



ST1802HI

HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTOR

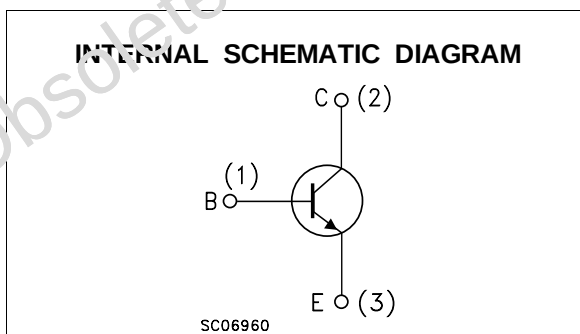
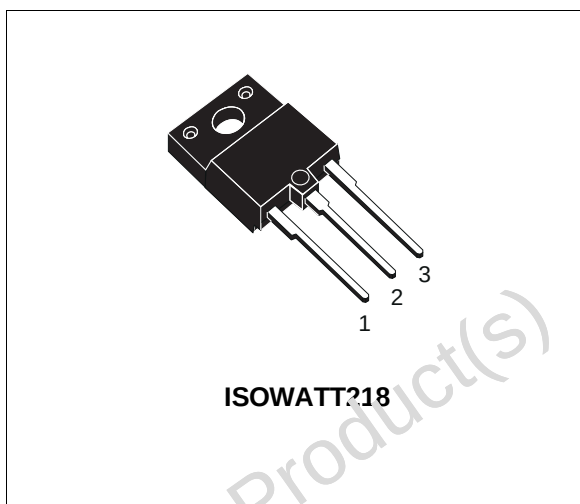
- NEW SERIES, ENHANCED PERFORMANCE
- FULLY INSULATED PACKAGE (U.L. COMPLIANT) FOR EASY MOUNTING
- HIGH VOLTAGE CAPABILITY ($> 1500\text{ V}$)
- HIGH SWITCHING SPEED
- TIGHTER h_{fe} CONTROL
- IMPROVED RUGGEDNESS

APPLICATIONS:

- HORIZONTAL DEFLECTION FOR COLOR TVs UP TO 25 INCHES

DESCRIPTION

The device 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_{CB0}	Collector-Base Voltage ($I_E = 0$)	1500	V
V_{CE0}	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 ($t_p < 5\text{ ms}$)	15	A
I_B	Base Current	4	A
P_{tot}	Total Dissipation at $T_c = 25\text{ }^{\circ}\text{C}$	50	W
V_{isol}	Insulation Withstand Voltage (RMS) from All Three Leads to External Heatsink	2500	V
T_{stg}	Storage Temperature	-65 to 150	$^{\circ}\text{C}$
T_j	Max. Operating Junction Temperature	150	$^{\circ}\text{C}$

THERMAL DATA

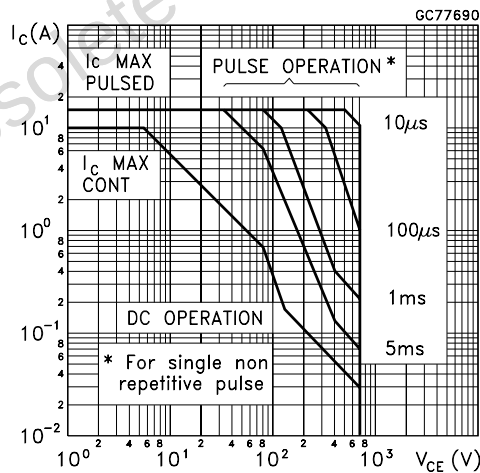
R _{thj-case}	Thermal Resistance Junction-case	Max	2.5	°C/W
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ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

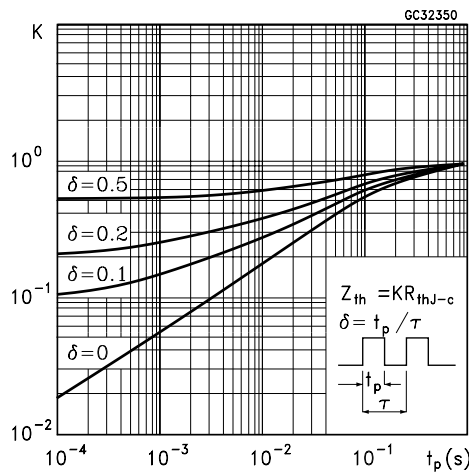
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CES}	Collector Cut-off Current (V _{BE} = 0)	V _{CE} = 1500 V V _{CE} = 1500 V T _C = 125 °C			1 2	mA mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 7 V			1	mA
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 100 mA L = 25 mH	600			V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 4 A I _B = 0.8 A I _C = 4 A I _B = 1.2 A			5 1.5	V V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 4.5 A I _B = 1 A			1.2	V
h _{FE} *	DC Current Gain	I _C = 1 A V _{CE} = 5 V I _C = 5 A V _{CE} = 1 V I _C = 5 A V _{CE} = 5 V	4	25 4.5	9	
t _s t _f	INDUCTIVE LOAD Storage Time Fall Time	I _C = 4 A I _{Bon(END)} = 850 mA L _B = 4.5 μH V _{BB(off)} = -2.5 V f = 16 KHz (see figure 1)		2.6 0.2	4 0.6	μs μs

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

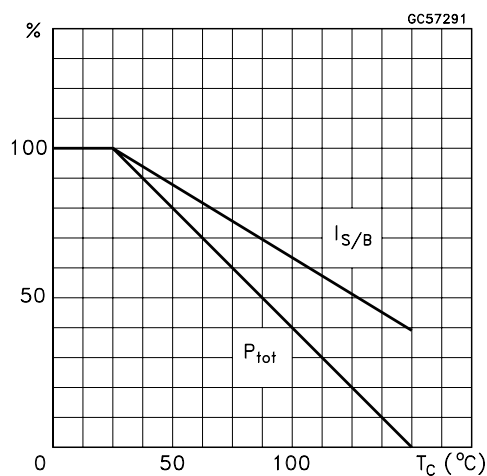
Safe Operating Area



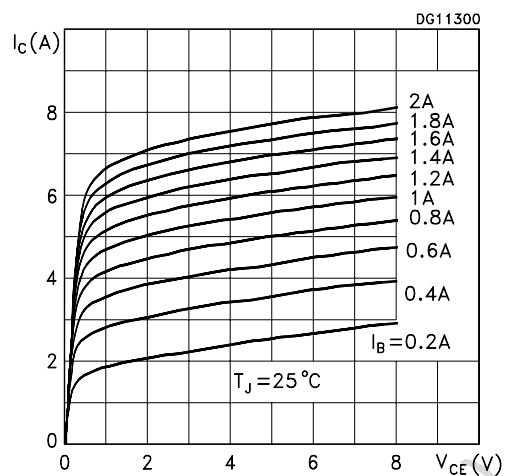
Thermal Impedance



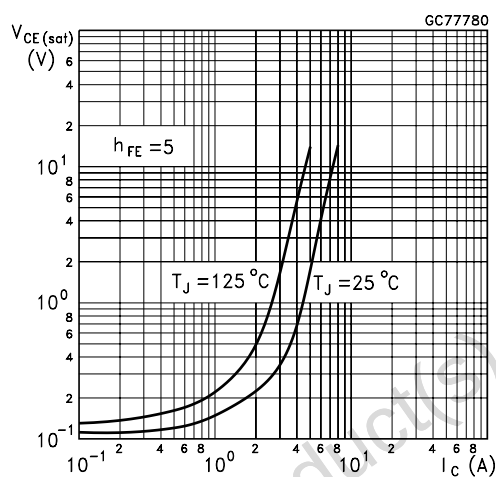
Derating Curve



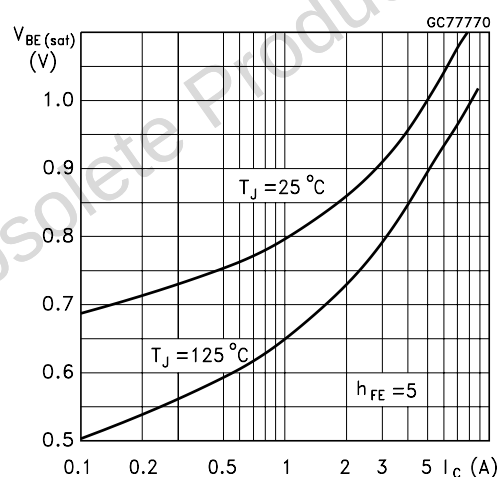
Output Characteristics



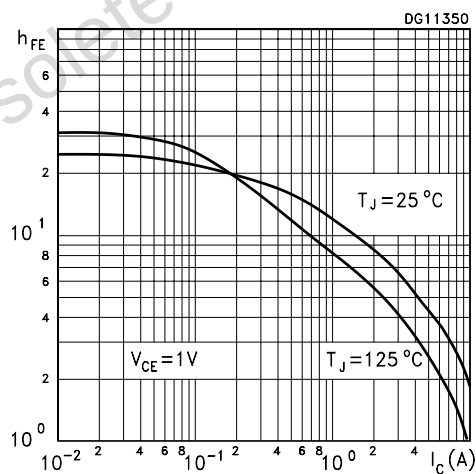
Collector Emitter Saturation Voltage



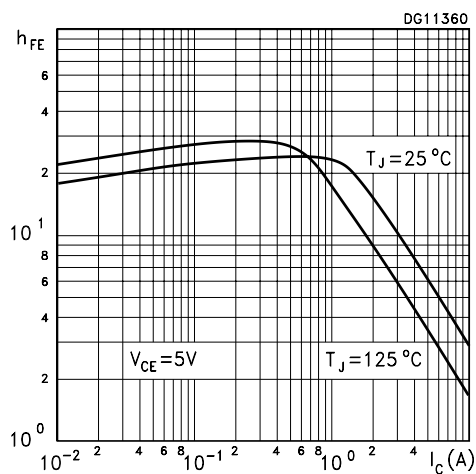
Base Emitter Saturation Voltage



DC Current Gain



DC Current Gain



SECTION LEAD
SCALE 40:1

- Weight : 4.9 g (typ.)
- Maximum Torque (applied to mounting flange) Recommended: 0.8 Nm; Maximum: 1 Nm
- The side of the dissipator must be flat within 80 μm

P025C/B

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