

Silicon PNP Power Transistors

2SB947 2SB947A

DESCRIPTION

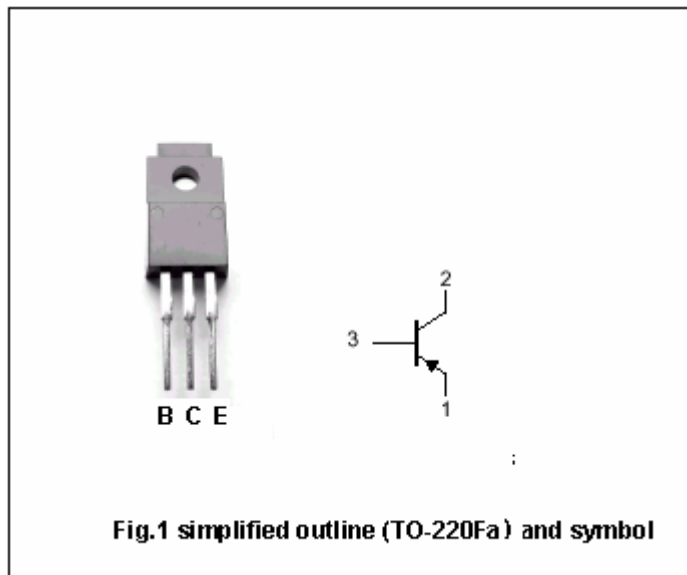
- With TO-220Fa package
- High speed switching
- Low collector saturation voltage

APPLICATIONS

- For low-voltage switching applications

PINNING

PIN	DESCRIPTION
1	Emitter
2	Collector
3	Base

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

SYMBOL	PARAMETER		CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	2SB947	Open emitter	-40	V
		2SB947A		-50	
V_{CEO}	Collector-emitter voltage	2SB947	Open base	-20	V
		2SB947A		-40	
V_{EBO}	Emitter-base voltage		Open collector	-5	V
I_C	Collector current			-10	A
I_{CM}	Collector current-peak			-15	A
P_C	Collector power dissipation	$T_a=25^\circ\text{C}$		2	W
		$T_C=25^\circ\text{C}$		35	
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 _{CEO}	Collector-emitter voltage	2SB947	I _C =-10mA; I _B =0	-20			V
		2SB947A		-40			
V _{CEsat}	Collector-emitter saturation voltage		I _C =-7A ;I _B =-0.23A			-0.6	V
V _{BEsat}	Base-emitter saturation voltage		I _C =-7A ;I _B =-0.23A			-1.5	V
I _{CBO}	Collector cut-off current	2SB947	V _{CB} =-40V; I _E =0			-50	μA
		2SB947A	V _{CB} =-50V; I _E =0			-50	μA
I _{EBO}	Emitter cut-off current		V _{EB} =-5V; I _C =0			-50	μA
h _{FE-1}	DC current gain		I _C =-0.1A ; V _{CE} =-2V	45			
h _{FE-2}	DC current gain		I _C =-2A ; V _{CE} =-2V	90		260	
f _T	Transition frequency		I _C =-0.5A; V _{CE} =-10V,f=10MHz		150		MHz
C _{OB}	Collector output capacitance		f=1MHz ; V _{CB} =-10V		200		pF
t _{on}	Trun-on time		I _C =-2A ;I _{B1} =-I _{B2} =-66mA		0.1		μs
t _s	Storage time				0.5		μs
t _f	Fall time				0.1		μs

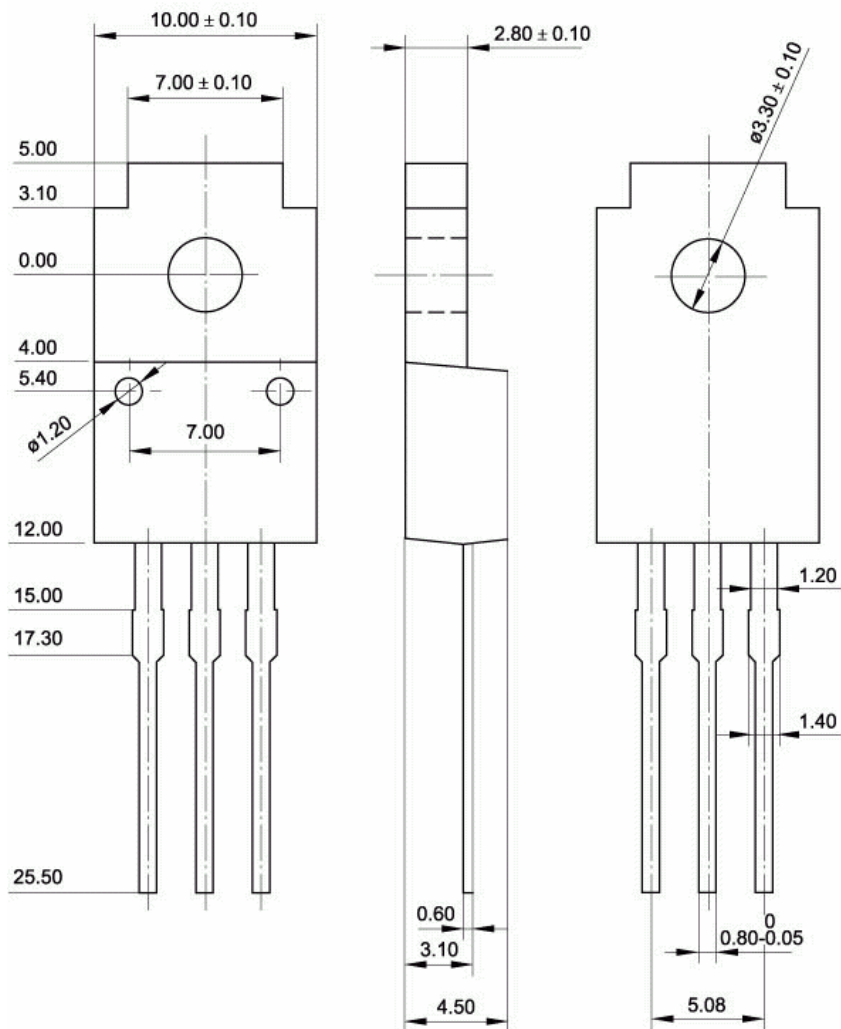
◆ h_{FE-2} Classifications

Q	P
90-180	130-260

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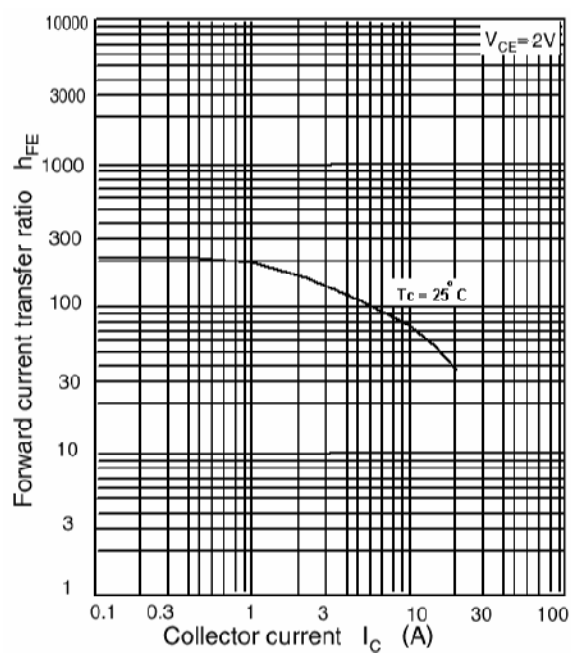
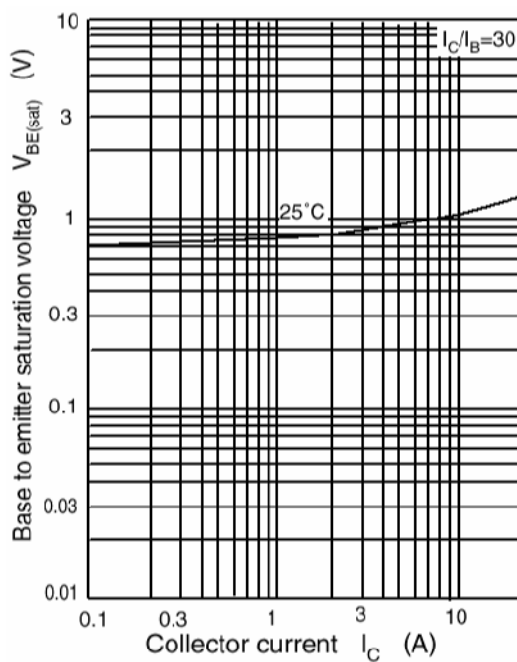
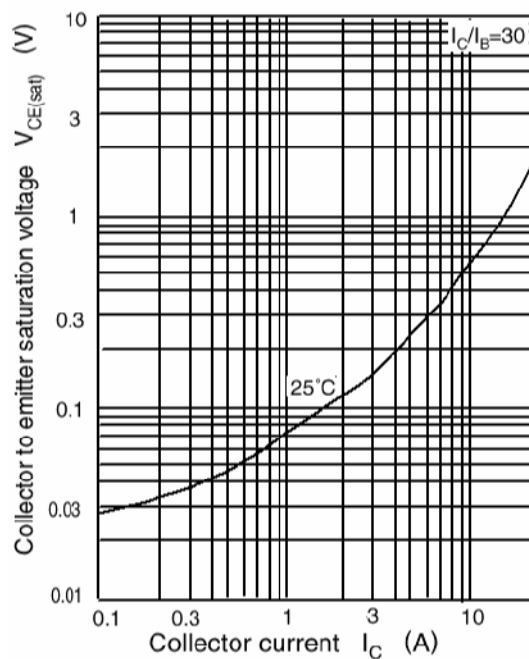
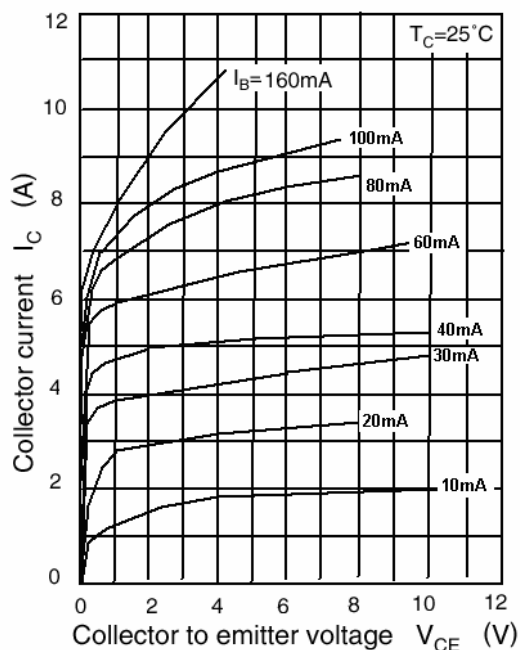
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PACKAGE OUTLINE

Fig.2 Outline dimensions (unindicated tolerance: ± 0.15 mm)

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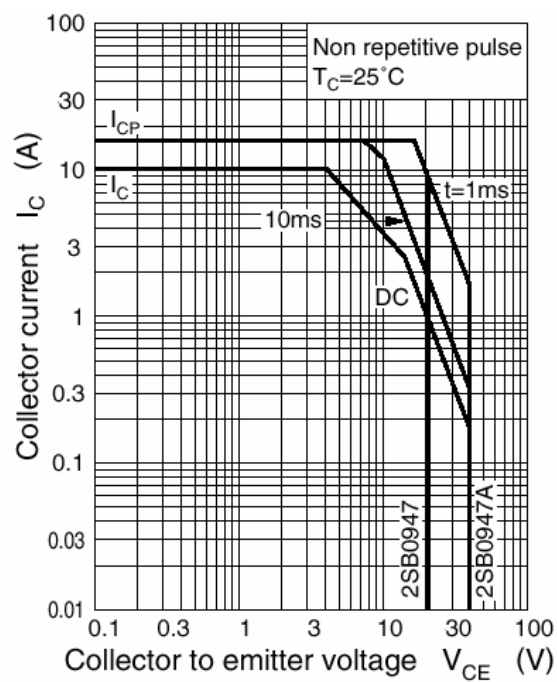


Fig.7 Safe Operating Area