

## Silicon NPN Power Transistors

2SC4542

## DESCRIPTION

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

## APPLICATIONS

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

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

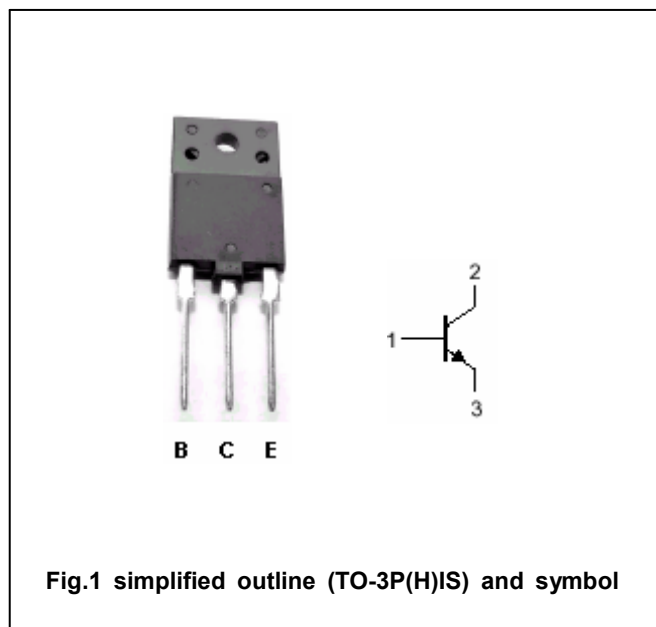


Fig.1 simplified outline (TO-3P(H)IS) and symbol

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		10	A
$I_{CM}$	Collector current-Peak		20	A
$I_B$	Base current		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

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =5mA ; I <sub>B</sub> =0	600			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =7A; I <sub>B</sub> =1.7A			5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =7A; I <sub>B</sub> =1.7A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =1500V; I <sub>E</sub> =0			1.0	mA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =5V; I <sub>C</sub> =0			10	μA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =1A ; V <sub>CE</sub> =5V	8	15		
C <sub>ob</sub>	Collector output capacitance	I <sub>E</sub> =0 ; V <sub>CB</sub> =10V, f=1MHz		210		pF
f <sub>T</sub>	Transition frequency	I <sub>E</sub> =0.1A ; V <sub>CE</sub> =10V	1	3		MHz

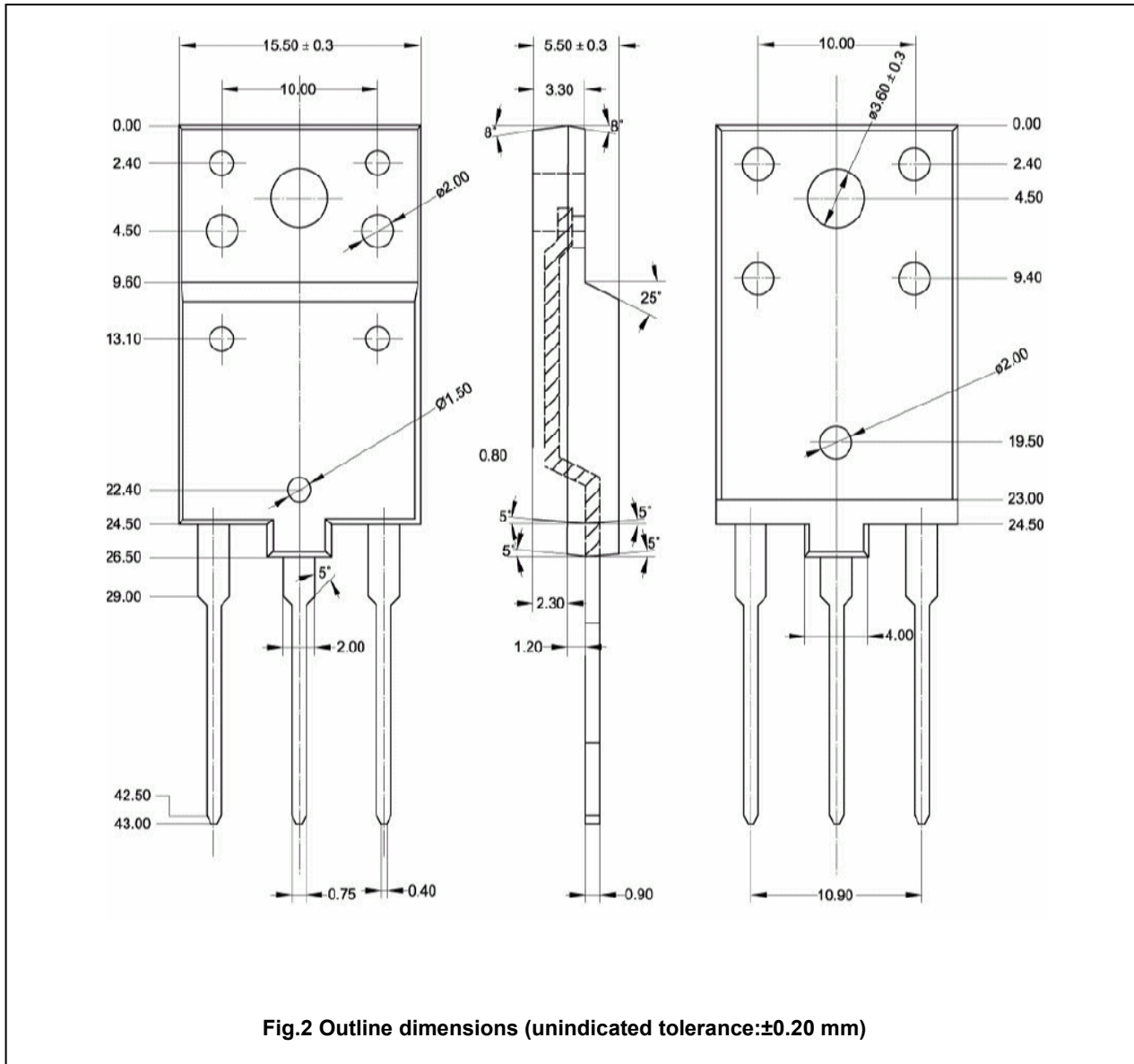
Switching times resistive load

t <sub>s</sub>	Storage time	I <sub>CP</sub> =7A; I <sub>B1</sub> =1.4A I <sub>B2</sub> =-2.8A; R <sub>L</sub> =28.5Ω		1.8	2.5	μs
t <sub>f</sub>	Fall time			0.1	0.2	μs

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PACKAGE OUTLINE



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