

<Transistor>

# 2SA2002

For High Current Application  
Silicon PNP Epitaxial Type Micro(Frame type)

## DESCRIPTION

2SA2002 is a silicon PNP epitaxial type transistor designed with high collector current, small  $V_{CE(sat)}$ .

## FEATURE

- High collector current  
 $I_{CM} = -1000\text{mA}$
- Low collector to emitter saturation voltage  
 $V_{CE(sat)} = -0.25\text{V typ}$
- Excellent linearity of DC forward current gain
- High gain band width product  
 $f_T = 180\text{MHz typ}$
- High collector dissipation  
 $P_C = 600\text{mW}$

## APPLICATION

Small type motor drive, relay drive, power supply application.

## MAXIMUM RATINGS (Ta=25°C)

SYMBOL	PARAMETER	RATINGS	UNIT
V <sub>CB0</sub>	Collector to Base voltage	-25	V
V <sub>EB0</sub>	Emitter to Base voltage	-4	V
V <sub>CE0</sub>	Collector to Emitter voltage	-20	V
I <sub>CM</sub>	Peak collector current	-1000	mA
I <sub>C</sub>	Collector current	-700	mA
P <sub>C</sub>	Collector to Base voltage	600	mW
T <sub>J</sub>	Junction temperature	+150	°C
T <sub>stg</sub>	Storage temperature	-55 to +150	°C

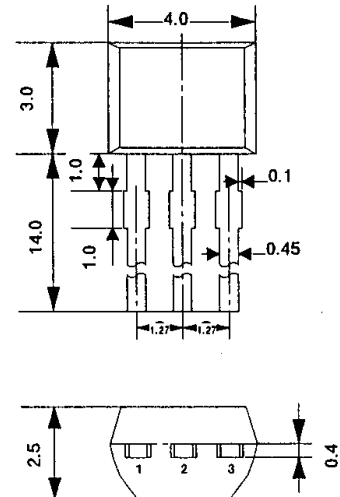
## ELECTRICAL CHARACTERISTICS (Ta=25°C)

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
V <sub>(BR)CBO</sub>	C to B break down voltage	I <sub>C</sub> = -10 μA, I <sub>E</sub> = 0	-25			V
V <sub>(BR)EBO</sub>	E to B break down voltage	I <sub>E</sub> = -10 μA, I <sub>C</sub> = 0	-4			V
V <sub>(BR)CEO</sub>	C to E break down voltage	I <sub>C</sub> = -100 μA, R <sub>BE</sub> = ∞	-20			V
I <sub>CBO</sub>	Collector cut off current	V <sub>CB</sub> = -25V, I <sub>E</sub> = 0			-1	μA
I <sub>EBO</sub>	Emitter cut off current	V <sub>EB</sub> = -2V, I <sub>C</sub> = 0			-1	μA
h <sub>FE</sub> *	DC forward current gain	V <sub>CE</sub> = -4V, I <sub>C</sub> = -100mA	150		800	—
V <sub>CE(sat)</sub>	C to E saturation voltage	I <sub>C</sub> = -500mA, I <sub>B</sub> = -25mA		-0.25	-0.5	V
f <sub>T</sub>	Gain band width product	V <sub>CE</sub> = -6V, I <sub>E</sub> = 10mA		180		MHz

ITEM	E	F	G
h <sub>FE</sub>	150~300	250~500	400~800

## OUTLINE DRAWING

UNIT:mm



## TERMINAL CONNECTOR

- ① : EMITTER      EIAJ : —  
 ② : COLLECTOR      JEDEC : —  
 ③ : BASE

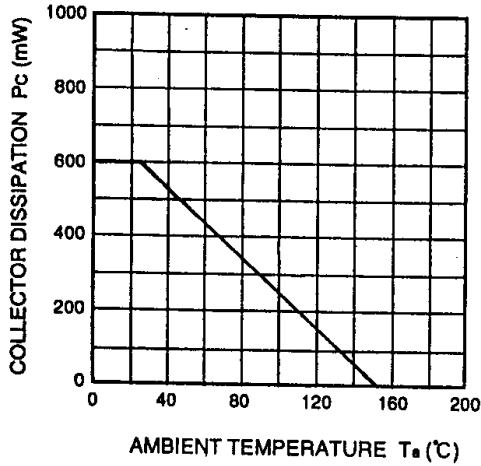
<Transistor>

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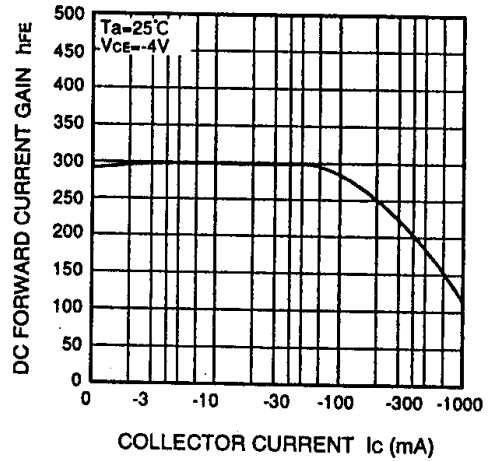
For High Current Application  
Silicon PNP Epitaxial Type Micro(Frame type)

## TYPICAL CHARACTERISTICS

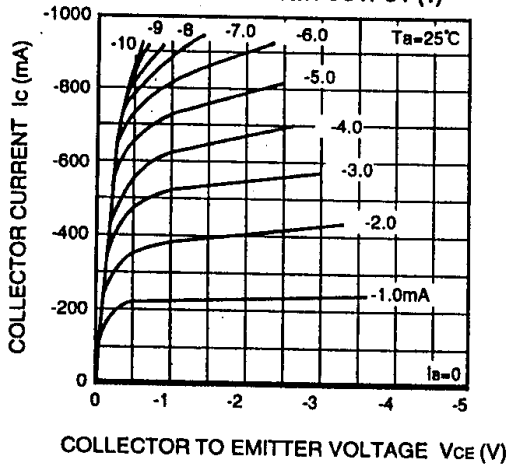
COLLECTOR DISSIPATION VS.  
AMBIENT TEMPERATURE



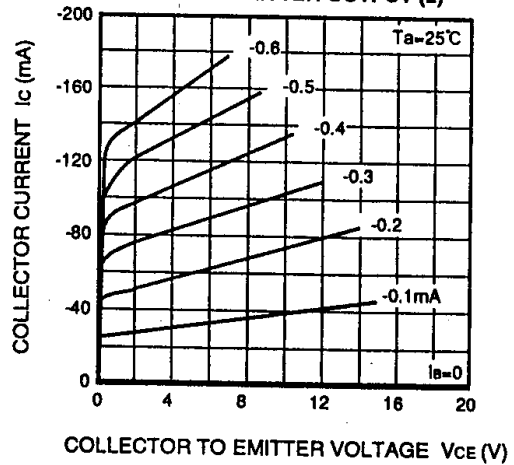
DC FORWARD CURRENT GAIN  
VS. COLLECTOR CURRENT



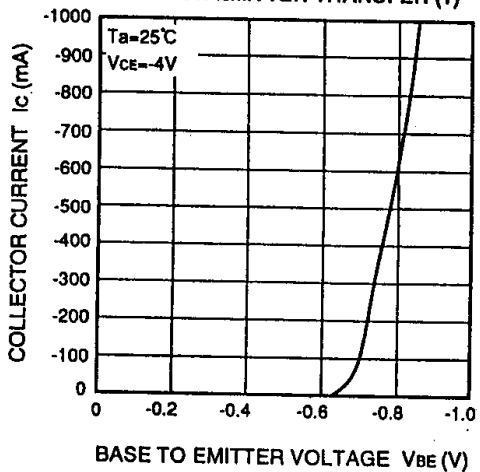
COMMON EMITTER OUTPUT (1)



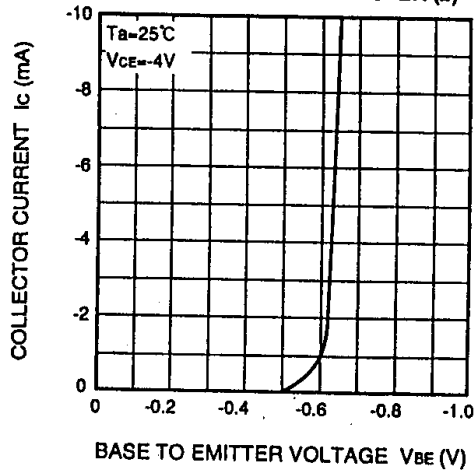
COMMON EMITTER OUTPUT (2)



COMMON EMITTER TRANSFER (1)



COMMON EMITTER TRANSFER (2)



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