Silicon NPN Power Transistors 2SD2059

DESCRIPTION

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

APPLICATIONS

- With general purpose applications

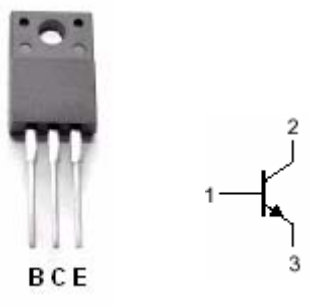

Fig.1 simplified outline (TO-220F) and symbol

PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

Absolute maximum ratings (Ta=25℃)

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℃	30	W
T_j	Junction temperature		150	℃
T_{stg}	Storage temperature		-55~150	℃

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CHARACTERISTICS

Tj=25℃ 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

PACKAGE OUTLINE

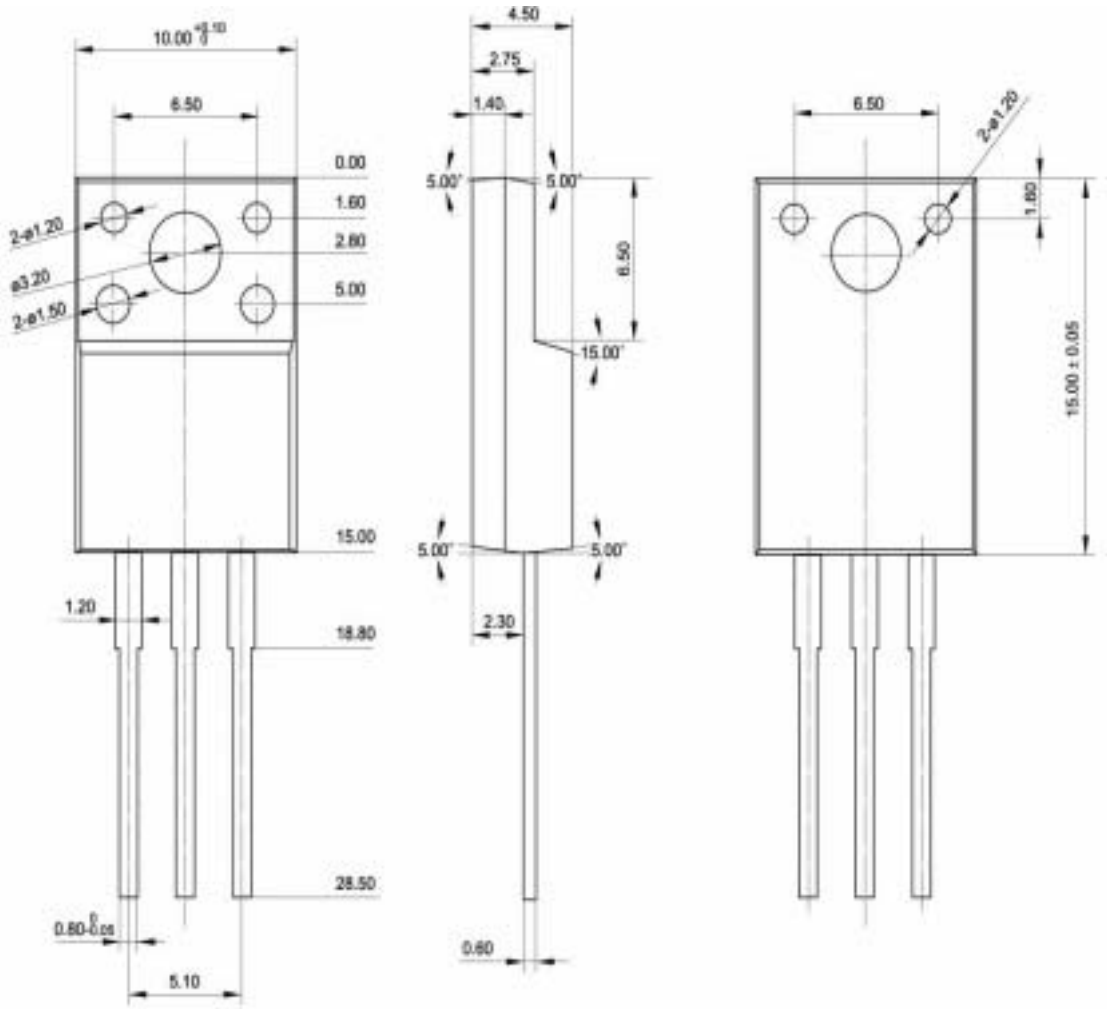

Fig.2 Outline dimensions

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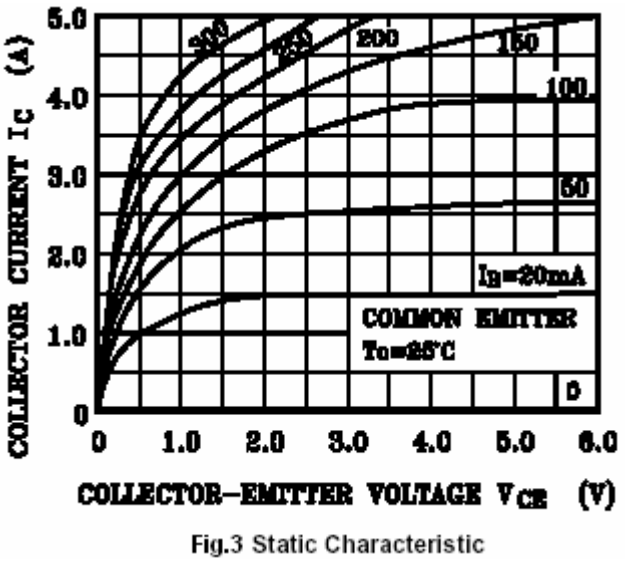

Fig.3 Static Characteristic

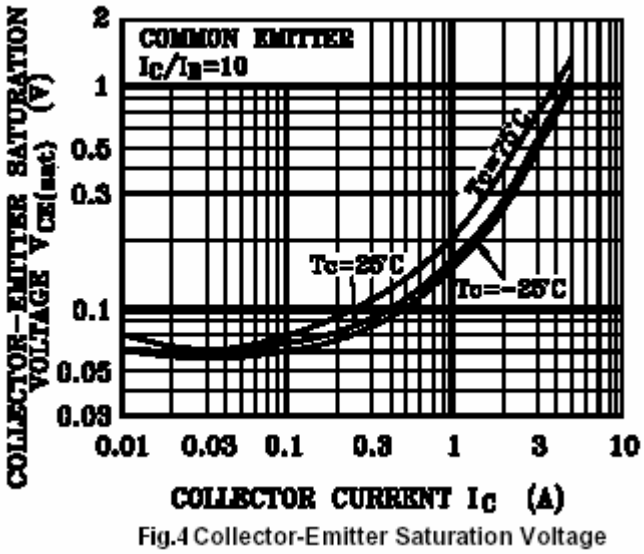

Fig.4 Collector-Emitter Saturation Voltage

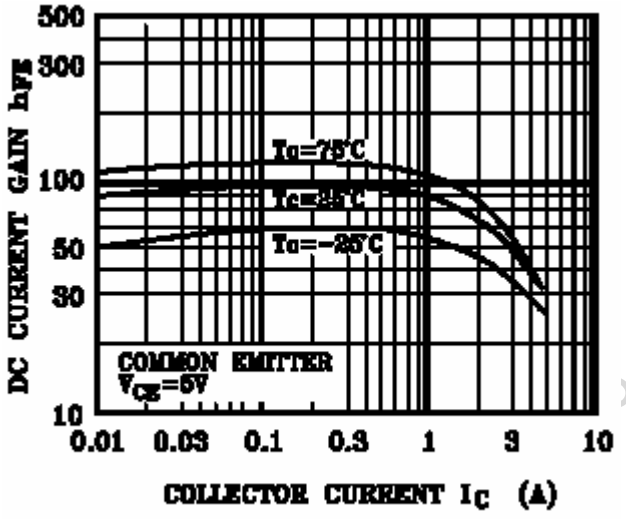

Fig.5 DC current Gain

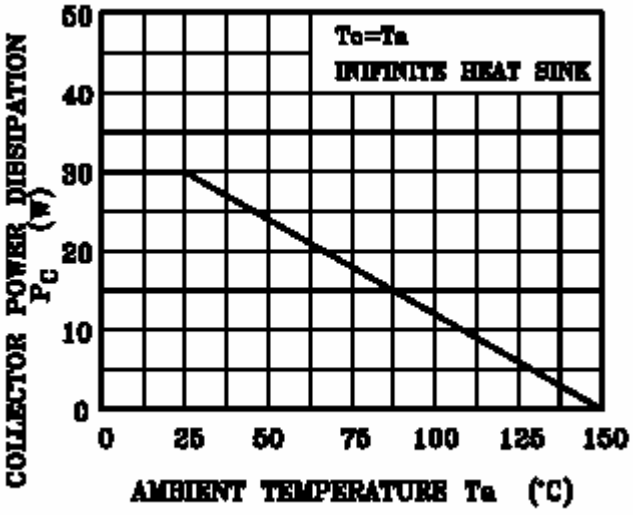

Fig.6 Power Derating

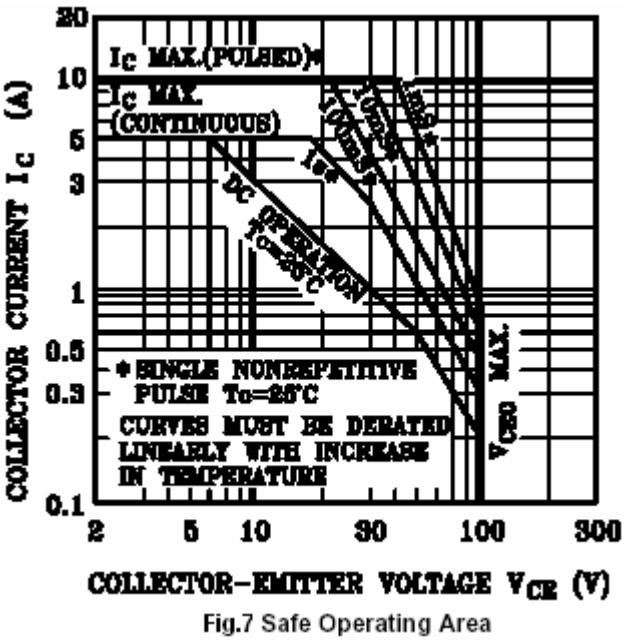

Fig.7 Safe Operating Area