

Silicon NPN Power Transistors

2SC4424

DESCRIPTION

- With TO-3PML package
- High breakdown voltage, high reliability.
- Fast switching speed.
- Wide ASO.

APPLICATIONS

- Switching regulator applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

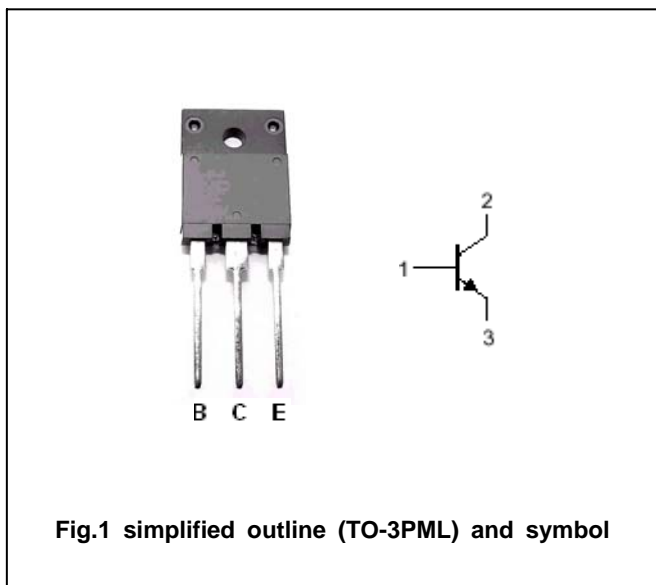


Fig.1 simplified outline (TO-3PML) and symbol

Absolute maximum ratings(Tc=25°C)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	Open emitter	500	V
V_{CEO}	Collector-emitter voltage	Open base	400	V
V_{EBO}	Emitter-base voltage	Open collector	7	V
I_C	Collector current		16	A
I_{CM}	Collector current-peak		32	A
I_B	Base current		6	A
P_C	Collector power dissipation	$T_C=25^\circ C$	60	W
		$T_a=25^\circ C$	3	
T_j	Junction temperature		150	°C
T_{stg}	Storage temperature		-55~150	°C

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CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =1mA; I _E =0	500			V
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =10mA; R _{BE} =∞	400			V
V _{(BR)EBO}	Emitter-base breakdown voltage	I _E =1mA; I _C =0	7			V
V _{CEX(SUS)}	Collector-emitter sustaining voltage	I _C =8A; I _{B1} =0.8A; I _{B2} =-3.2A; L=200 μ H	400			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =10A; I _B =2A			0.8	V
V _{BEsat}	Base-emitter saturation voltage	I _C =10A; I _B =2A			1.5	V
I _{CBO}	Collector cut-off current	V _{CB} =400V; I _E =0			10	μ A
I _{EBO}	Emitter cut-off current	V _{EB} =5V; I _C =0			10	μ A
h _{FE-1}	DC current gain	I _C =2A ; V _{CE} =5V	15		50	
h _{FE-2}	DC current gain	I _C =10A ; V _{CE} =5V	10			
h _{FE-3}	DC current gain	I _C =10mA ; V _{CE} =5V	10			
f _T	Transition frequency	I _C =2A ; V _{CE} =10V		20		MHz
C _{OB}	Output capacitance	V _{CB} =10V; f=1MHz		230		pF

Switching times

t _{on}	Turn-on time	I _C =12A; R _L =16.6 Ω I _{B1} =2.4A; - I _{B2} =4.8A V _{CC} =200V			0.5	μ s
t _{stg}	Storage time				2.5	μ s
t _f	Fall time				0.3	μ s

◆ h_{FE-1} classifications

L	M	N
15-30	20-40	30-50

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PACKAGE OUTLINE

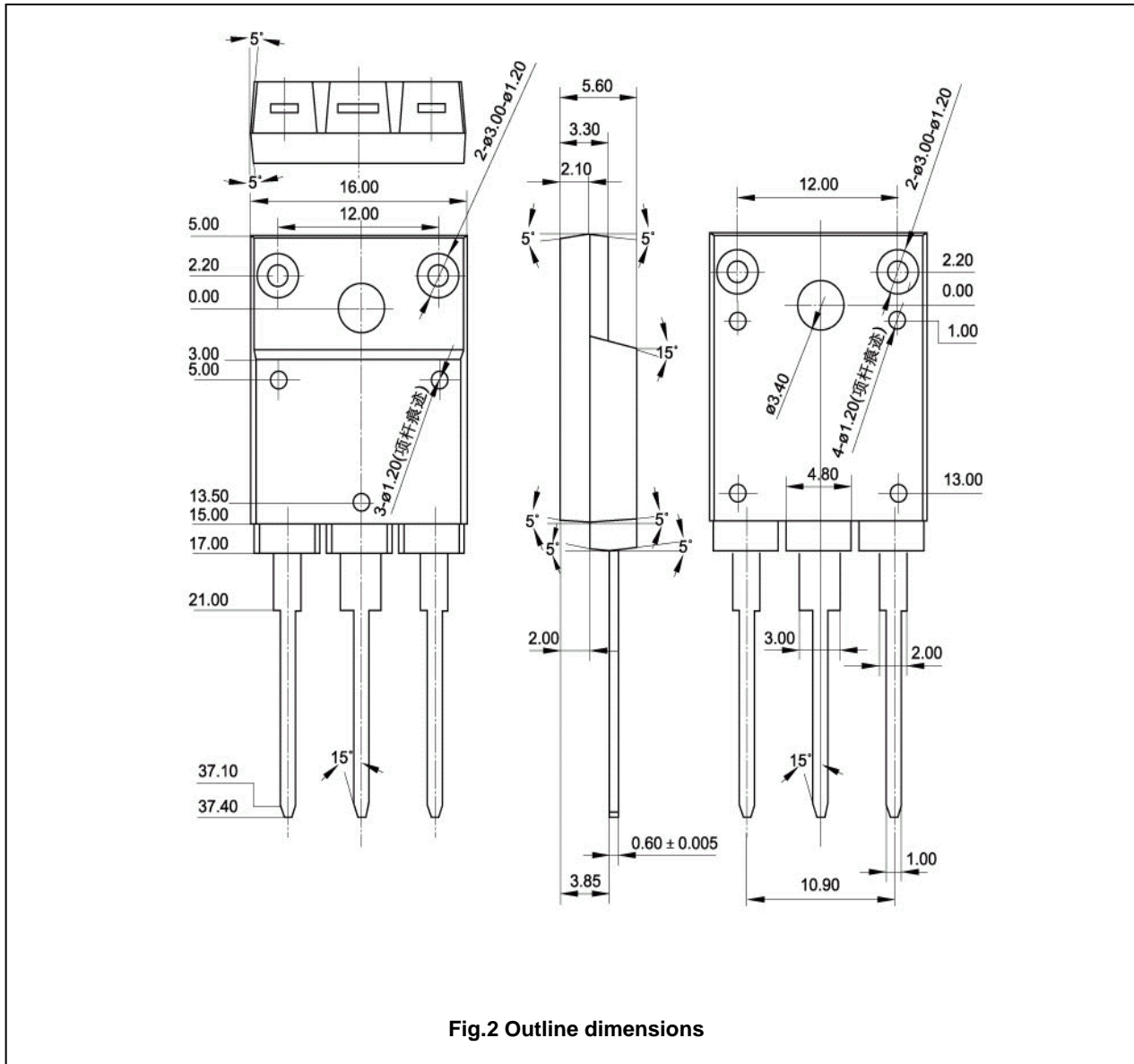


Fig.2 Outline dimensions

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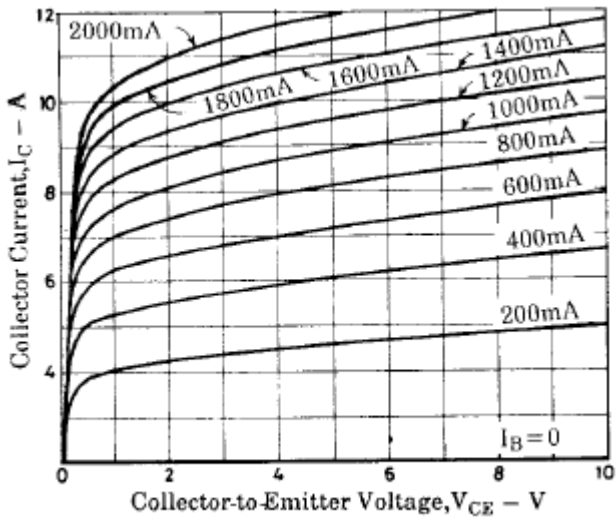


Fig.3 Static Characteristic

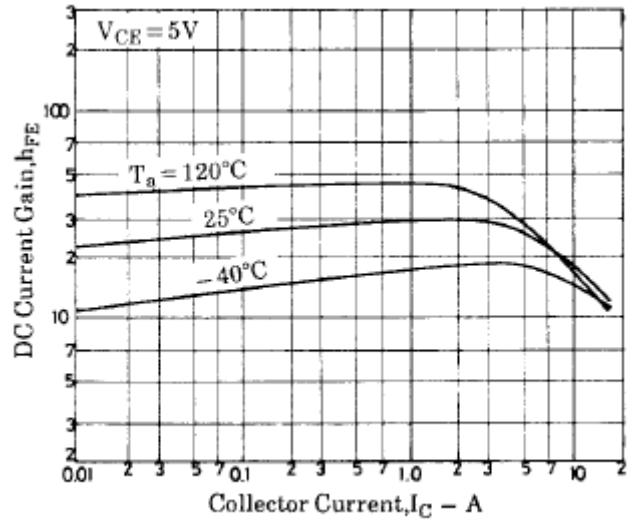


Fig.4 DC current Gain

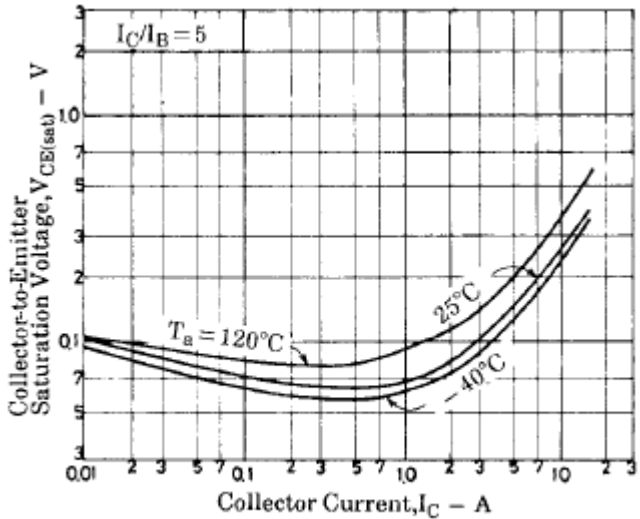


Fig.5 Collector-Emitter Saturation Voltage

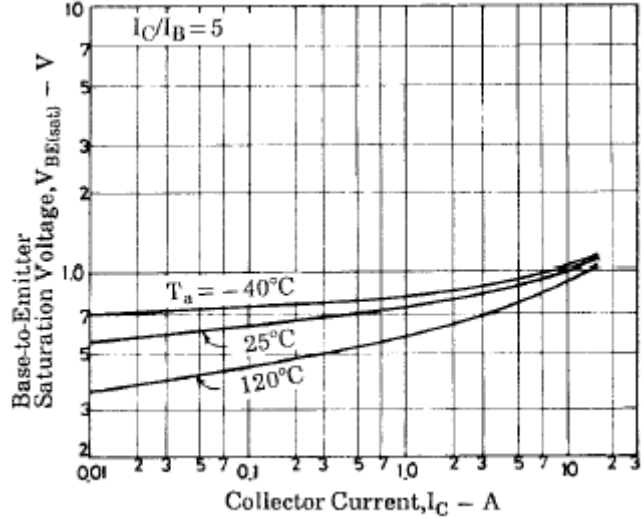


Fig.6 Base-Emitter Saturation Voltage

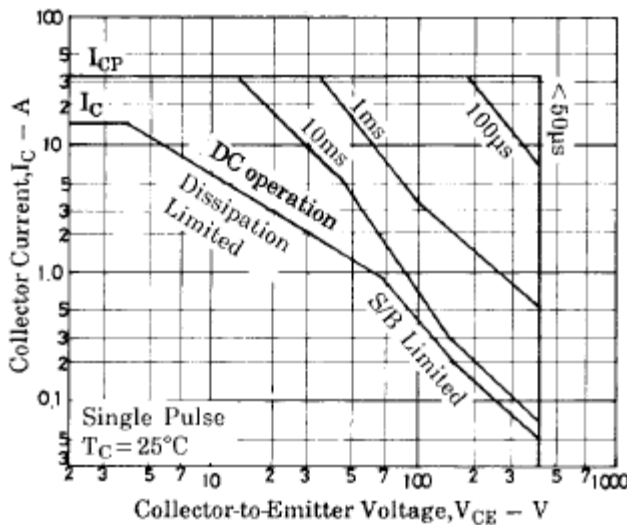


Fig.7 Safe Operating Area