

Silicon NPN Power Transistors

2SC5149

DESCRIPTION

- With TO-3P(H)IS package
- High speed
- High voltage
- Low saturation voltage
- Bult-in damper diode

APPLICATIONS

- Horizontal deflection output for high resolution display,colorTV
- High speed switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

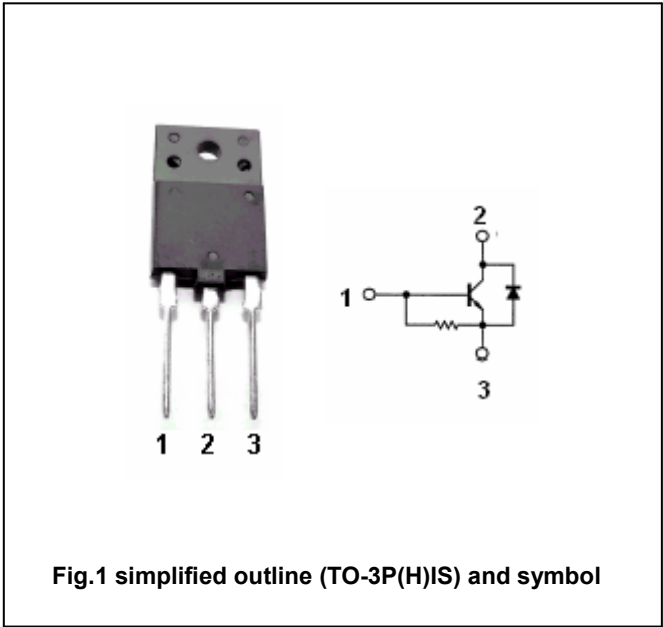


Fig.1 simplified outline (TO-3P(H)IS) and symbol

Absolute maximum ratings(Ta=25℃)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	1500	V
V_{CEO}	Collector-emitter voltage	Open base	600	V
V_{EBO}	Emitter-base voltage	Open collector	5	V
I_C	Collector current		8	A
I_{CM}	Collector current-Peak		16	A
I_B	Base current		4	A
P_T	Total power dissipation	$T_C=25^{\circ}C$	50	W
T_j	Junction temperature		150	℃
T_{stg}	Storage temperature		-55~150	℃

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CHARACTERISTICS

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_C=400mA ; I_B=0$	5			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=5A ; I_B=1.3A$			5	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=5A ; I_B=1.3A$		1	1.3	V
I_{CBO}	Collector cut-off current	$V_{CB}=1500V ; I_E=0$			1	mA
I_{EBO}	Emitter cut-off current	$V_{EB}=5V ; I_C=0$	66		200	mA
h_{FE-1}	DC current gain	$I_C=1A ; V_{CE}=5V$	8		25	
h_{FE-2}	DC current gain	$I_C=5A ; V_{CE}=5V$	3.8		8	
C_{ob}	Collector output capacitance	$I_E=0 ; V_{CB}=10V, f=1MHz$		110		pF
V_F	Forward voltage(damper diode)	$I_F=5A$		1.35	1.8	V
f_T	Transition frequency	$I_E=0.1A ; V_{CE}=10V$		2		MHz

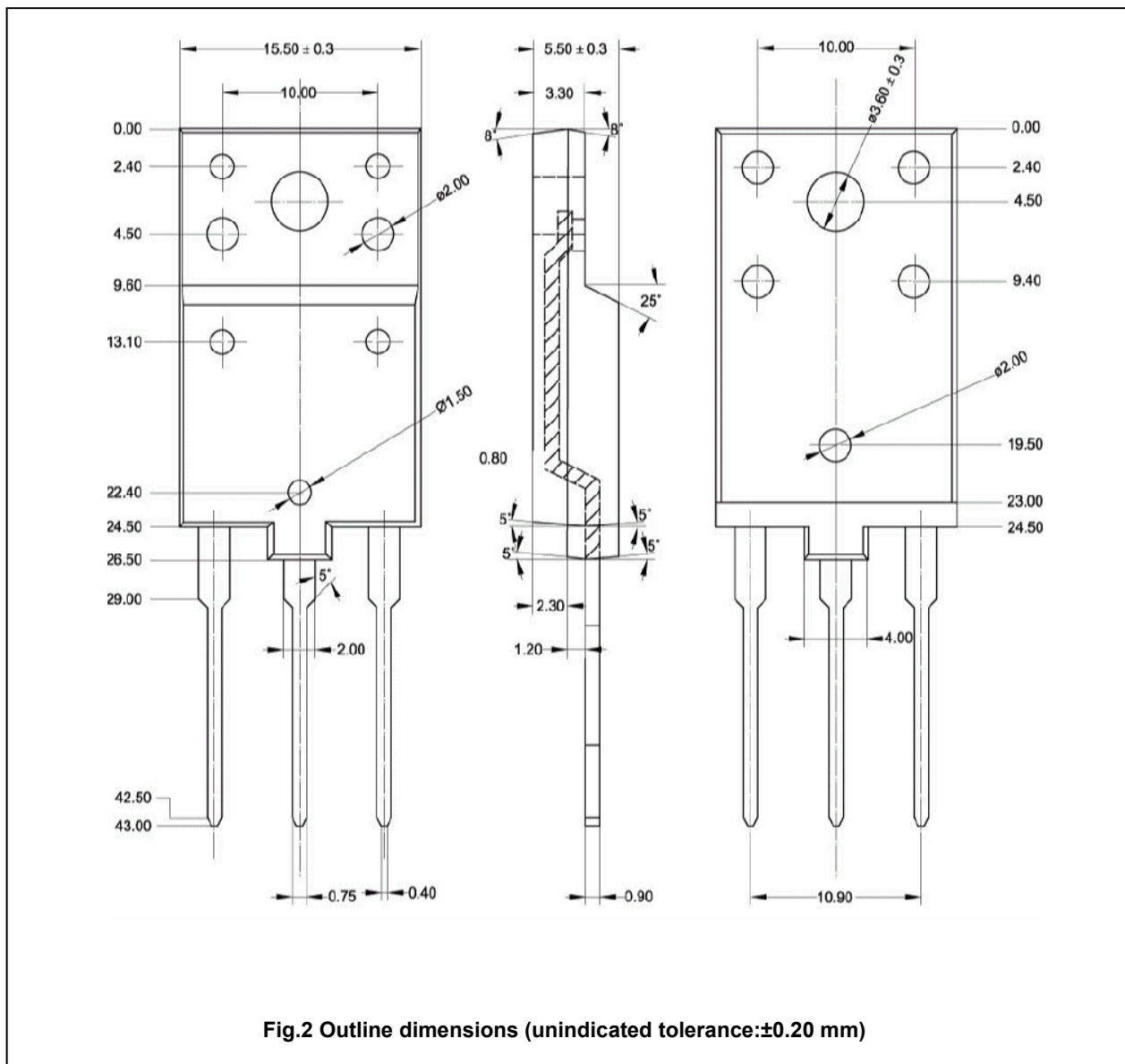
Switching times (inductive load)

t_s	Storage time	$I_{CP}=5A ; I_{B1(end)} = 1.1A$ $f_H=31.5kHz$		4	6	μs
t_f	Fall time			0.2	0.5	μs

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PACKAGE OUTLINE



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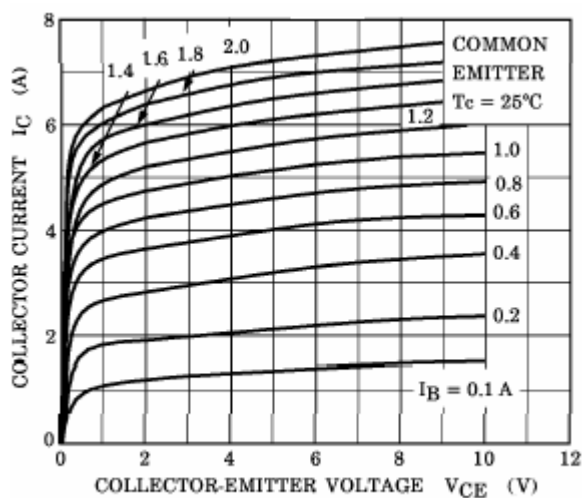


Fig.3 Static Characteristic

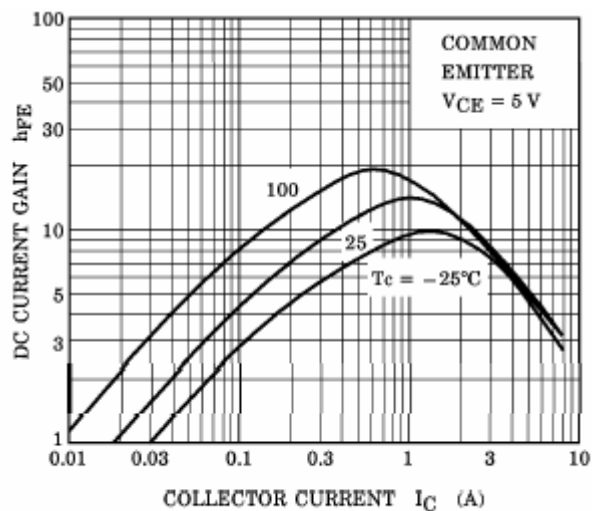


Fig.4 DC current Gain

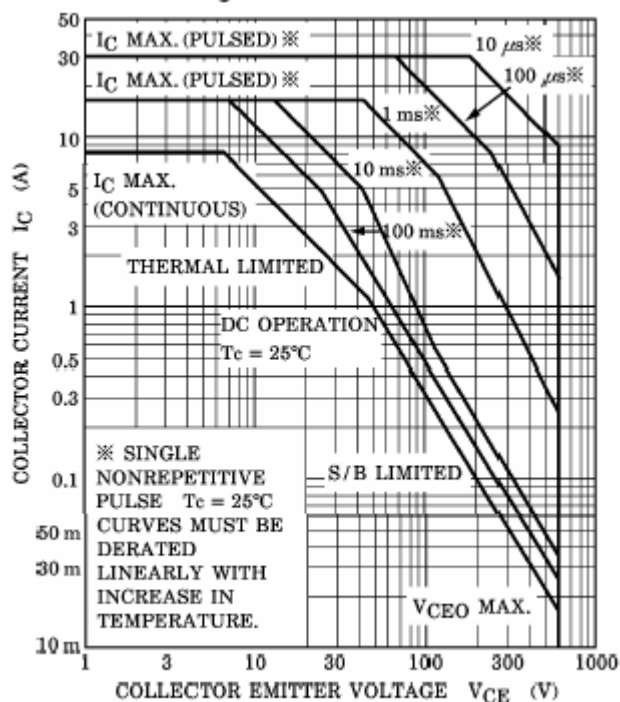


Fig.5 Safe Operating Area