

## Silicon NPN Power Transistors

2SC5143

## DESCRIPTION

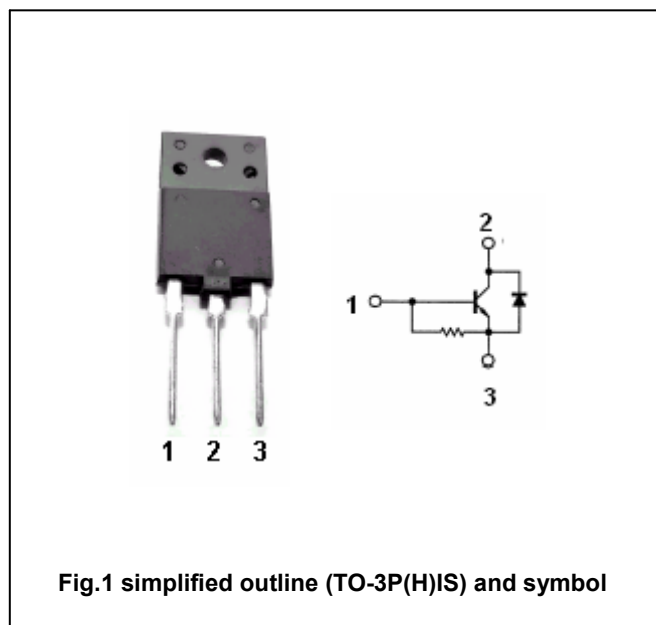
- With TO-3P(H)IS package
- High speed
- High voltage
- Low saturation voltage
- Bult-in damper diode

## APPLICATIONS

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

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

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

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	$T_C=25^\circ\text{C}$	50	W
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-55~150	$^\circ\text{C}$

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## CHARACTERISTICS

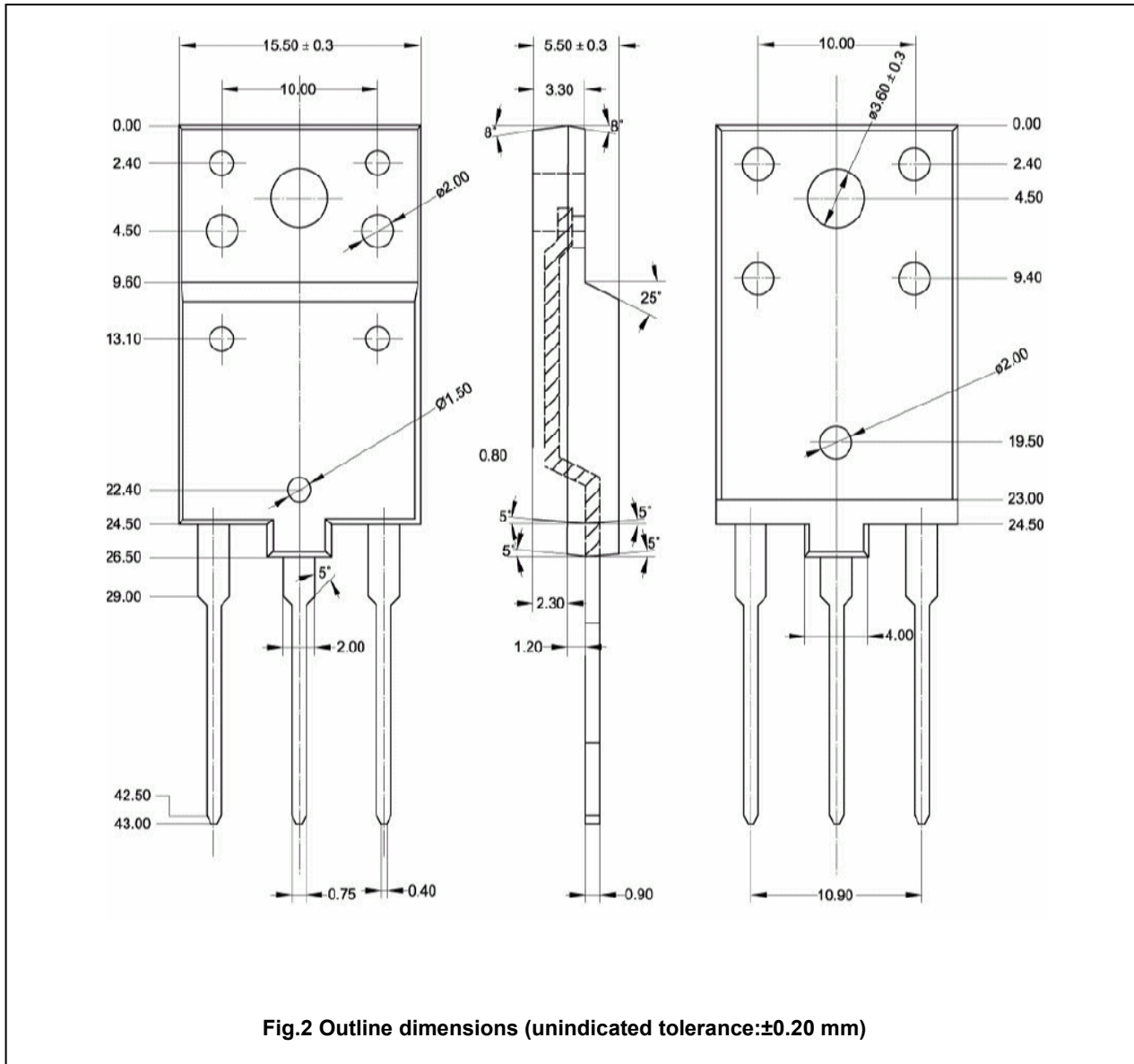
T<sub>j</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)EBO</sub>	Emitter-base breakdown voltage	I <sub>E</sub> =400mA ; I <sub>C</sub> =0	5			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =6A ; I <sub>B</sub> =1.5A			3.0	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =6A ; I <sub>B</sub> =1.5A		0.9	1.2	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =1700V ; I <sub>E</sub> =0			1	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V ; I <sub>C</sub> =0	83		250	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =1A ; V <sub>CE</sub> =5V	8		25	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =6A ; V <sub>CE</sub> =5V	4		8.5	
C <sub>ob</sub>	Collector output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V, f=1MHz		185		pF
V <sub>F</sub>	Diode forward voltage	I <sub>F</sub> =6A			1.8	V
f <sub>T</sub>	Transition frequency	I <sub>E</sub> =0.1A ; V <sub>CE</sub> =10V		2		MHz
Switching times (inductive load)						
t <sub>s</sub>	Storage time	I <sub>CP</sub> =5A ; I <sub>B1(end)</sub> =1A f <sub>H</sub> =31.5kHz		4	6	μs
t <sub>f</sub>	Fall time			0.2	0.5	μs

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PACKAGE OUTLINE



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