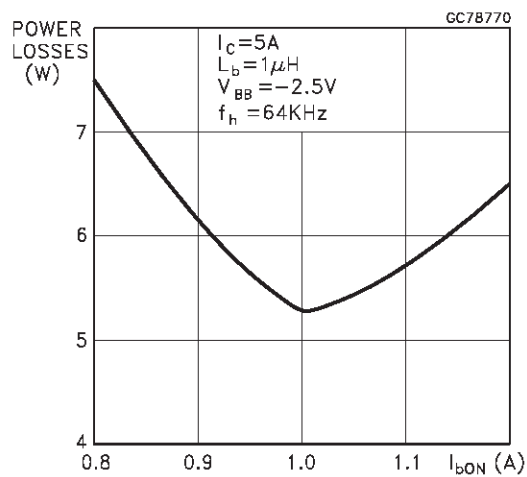
Collector Emitter Saturation Voltage



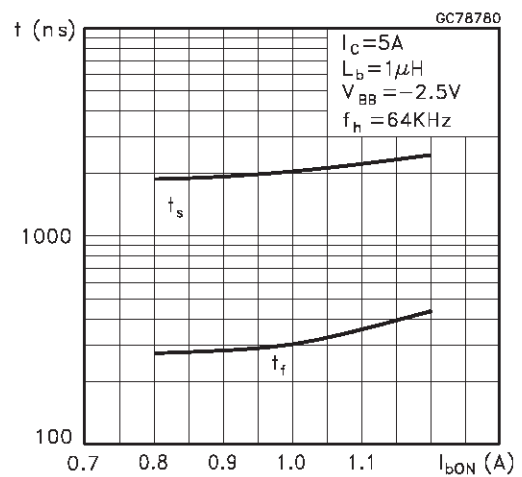
Base Emitter Saturation Voltage



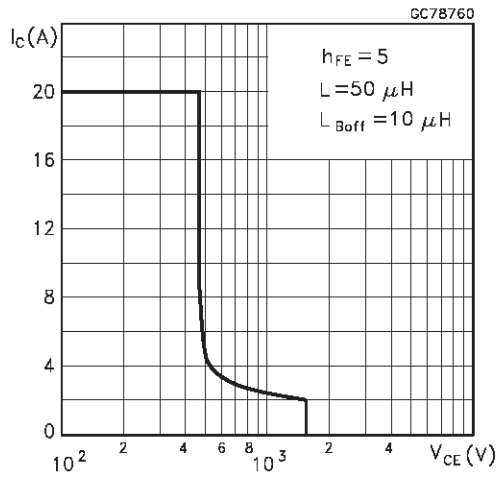
Power Losses



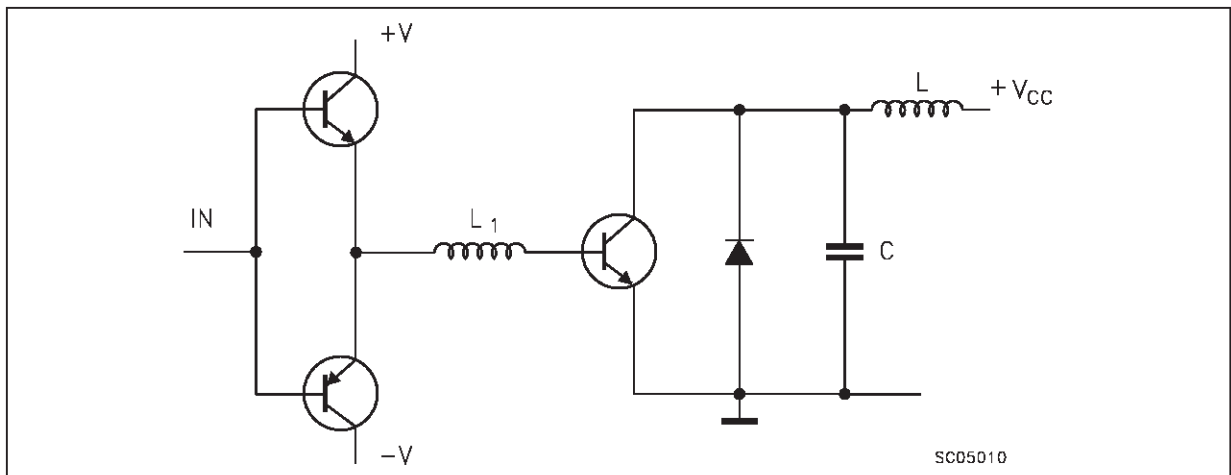
Switching Time Inductive Load



RBSOA



Inductive Load Switching Test Circuits.



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