

SGF10N150HD

N-CHANNEL IGBT

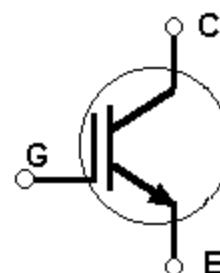
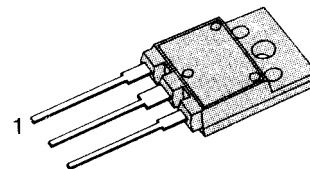
FEATURES

- * High Speed Switching
- * Low Saturation Voltage
: $V_{CE(sat)} = 3.5 \text{ V @ } I_C = 10\text{A}$
- * High Input Impedance

APPLICATIONS

- * Horizontal Deflection
- * High Input Voltage Power Supply(over AC440V)
- * Lamp Ballast

TO-3PF



ABSOLUTE MAXIMUM RATINGS

Symbol	Characteristics	Rating	Units
V_{CES}	Collector-Emitter Voltage	1500	V
V_{GES}	Gate-Emitter Voltage	± 25	V
I_C	Collector Current @ $T_c = 25^\circ\text{C}$	16	A
	Collector Current @ $T_c = 100^\circ\text{C}$	10	A
$I_{CM(1)}$	Pulsed Collector Current	30	A
P_C	Maximum Power Dissipation @ $T_c = 25^\circ\text{C}$	62	W
	Maximum Power Dissipation @ $T_c = 100^\circ\text{C}$	25	W
T_j	Operating Junction Temperature	-55 ~ 150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55 ~ 150	$^\circ\text{C}$
T_L	Maximum Lead Temp. For Soldering Purposes, 1/8" from case for 5 seconds	300	$^\circ\text{C}$

Notes: (1) Repetitive rating : Pulse width limited by max. junction temperature

ELECTRICAL CHARACTERISTICS

(T_c=25°C, Unless Otherwise Specified)

Symbol	Characteristics	Test Conditions	Min	Typ	Max	Units
BV _{CES}	C - E Breakdown Voltage	V _{GE} = 0V , I _C = 1mA	1500	-	-	V
V _{GE(th)}	G - E threshold voltage	I _C = 10mA , V _{CE} = V _{GE}	3.0	-	7.0	V
I _{CES}	Collector cutoff Current	V _{CE} = V _{CES} , V _{GE} = 0V	-	-	1	mA
I _{GES}	G - E leakage Current	V _{GE} = V _{GES} , V _{CE} = 0V	-	-	500	nA
V _{CE(sat)}	Collector to Emitter saturation voltage	I _C = 10A, V _{GE} = 15V	-	3.5	-	V
C _{ies}	Input capacitance	V _{GE} = 0V , f = 1MHz V _{CE} = 30V	-	4000	-	pF
C _{oes}	Output capacitance		-	100	-	pF
C _{res}	Reverse transfer capacitance		-	70	-	pF
t _{d(on)}	Turn on delay time	V _{CC} = 600V , I _C = 10A V _{GE} = 15V R _G = 10Ω Resistive Load	-	15	-	nS
t _r	Turn on rise time		-	200	-	nS
t _{d(off)}	Turn off delay time		-	100	220	nS
t _f	Turn off fall time		-	75	100	nS
E _{on}	Turn on Switching Loss		-	0.3	-	mJ
E _{off}	Turn off Switching Loss		-	0.4	-	mJ
E _{ts}	Total Switching Loss		-	0.7	1.4	mJ
Q _g	Total Gate Charge	V _{CC} = 600V V _{GE} = 15V I _C = 30A	-	180	240	nC
Q _{ge}	Gate-Emitter Charge		-	35	45	nC
Q _{gc}	Gate-Collector Charge		-	65	85	nC

THERMAL RESISTANCE

Symbol	Characteristics	Min	Typ	Max	Units
$R_{\theta JC}$	Junction-to-Case	-	-	2.0	°C/W
$R_{\theta JA}$	Junction-to-Ambient	-	-	40	°C/W
$R_{\theta CS}$	Case-to-Sink	-	0.24	-	°C/W

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