

Silicon NPN Power Transistors

2SD2539

DESCRIPTION

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

APPLICATIONS

- Horizontal deflection output for color TV

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

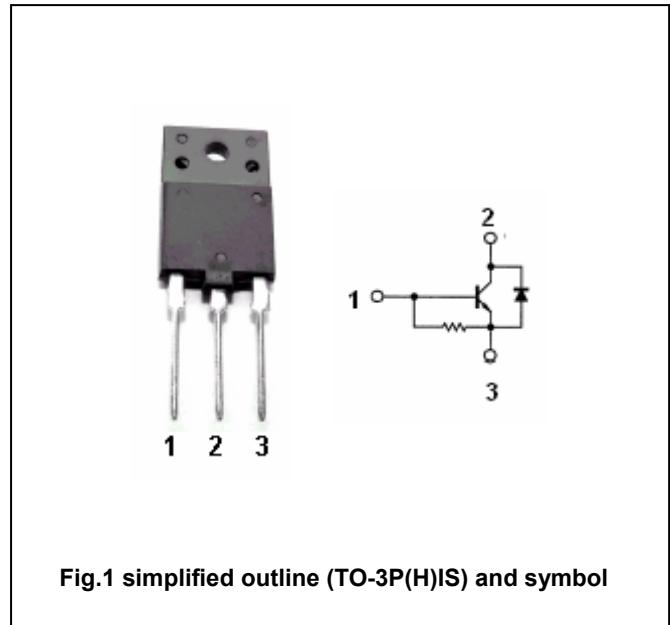


Fig.1 simplified outline (TO-3P(H)IS) and symbol

Absolute maximum ratings($T_a=25^\circ\text{C}$)

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		7	A
I_{CM}	Collector current-peak		14	A
I_B	Base current		3.5	A
P_C	Total power dissipation	$T_C=25^\circ\text{C}$	50	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

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CHARACTERISTICS

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 $T_j=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_C=400\text{mA}; I_B=0$	5			V
V_{CEsat}	Collector-emitter saturation voltage	$I_C=5\text{A}; I_B=1.0\text{A}$			5	V
V_{BEsat}	Base-emitter saturation voltage	$I_C=5\text{A}; I_B=1.0\text{A}$		1.0	1.3	V
I_{CBO}	Collector cut-off current	$V_{CB}=1500\text{V}; I_E=0$			1	mA
I_{EBO}	Emitter cut-off current	$V_{EB}=5\text{V}; I_C=0$	66		200	mA
h_{FE-1}	DC current gain	$I_C=1\text{A}; V_{CE}=5\text{V}$	8		28	
h_{FE-2}	DC current gain	$I_C=5\text{A}; V_{CE}=5\text{V}$	5		9	
V_F	Diode forward voltage	$I_F=5\text{A}$		1.6	2.0	V
C_{ob}	Collector output capacitance	$I_E=0; V_{CB}=10\text{V}, f=1\text{MHz}$		115		pF
f_T	Transition frequency	$I_C=0.1\text{A}; V_{CE}=10\text{V}$		2		MHz

Switching times :

t_s	Storage time	$I_{CP}=5\text{A}; I_{B1}=1.0\text{A}$ $f_H=15.75\text{kHz}$		6	9	μs
t_f	Fall time			0.3	0.6	μs

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PACKAGE OUTLINE

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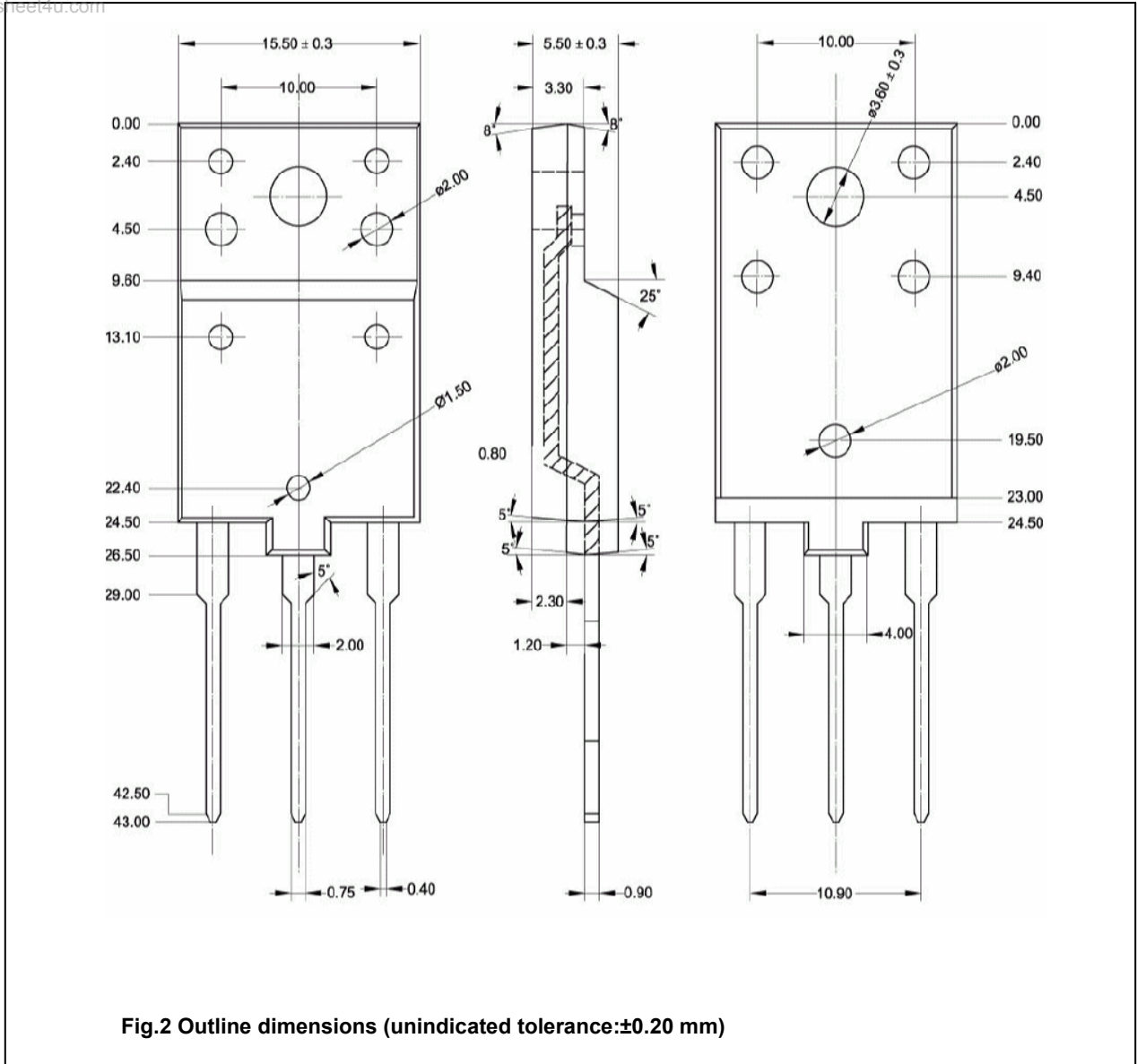


Fig.2 Outline dimensions (unindicated tolerance: ± 0.20 mm)

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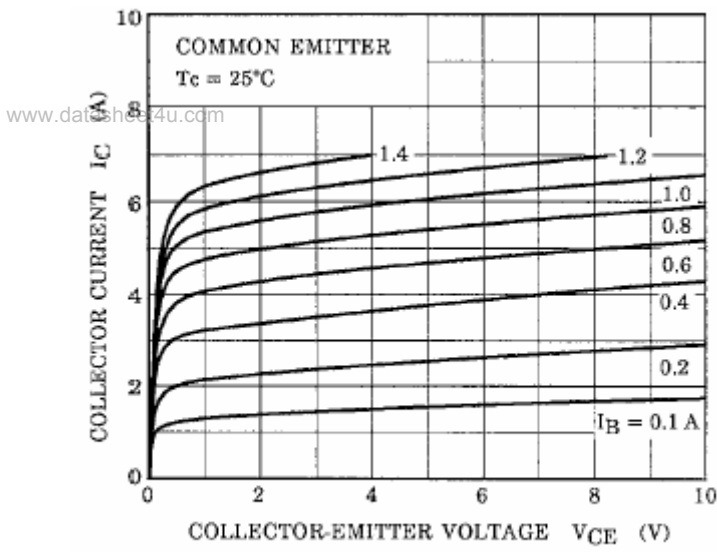


Fig.3 Static Characteristic

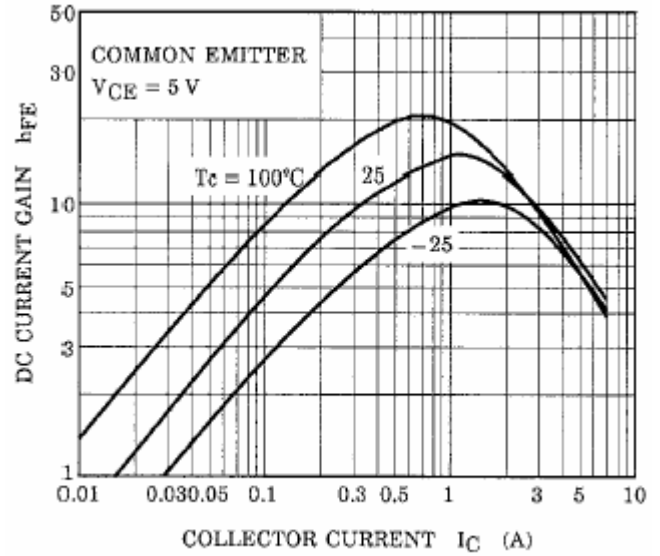


Fig.4 DC current Gain

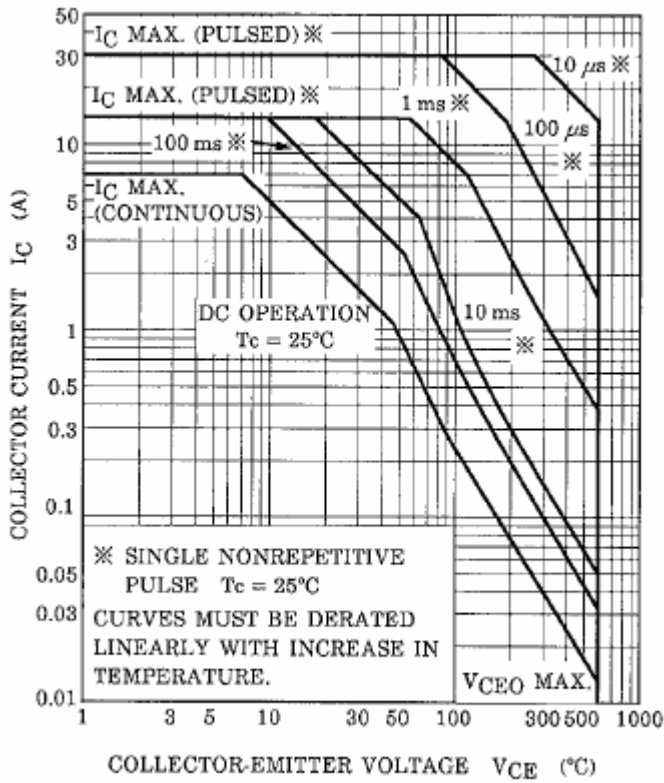


Fig.5 Safe Operating Area