

ST1803DHI

HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTOR

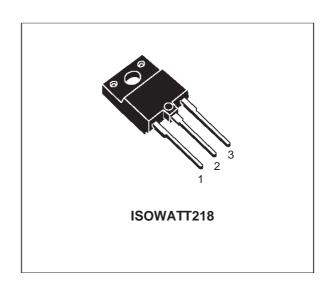
- NEW SERIES, ENHANCHED PERFORMANCE
- FULLY INSULATED PACKAGE FOR EASY MOUNTING
- INTEGRATED FREE WHEELING DIODE
- HIGH VOLTAGE CAPABILITY
- HIGH SWITCHING SPEED
- TIGTHER hfe CONTROL
- IMPROVED RUGGEDNESS

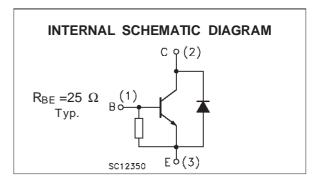
APPLICATIONS:

 HORIZONTAL DEFLECTION FOR COLOR TV

DESCRIPTION

The ST1803DHI 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
Vceo	Collector-Emitter Voltage (I _B = 0)	600	V
V _{EBO}	Emitter-Base Voltage (I _C = 0)	7	V
Ic	Collector Current	10	Α
I _{CM}	Collector Peak Current (t _p < 5 ms)	15	Α
lΒ	Base Current	4	Α
P _{tot}	Total Dissipation at T _c = 25 °C	50	W
T _{stg}	Storage Temperature	-65 to 150	°C
Tj	Max. Operating Junction Temperature	150	°C

January 2000 1/6

THERMAL DATA

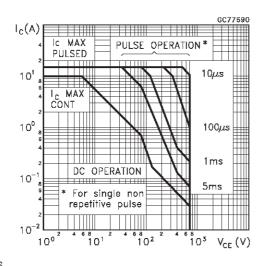
R _{thj-case} Thermal Resistance Junction-case	Max	2.5	°C/W
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25$ $^{\circ}C$ unless otherwise specified)

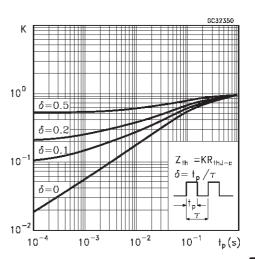
Symbol	Parameter	Test Conditions		Min.	Тур.	Max.	Unit
I _{CES}	Collector Cut-off Current (V _{BE} = 0)	V _{CE} = 1500 V V _{CE} = 1500 V	T _j = 125 °C			1 2	mA mA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 4 V		130		400	mA
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 4 A I _C = 4 A	$I_B = 0.8 A$ $I_B = 1.2 A$		3	5 1.5	V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 4 A	I _B = 0.8 A			1.2	V
h _{FE} *	DC Current Gain	I _C = 1 A I _C = 4.5 A	~ —	10 4	15	20 9	
V _F	Diode Forward Voltage	I _F = 5 A			1.5	2	V
BV _{EB0}	Emitter-Breakdown Voltage	I _E = 700 mA		7			V
t _s	INDUCTIVE LOAD Storage Time Fall Time	$I_C = 4 A$ $L_B = 5 \mu H$ f = 16 KHz	$I_{Bon(END)} = 0.8 A$ $V_{BB} = -2.5 V$		5 0.3	6 0.6	μs μs

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

Safe Operating Area

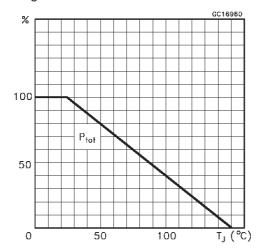


Thermal Impedance

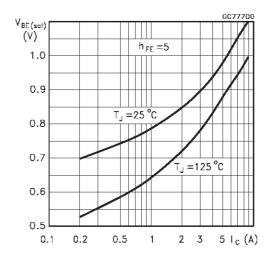


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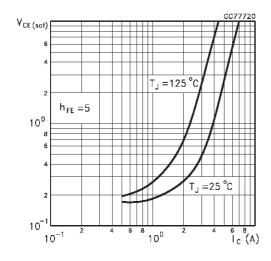
Derating Curve



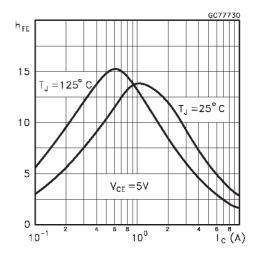
Biase Emitter Saturation Voltage



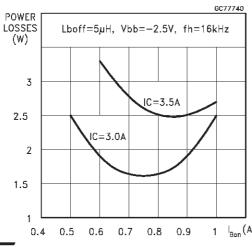
Collector Emitter Saturation Voltage



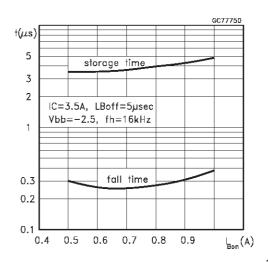
DC Current Gain



Power Losses At 16 KHz

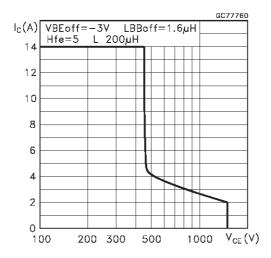


Switching Time Inductive Load

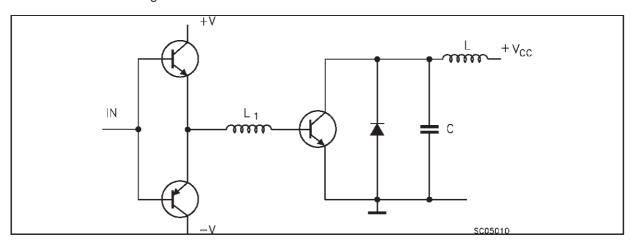


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Reverse Biased SOA



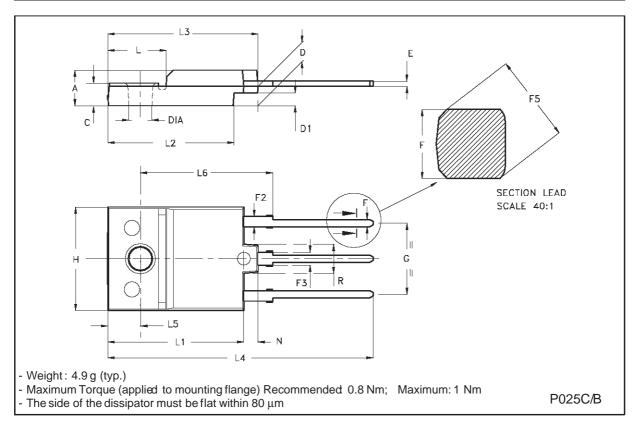
Inductive Load Switching Test Circuits.



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ISOWATT218 NARROW LEADS MECHANICAL DATA

DIM.	mm			inch			
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
Α	5.35		5.65	0.211		0.222	
С	3.30		3.80	0.130		0.150	
D	2.90		3.10	0.114		0.122	
D1	1.88		2.08	0.074		0.082	
Е	0.75		0.95	0.030		0.037	
F	0.75		0.95	0.030		0.037	
F2	1.50		1.70	0.059		0.067	
F3	1.90		2.10	0.075		0.083	
F5			1.10			0.043	
G	10.80		11.20	0.425		0.441	
Н	15.80		16.20	0.622		0.638	
L		9			0.354		
L1	20.80		21.20	0.819		0.835	
L2	19.10		19.90	0.752		0.783	
L3	22.80		23.60	0.898		0.929	
L4	40.50		42.50	1.594		1.673	
L5	4.85		5.25	0.191		0.207	
L6	20.25		20.75	0.797		0.817	
N	2.1		2.3	0.083		0.091	
R		4.6			0.181		
DIA	3.5		3.7	0.138		0.146	





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