

Silicon NPN Power Transistors

2SD2059

DESCRIPTION

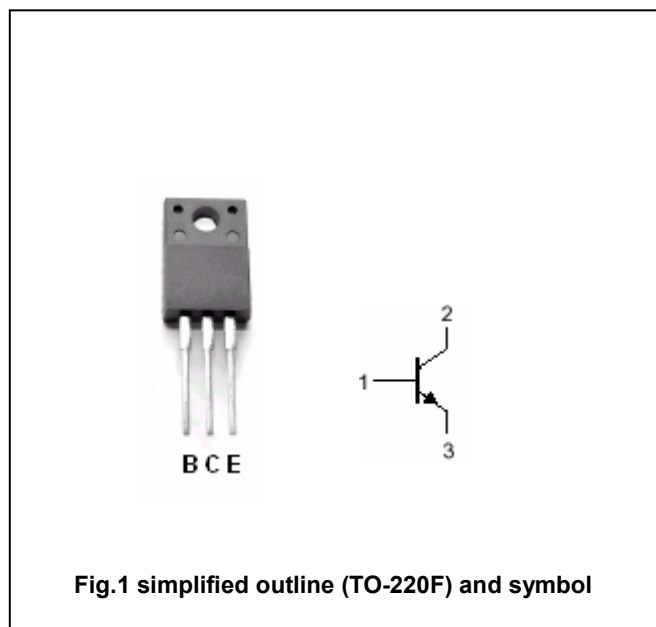
- With TO-220F package
- Complement to type 2SB1367
- Low collector saturation voltage:
 $V_{CE(SAT)}=2.0V(\text{Max})$ at $I_C=4A, I_B=0.4A$
- Collector power dissipation:
 $P_C=30W(T_C=25^\circ\text{C})$

APPLICATIONS

- With general purpose 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	100	V
V_{CEO}	Collector-emitter voltage	Open base	100	V
V_{EBO}	Emitter-base voltage	Open collector	5	V
I_C	Collector current		5	A
I_B	Base current		0.5	A
P_C	Collector dissipation	$T_C=25^\circ\text{C}$	30	W
T_j	Junction temperature		150	$^\circ\text{C}$
T_{stg}	Storage temperature		-55~150	$^\circ\text{C}$

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CHARACTERISTICS

T_j=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
V _{(BR)CEO}	Collector-emitter breakdown voltage	I _C =50mA ; I _B =0	100			V
V _{CEsat}	Collector-emitter saturation voltage	I _C =4A ; I _B =0.4A			2.0	V
V _{BE}	Base-emitter on voltage	I _C =1A ; V _{CE} =5V			1.5	V
I _{CBO}	Collector cut-off current	V _{CB} =100V ; I _E =0			0.1	mA
I _{EBO}	Emitter cut-off current	V _{EB} =5V ; I _C =0			1.0	mA
h _{FE-1}	DC current gain	I _C =1A ; V _{CE} =5V	40		240	
h _{FE-2}	DC current gain	I _C =4A ; V _{CE} =5V	20			
f _T	Transition frequency	I _C =1A ; V _{CE} =5V		12		MHz
C _{OB}	Collector output capacitance	f=1MHz ; V _{CB} =10V		100		pF

◆ h_{FE-1} Classifications

R	O	Y
40-80	70-140	120-240

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PACKAGE OUTLINE

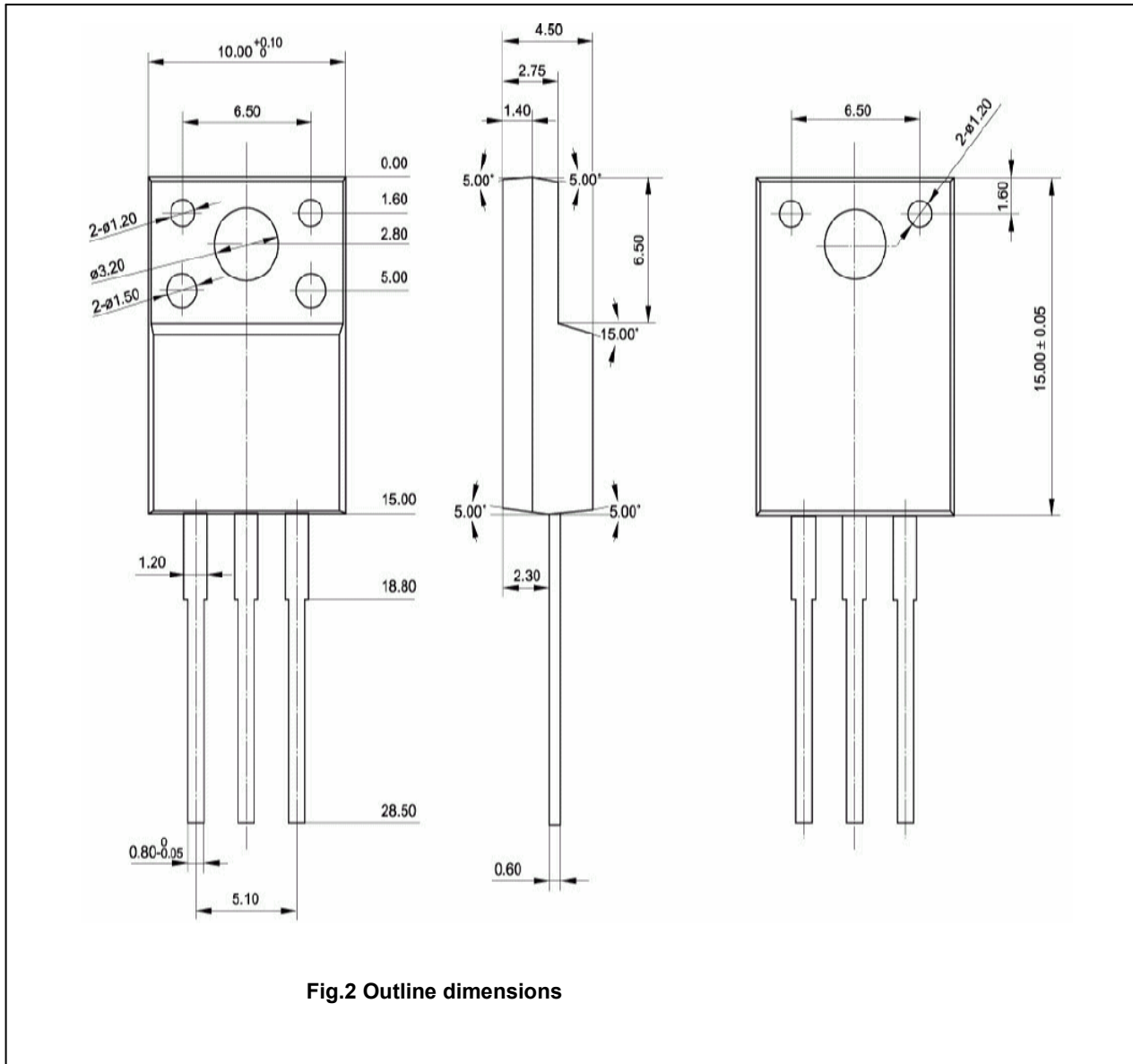


Fig.2 Outline dimensions

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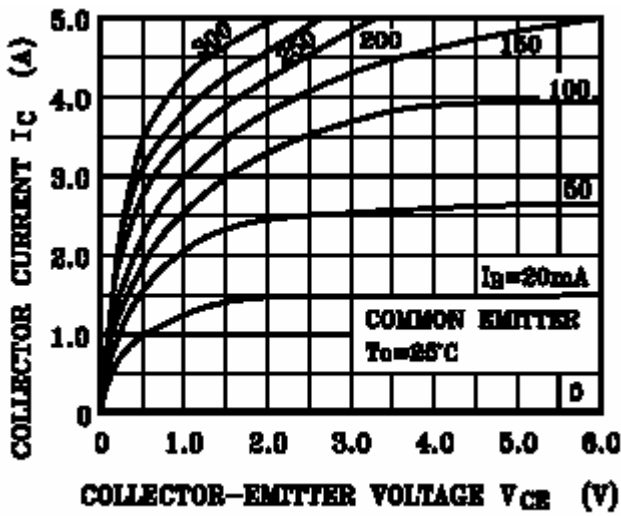


Fig.3 Static Characteristic

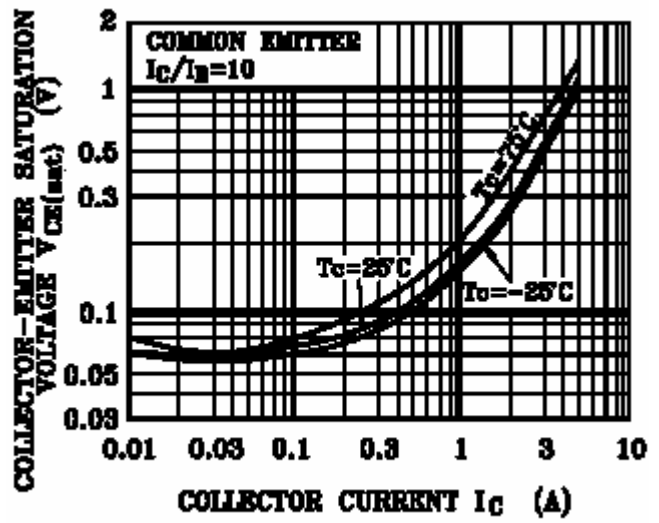


Fig.4 Collector-Emitter Saturation Voltage

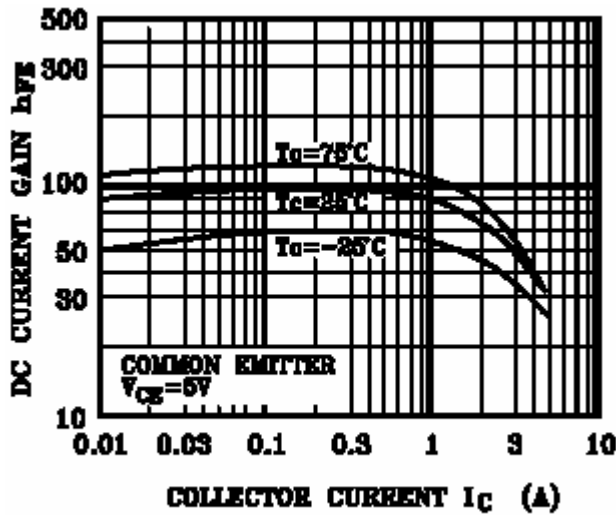


Fig.5 DC current Gain

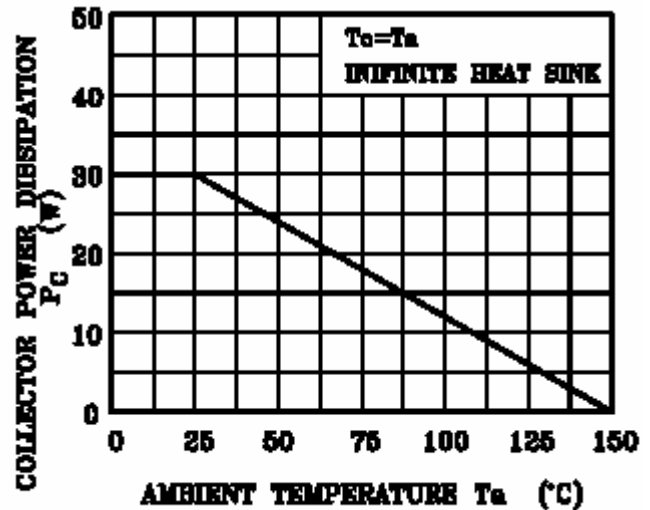


Fig.6 Power Derating

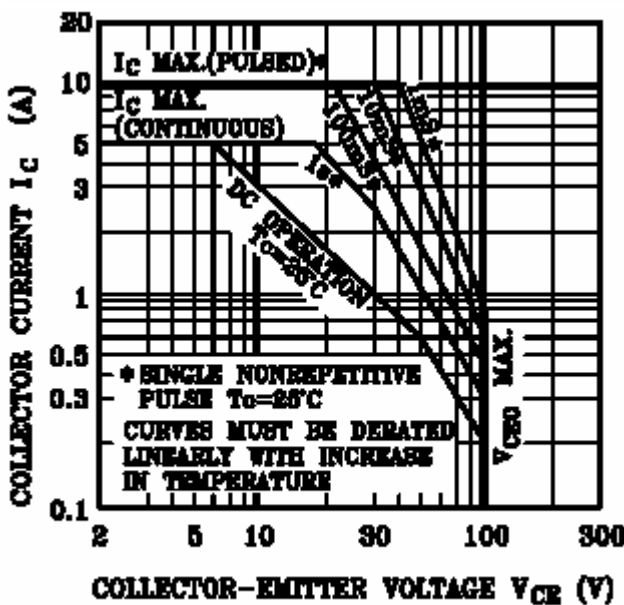


Fig.7 Safe Operating Area