

## Silicon NPN Power Transistors

2SD2058

## DESCRIPTION

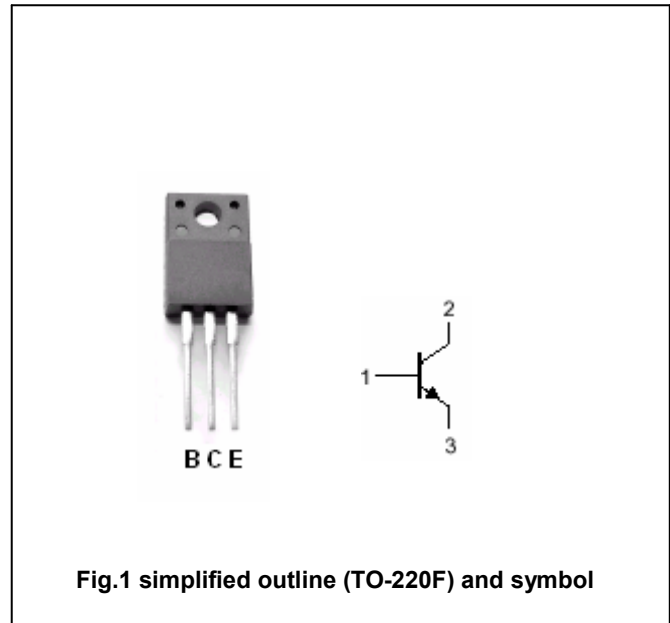
- With TO-220F package
- Complement to type 2SB1366
- Low collector saturation voltage:  
 $V_{CE(SAT)}=1.0V(\text{Max})$  at  $I_C=2A, I_B=0.2A$
- Collector power dissipation:  
 $P_C=25W(T_C=25^\circ\text{C})$

## APPLICATIONS

- With general purpose applications

## PINNING

PIN	DESCRIPTION
1	Base
2	Collector
3	Emitter

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

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	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-55~150	$^\circ\text{C}$

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## CHARACTERISTICS

Tj=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=50mA ; I_B=0$	60			V
$V_{CEsat}$	Collector-emitter saturation voltage	$I_C=2A ; I_B=0.2A$			1.5	V
$V_{BE}$	Base-emitter on voltage	$I_C=0.5A ; V_{CE}=5V$		3.0		V
$I_{CBO}$	Collector cut-off current	$V_{CB}=60V ; I_E=0$			10	$\mu A$
$I_{EBO}$	Emitter cut-off current	$V_{EB}=7V ; I_C=0$			1.0	mA
$h_{FE}$	DC current gain	$I_C=0.5A ; V_{CE}=5V$	60			
$f_T$	Transition frequency	$I_C=0.5A ; V_{CE}=5V$		3.0		MHz
$C_{OB}$	Collector output capacitance	$f=1MHz ; V_{CB}=10V$		35		pF

## Switching times

$t_{on}$	Turn-on time	$I_C=2.0A ; I_{B1}=-I_{B2}=0.2A$ $V_{CC}=30V , R_L=15\Omega$		0.65		$\mu s$
$t_s$	Storage time			1.30		$\mu s$
$t_f$	Fall time			0.65		$\mu s$

◆  $h_{FE}$  Classifications

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

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PACKAGE OUTLINE

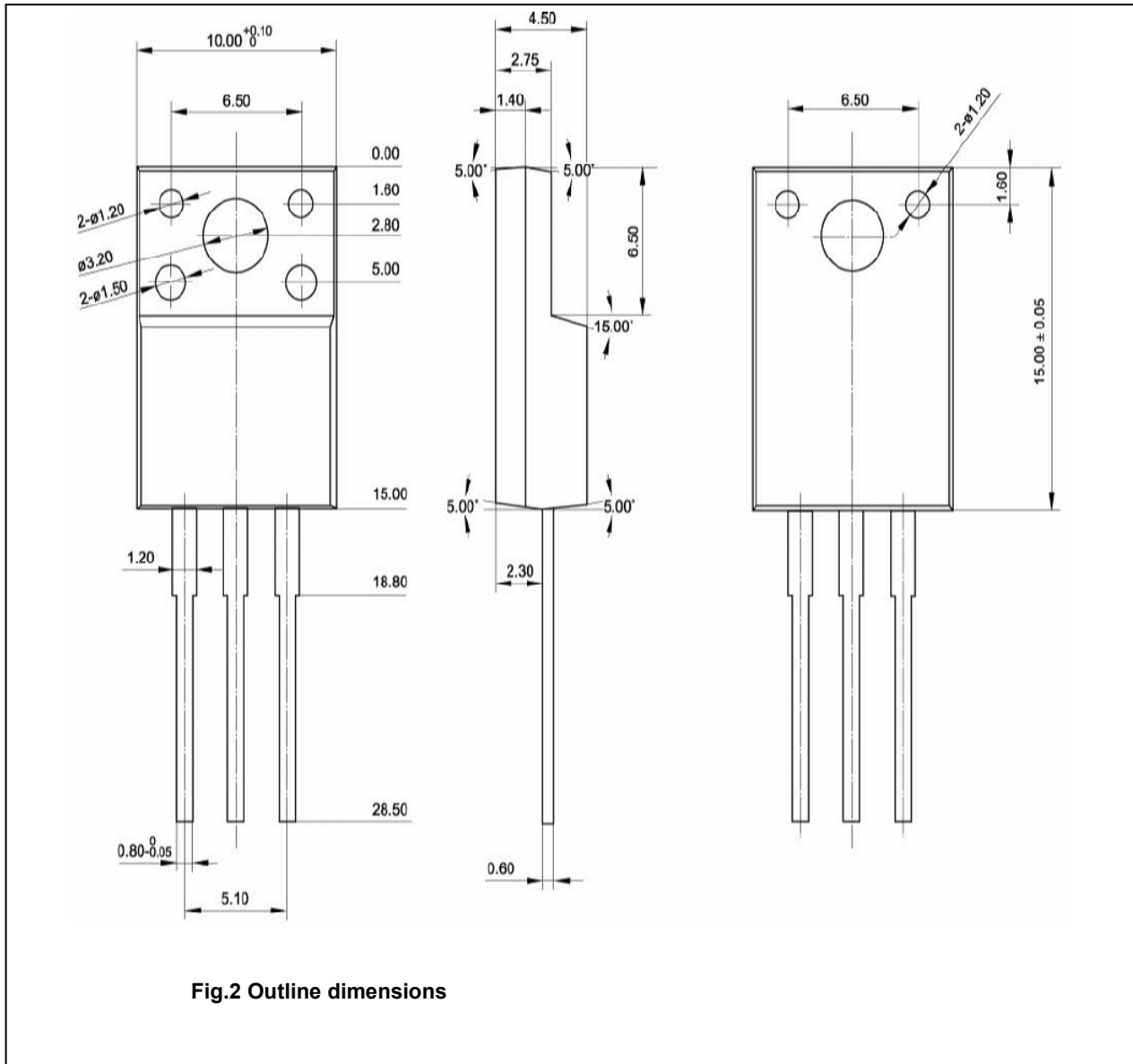


Fig.2 Outline dimensions

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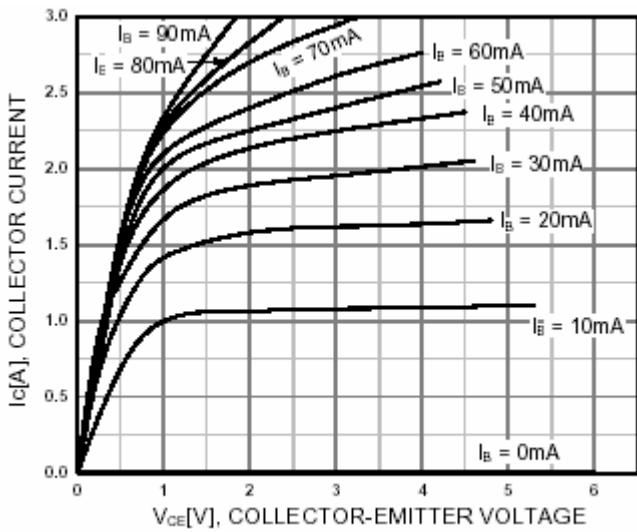


Fig.3 Static Characteristic

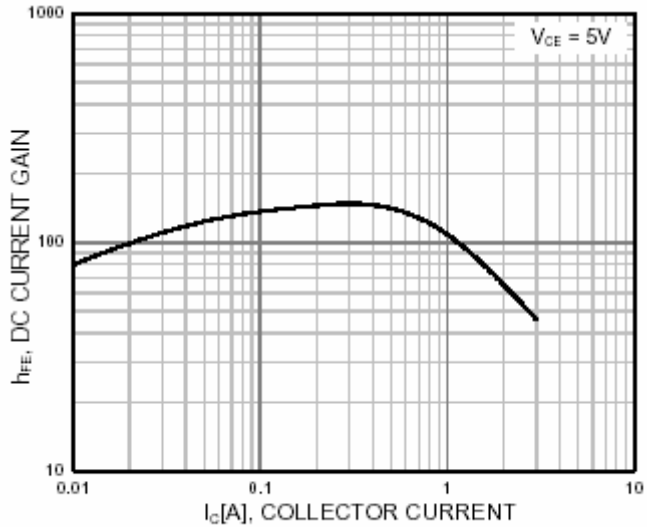


Fig.4 DC current Gain

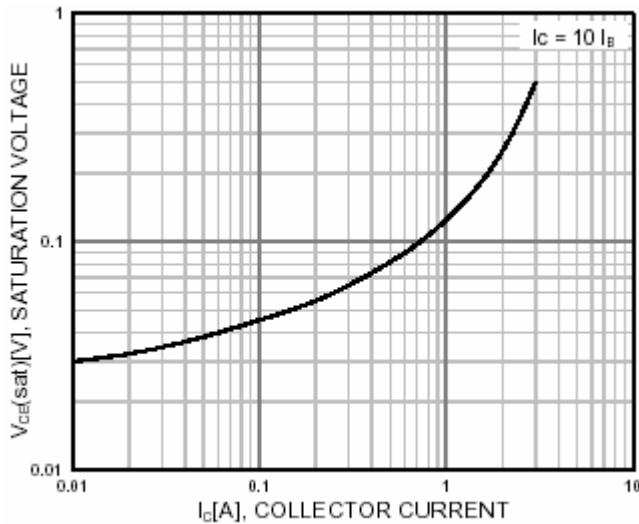


Fig.5 DC current Gain

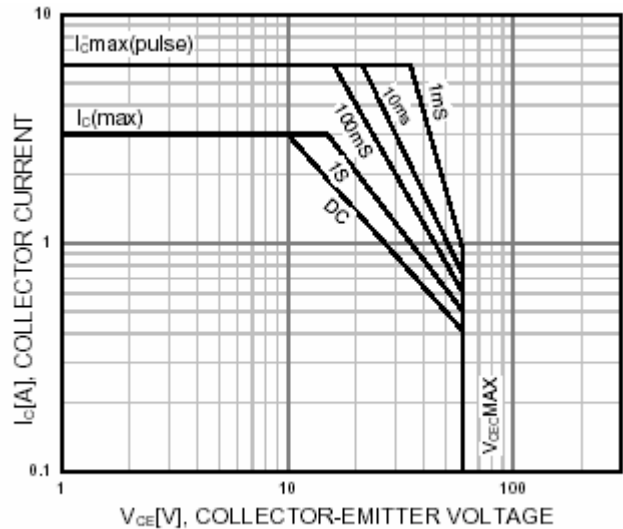


Fig.6 Safe Operating Area

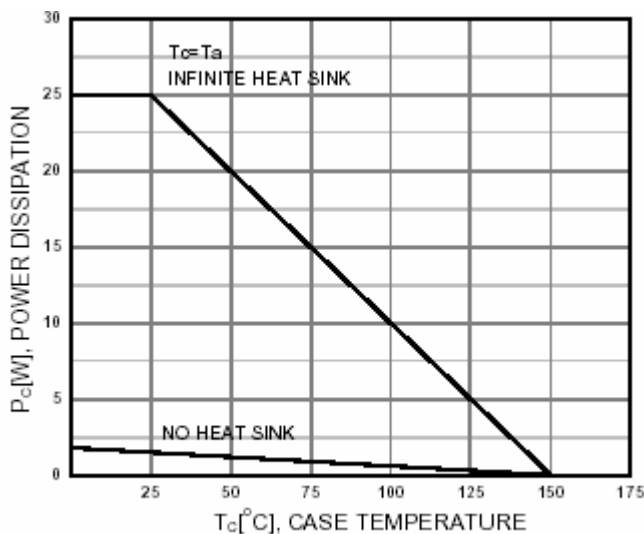


Fig.7 Power Derating