

## Silicon NPN Power Transistors

2SC4941

## DESCRIPTION

- With TO-3PML package
- Switching power transistor
- High breakdown voltage

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

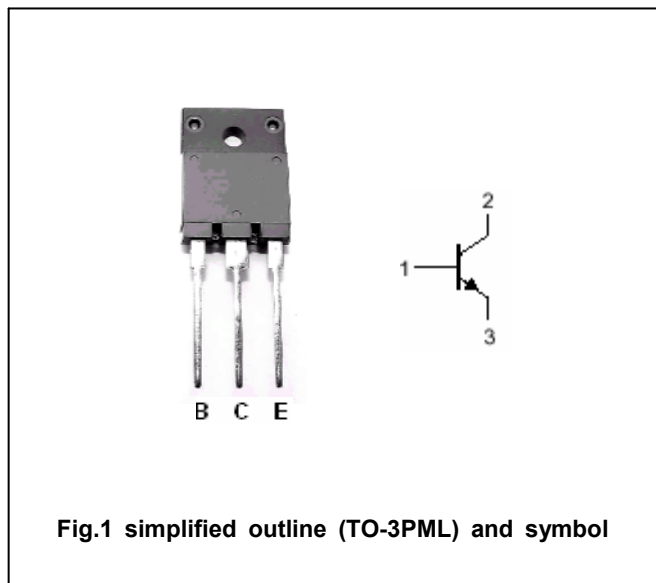


Fig.1 simplified outline (TO-3PML) and symbol

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	800	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current		6	A
$I_{CM}$	Collector current-Peak		12	A
$I_B$	Base current		3	A
$I_B$	Base current-Peak		6	A
$P_T$	Total power dissipation	$T_C=25^\circ\text{C}$	65	W
$T_j$	Junction temperature		150	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-55~150	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	VALUE	UNIT
$R_{th\ j-c}$	Thermal resistance from junction to case	1.92	$^\circ\text{C}/\text{W}$

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =0.2A ; I <sub>B</sub> =0	800			V
V <sub>CBO</sub>	Collector-base voltage	I <sub>C</sub> =1mA ; I <sub>E</sub> =0	1500			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =3A ; I <sub>B</sub> =0.6A			0.5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =3A ; I <sub>B</sub> =0.6A			1.5	V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =1200V ; I <sub>E</sub> =0			100	μA
I <sub>CEO</sub>	Collector cut-off current	V <sub>CE</sub> =RatedV <sub>CEO</sub> ; I <sub>B</sub> =0			100	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =RatedV <sub>EBO</sub> ; I <sub>C</sub> =0			100	μA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =1A ; V <sub>CE</sub> =5V	15			
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =1mA ; V <sub>CE</sub> =5V	7			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.6A ; V <sub>CE</sub> =10V		8		MHz

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =3A I <sub>B1</sub> =0.6A ; I <sub>B2</sub> =-1.2A V <sub>BB2</sub> =4V R <sub>L</sub> =85Ω			0.5	μs
t <sub>s</sub>	Storage time				3.5	μs
t <sub>f</sub>	Fall time				0.3	μs

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PACKAGE OUTLINE

