



THD277HI

HIGH VOLTAGE FAST-SWITCHING NPN POWER TRANSISTOR

- STMicroelectronics PREFERRED SALESTYPE
- HIGH VOLTAGE CAPABILITY
- U.L. RECOGNISED ISOWATT218 PACKAGE (U.L. FILE # E81734 (N)).

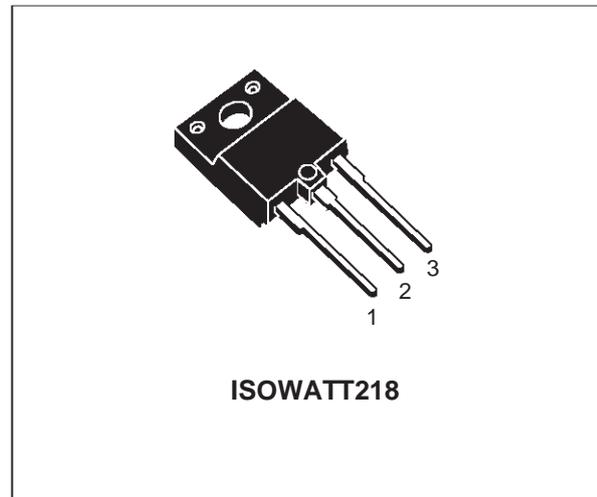
APPLICATIONS

- HORIZONTAL DEFLECTION FOR COLOUR TV AND MONITORS
- SWITCH MODE POWER SUPPLIES

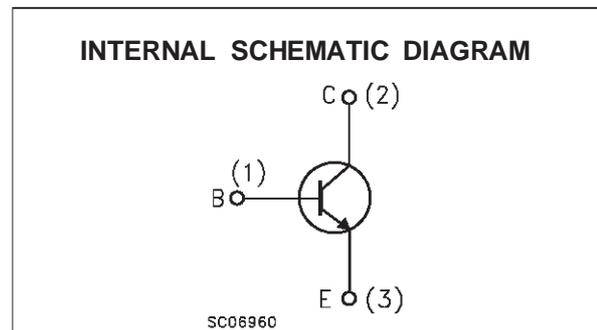
DESCRIPTION

This device is manufactured using Multi-epitaxial Mesa technology for cost-effective high performance and uses a Hollow Emitter structure to enhance switching speeds.

The THD series are designed for use in horizontal deflection circuits in televisions and monitors.



ISOWATT218



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	1500	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	700	V
V_{EBO}	Emitter-Base Voltage ($I_C = 0$)	10	V
I_C	Collector Current	8	A
I_{CM}	Collector Peak Current ($t_p < 5$ ms)	15	A
I_B	Base Current	5	A
I_{BM}	Base Peak Current ($t_p < 5$ ms)	8	A
P_{tot}	Total Dissipation at $T_c = 25$ °C	50	W
T_{stg}	Storage Temperature	-65 to 150	°C
T_j	Max. Operating Junction Temperature	150	°C

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THERMAL DATA

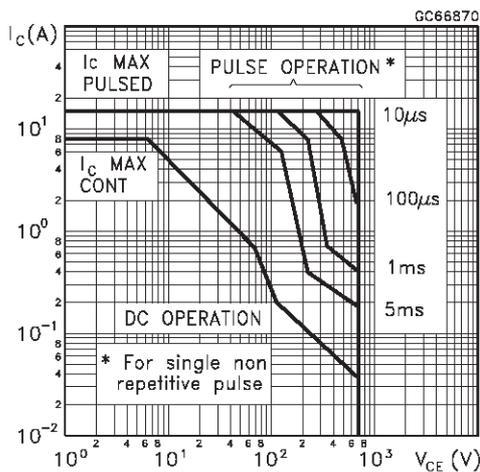
R _{thj-case}	Thermal Resistance Junction-case	Max	2.5	°C/W
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ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

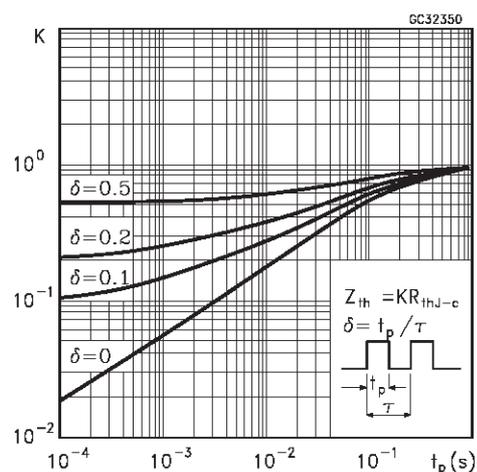
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I _{CES}	Collector Cut-off Current (V _{BE} = 0)	V _{CE} = 1500 V			200	μA
I _{EBO}	Emitter Cut-off Current (I _C = 0)	V _{EB} = 5 V			50	μA
V _{EBO}	Emitter-Base Voltage	I _E = 10 mA	10			V
V _{CEO(sus)*}	Collector-Emitter Sustaining Voltage (I _B = 0)	I _C = 100 mA	700			V
V _{CE(sat)*}	Collector-Emitter Saturation Voltage	I _C = 4 A I _B = 1 A			0.9	V
V _{BE(sat)*}	Base-Emitter Saturation Voltage	I _C = 4 A I _B = 1 A			1.3	V
h _{FE*}	DC Current Gain	I _C = 4 A V _{CE} = 5 V I _C = 4 A V _{CE} = 5 V T _j = 100 °C	6 4		13	
t _s t _f	RESISTIVE LOAD Storage Time Fall Time	V _{CC} = 400 V I _C = 4 A I _{B1} = 1 A I _{B2} = -2 A		2.1 140	3.2 210	μs ns
t _s t _f	INDUCTIVE LOAD Storage Time Fall Time	I _C = 4 A f = 15625 Hz I _{B1} = 1 A I _{B2} = -2 A V _{ceflyback} = 1050 sin(π/10 10 ⁶) t V		4.3 370		μs ns
t _s t _f	INDUCTIVE LOAD Storage Time Fall Time	I _C = 4 A f = 31250 Hz I _{B1} = 1 A I _{B2} = -2 A V _{ceflyback} = 1050 sin(π/10 10 ⁶) t V		4.3 330		μs ns

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

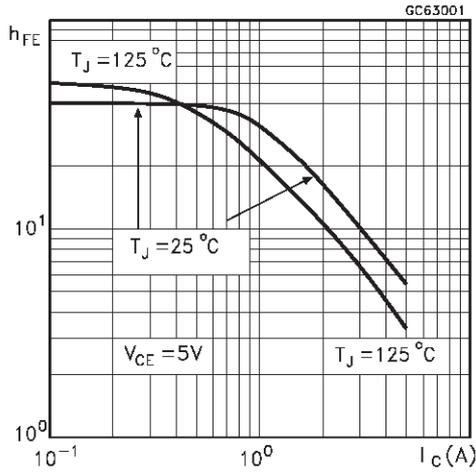
Safe Operating Area



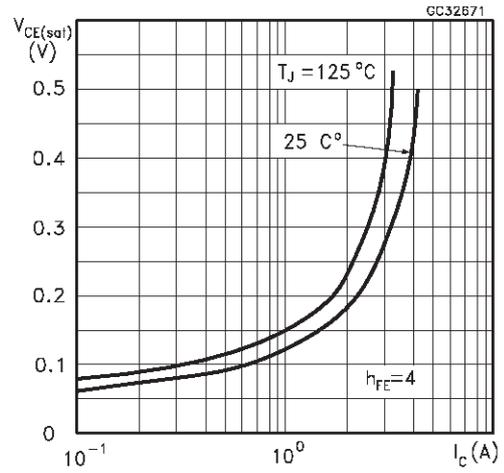
Thermal Impedance



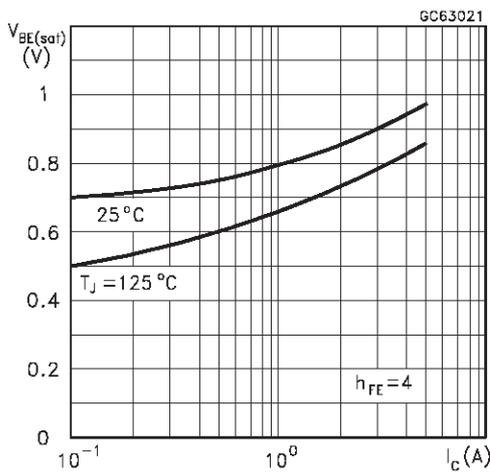
DC Current Gain



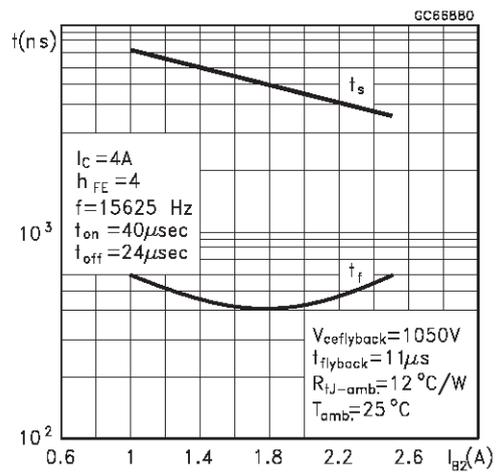
Collector Emitter Saturation Voltage



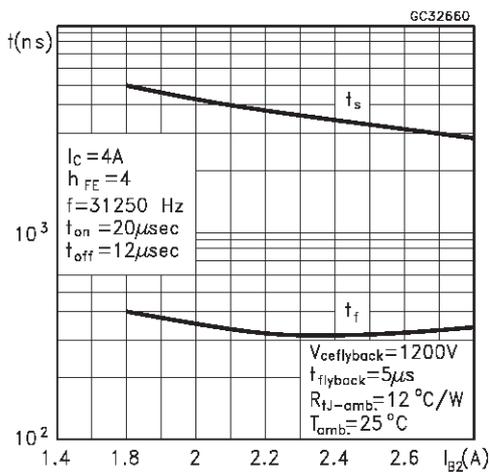
Base Emitter Saturation Voltage



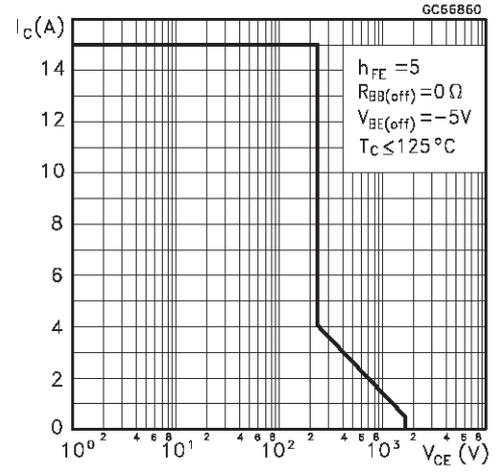
Switching Time Inductive Load



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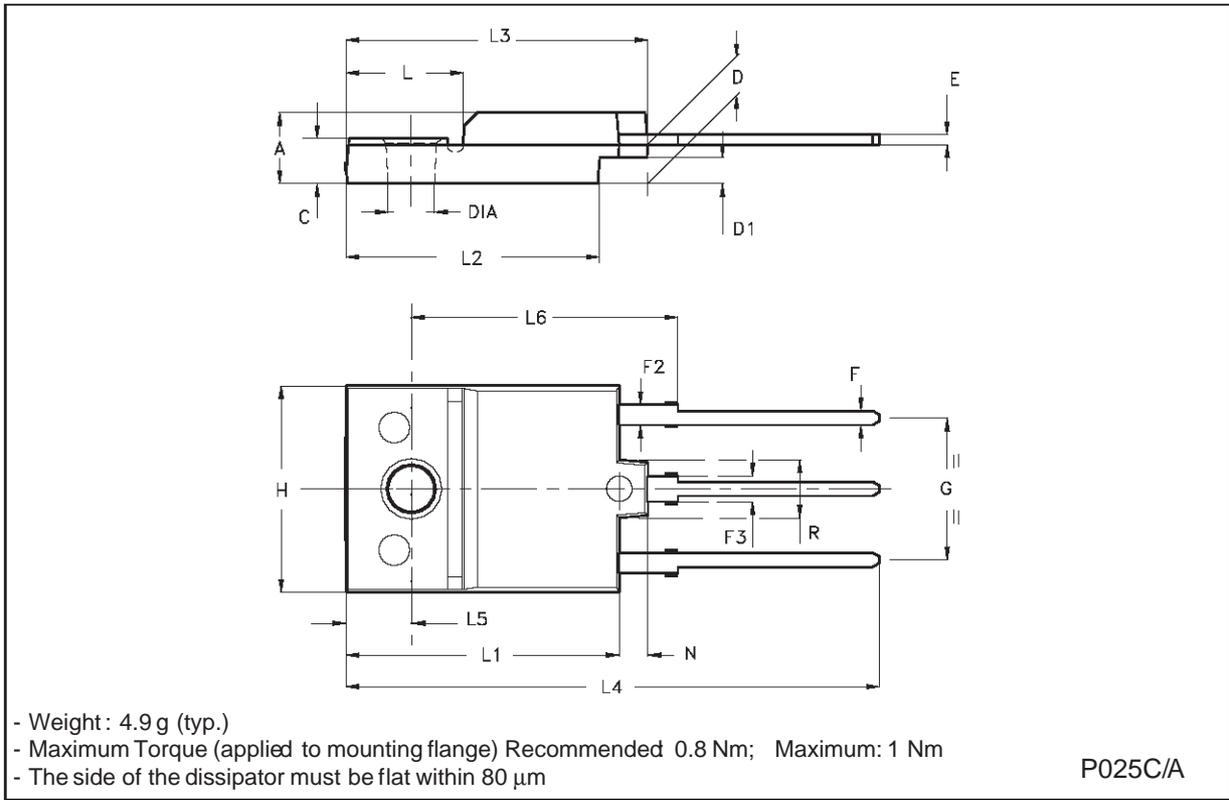


Reverse Biased SOA



ISOWATT218 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	5.35		5.65	0.211		0.222
C	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
E	0.75		0.95	0.030		0.037
F	1.05		1.25	0.041		0.049
F2	1.50		1.70	0.059		0.067
F3	1.90		2.10	0.075		0.083
G	10.80		11.20	0.425		0.441
H	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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