

**Silicon NPN Power Transistors**

**2SD2058**

**DESCRIPTION**

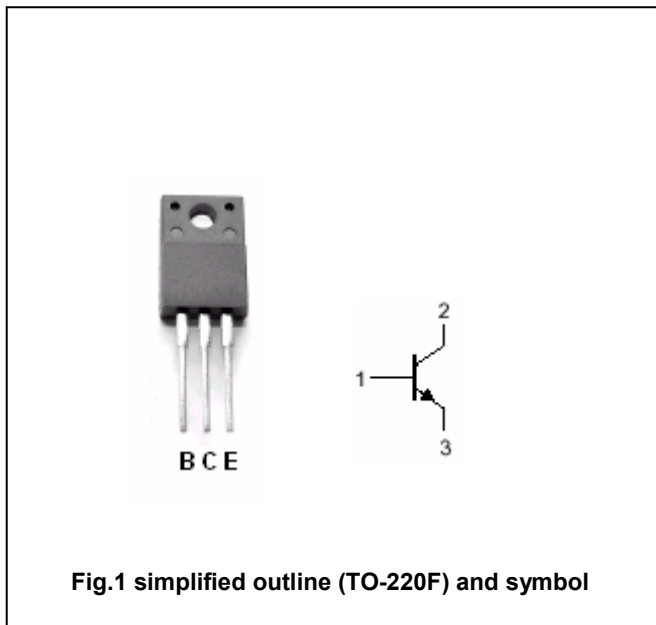
- With TO-220F package
- Complement to type 2SB1366
- Low collector saturation voltage:  
 $V_{CE(SAT)}=1.0V(\text{Max})$  at  $I_C=2A, I_B=0.2A$
- Collector power dissipation:  
 $P_C=25W(T_C=25^\circ\text{C})$

**APPLICATIONS**

- With general purpose applications

**PINNING**

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter



**Absolute maximum ratings (Ta=25°C)**

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$V_{CBO}$	Collector-base voltage	Open emitter	60	V
$V_{CEO}$	Collector-emitter voltage	Open base	60	V
$V_{EBO}$	Emitter-base voltage	Open collector	7	V
$I_C$	Collector current		3	A
$I_B$	Base current		0.5	A
$P_C$	Collector dissipation	$T_a=25^\circ\text{C}$	1.5	W
		$T_C=25^\circ\text{C}$	25	
$T_j$	Junction temperature		150	°C
$T_{stg}$	Storage temperature		-55~150	°C

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## CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-emitter breakdown voltage	I <sub>C</sub> =50mA ; I <sub>B</sub> =0	60			V
V <sub>CEsat</sub>	Collector-emitter saturation voltage	I <sub>C</sub> =2A ; I <sub>B</sub> =0.2A			1.5	V
V <sub>BE</sub>	Base-emitter on voltage	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =5V		3.0		V
I <sub>CBO</sub>	Collector cut-off current	V <sub>CB</sub> =60V ; I <sub>E</sub> =0			10	μA
I <sub>EBO</sub>	Emitter cut-off current	V <sub>EB</sub> =7V ; I <sub>C</sub> =0			1.0	mA
h <sub>FE</sub>	DC current gain	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =5V	60			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> =0.5A ; V <sub>CE</sub> =5V		3.0		MHz
C <sub>OB</sub>	Collector output capacitance	f=1MHz ; V <sub>CB</sub> =10V		35		pF

## Switching times

t <sub>on</sub>	Turn-on time	I <sub>C</sub> =2.0A ; I <sub>B1</sub> =-I <sub>B2</sub> =0.2A V <sub>CC</sub> =30V , R <sub>L</sub> =15Ω		0.65		μs
t <sub>s</sub>	Storage time			1.30		μs
t <sub>f</sub>	Fall time			0.65		μs

◆ h<sub>FE</sub> Classifications

O	Y	G
60-120	100-200	150-300

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PACKAGE OUTLINE

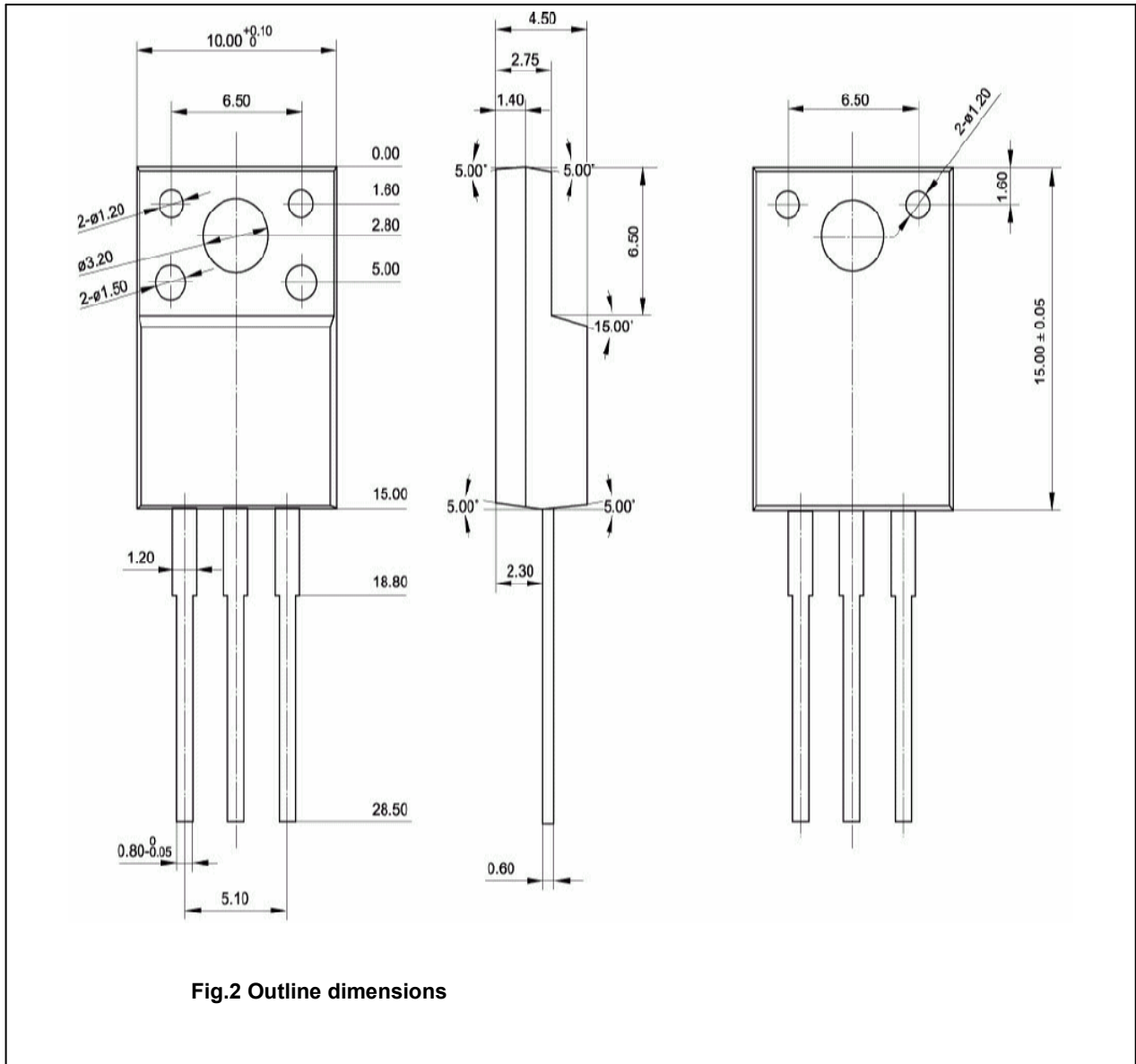


Fig.2 Outline dimensions

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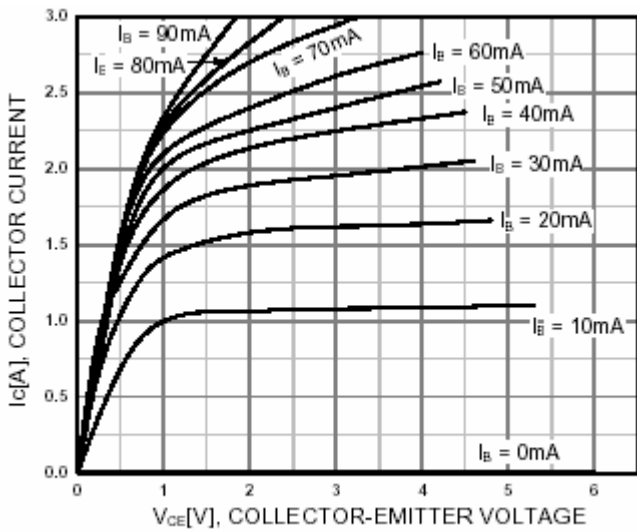


Fig.3 Static Characteristic

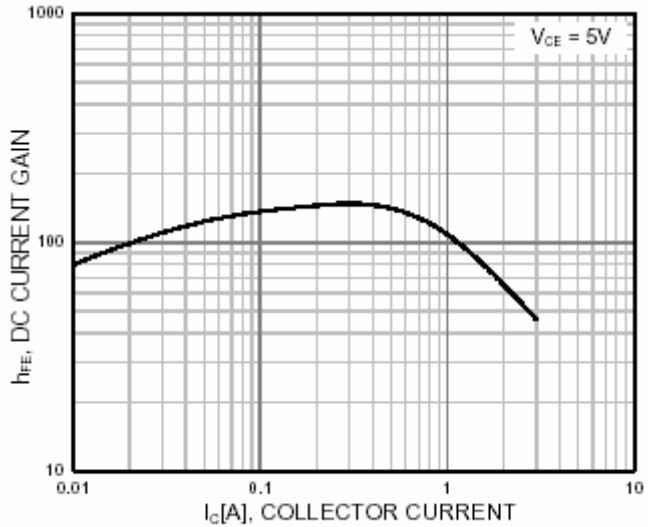


Fig.4 DC current Gain

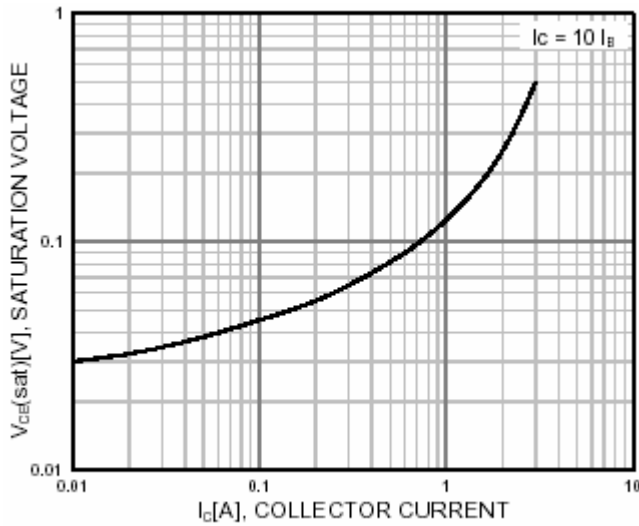


Fig.5 DC current Gain

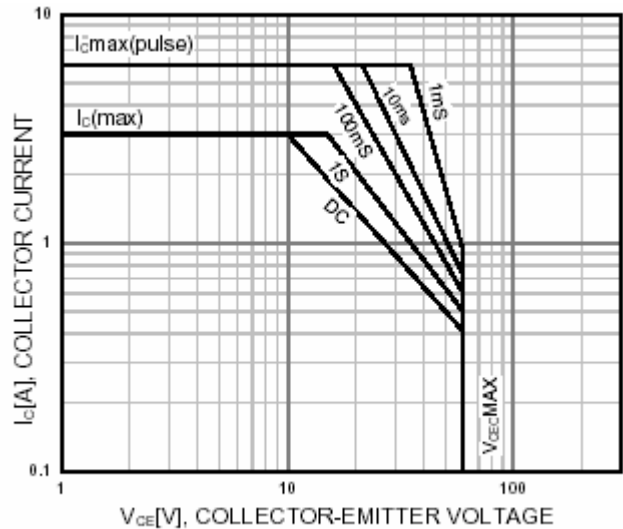


Fig.6 Safe Operating Area

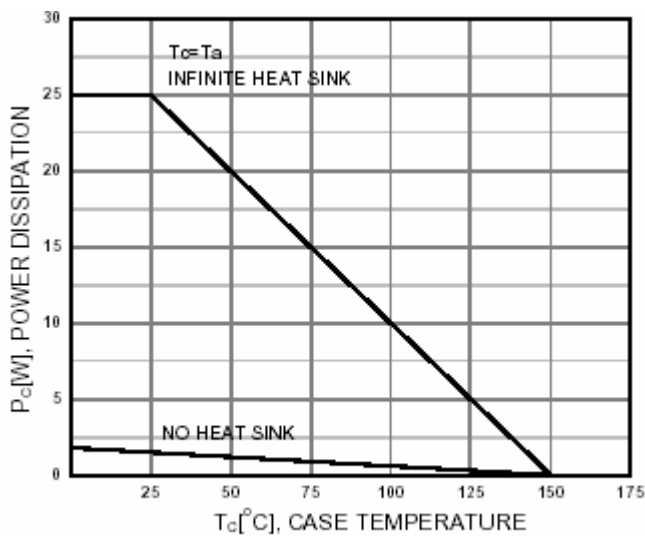


Fig.7 Power Derating