

## Silicon NPN Power Transistors

2SC5042

## DESCRIPTION

- With TO-3PML package
- High breakdown voltage, high reliability.
- High speed

## APPLICATIONS

- Ultrahigh-definition CRT display
- Horizontal deflection output applications

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

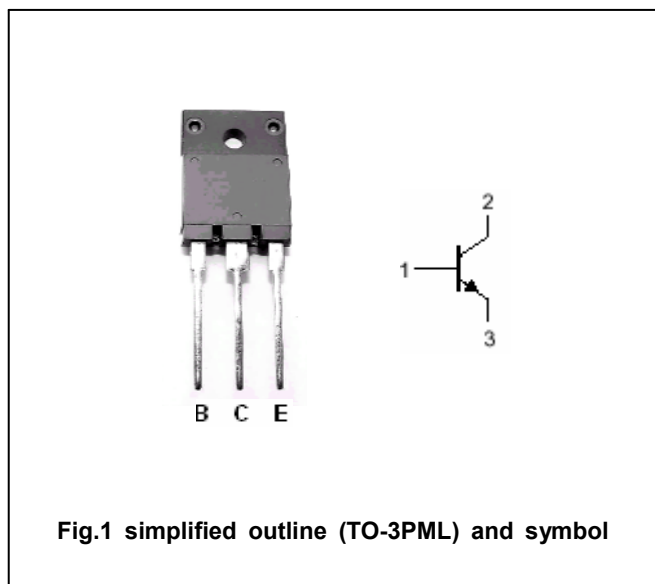


Fig.1 simplified outline (TO-3PML) and symbol

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

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	1600	V
$V_{CEO}$	Collector-emitter voltage	Open base	800	V
$V_{EBO}$	Emitter-base voltage	Open collector	6	V
$I_C$	Collector current		7	A
$I_{CM}$	Collector current-peak		16	A
$P_C$	Collector power dissipation	$T_C=25^\circ\text{C}$	60	W
			3	
$T_j$	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>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =5A; I <sub>B</sub> =1.25 A			5	V
V <sub>BEsat</sub>	Base-emitter saturation voltage	I <sub>C</sub> =5A; I <sub>B</sub> =1.25A			1.5	V
V <sub>CEO(SUS)</sub>	Collector-emitter sustaining voltage	I <sub>C</sub> =100mA; I <sub>B</sub> =0	800			V
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =4V I <sub>C</sub> =0			1	mA
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =800V I <sub>E</sub> =0			10	μA
I <sub>CES</sub>	Collector cut-off current	V <sub>CE</sub> =1600V; R <sub>BE</sub> =0			1	mA
h <sub>FE-1</sub>	DC current gain	I <sub>C</sub> =1 A ; V <sub>CE</sub> =5V	15		25	
h <sub>FE-2</sub>	DC current gain	I <sub>C</sub> =5A ; V <sub>CE</sub> =5V	4		7	

## Switching times

t <sub>stg</sub>	Storage time	I <sub>C</sub> =4A; R <sub>L</sub> =50Ω I <sub>B1</sub> =0.7A; - I <sub>B2</sub> =2A V <sub>CC</sub> =200V			2.0	μs
t <sub>f</sub>	Fall time			0.1	0.2	μs



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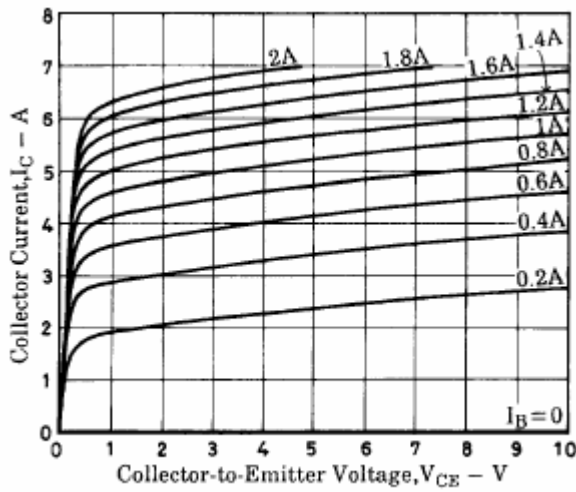


Fig.3 Static Characteristic

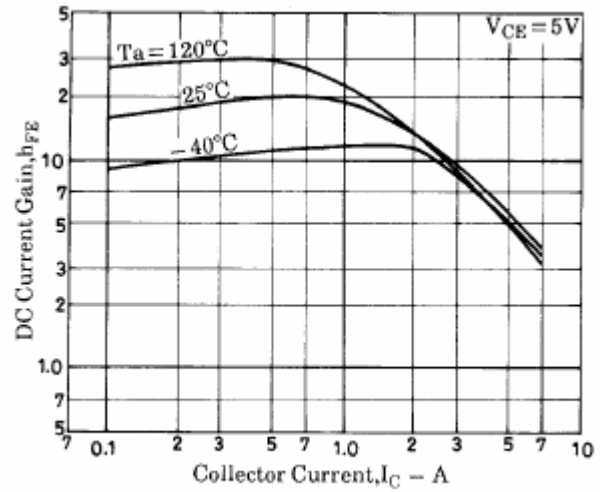


Fig.4 DC current Gain

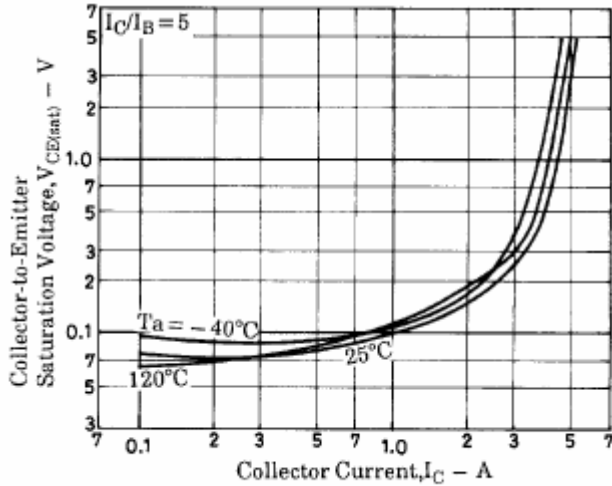


Fig.5 Collector-Emitter Saturation Voltage

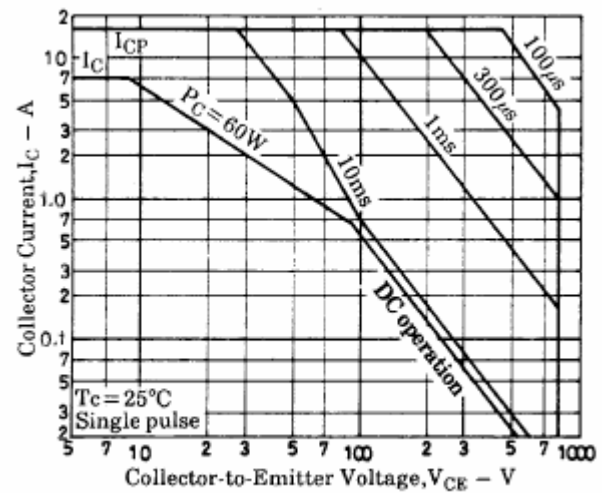


Fig.6 Safe Operating Area