

Silicon NPN Power Transistors

2SC5143

DESCRIPTION

- With TO-3P(H)IS package
- High speed
- High voltage
- Low saturation voltage
- Built-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

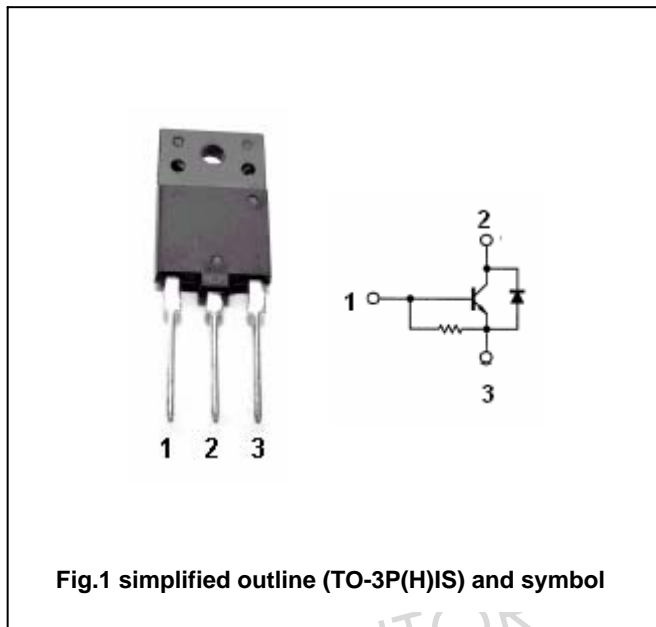


Fig.1 simplified outline (TO-3P(H)IS) and symbol

Absolute maximum ratings(Ta=25)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	1700	V
V_{CEO}	Collector-emitter voltage	Open base	700	V
V_{EBO}	Emitter-base voltage	Open collector	5	V
I_C	Collector current		10	A
I_{CM}	Collector current-Peak		20	A
I_B	Base current		5	A
P_T	Total power dissipation	$T_C=25$	50	W
T_j	Junction temperature		150	
T_{stg}	Storage temperature		-55~150	

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CHARACTERISTICS

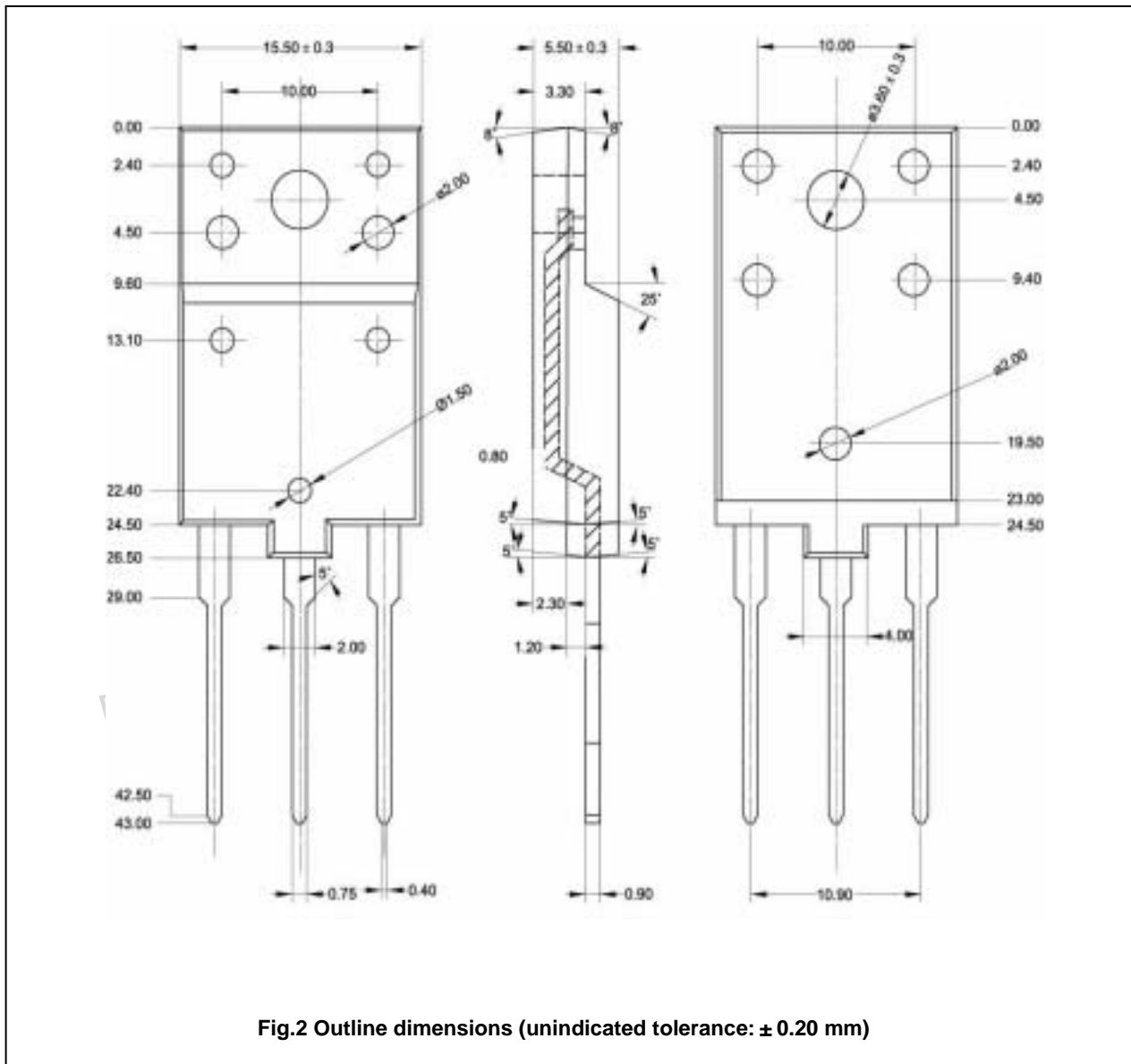
T_j=25 unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =400mA ; I _C =0	5			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =6A ; I _B =1.5A			3.0	V
V _{BEsat}	Base-emitter saturation voltage	I _C =6A ; I _B =1.5A		0.9	1.2	V
I _{CBO}	Collector cut-off current	V _{CB} =1700V ; I _E =0			1	mA
I _{EBO}	Emitter cut-off current	V _{EB} =5V ; I _C =0	83		250	mA
h _{FE-1}	DC current gain	I _C =1A ; V _{CE} =5V	8		25	
h _{FE-2}	DC current gain	I _C =6A ; V _{CE} =5V	4		8.5	
C _{ob}	Collector output capacitance	I _E =0 ; V _{CB} =10V, f=1MHz		185		pF
V _F	Diode forward voltage	I _F =6A			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)} =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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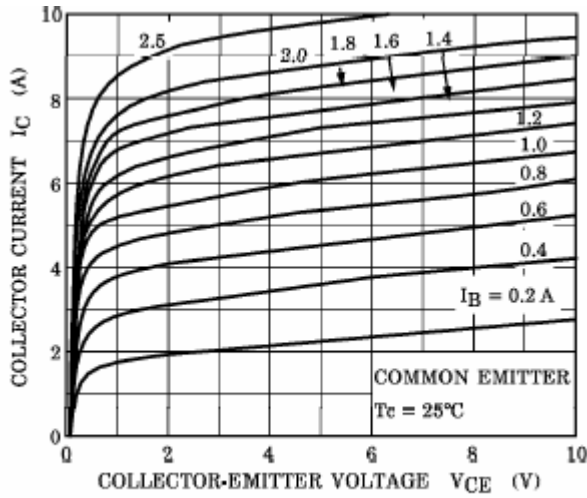


Fig.3 Static Characteristic

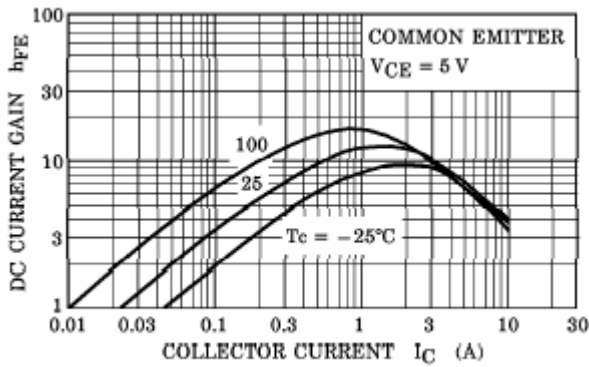


Fig.4 DC current Gain

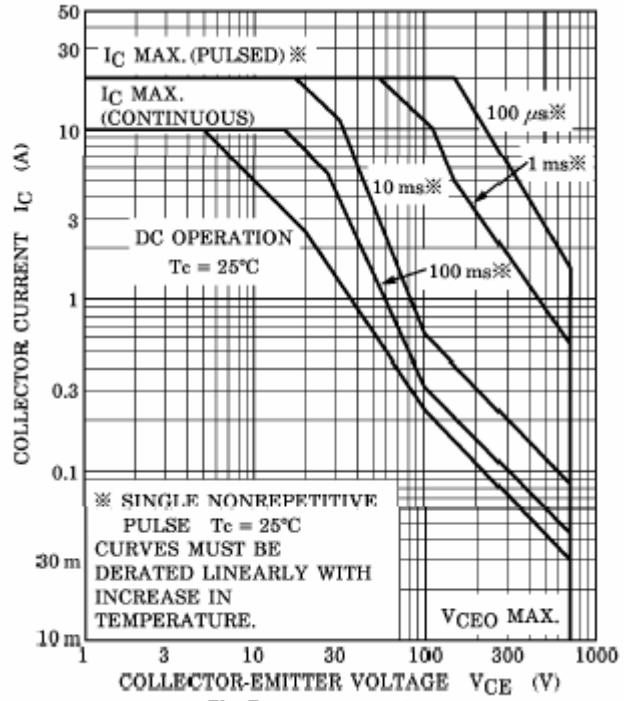


Fig.5 Safe Operating Area

INCHANGE JE