

(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

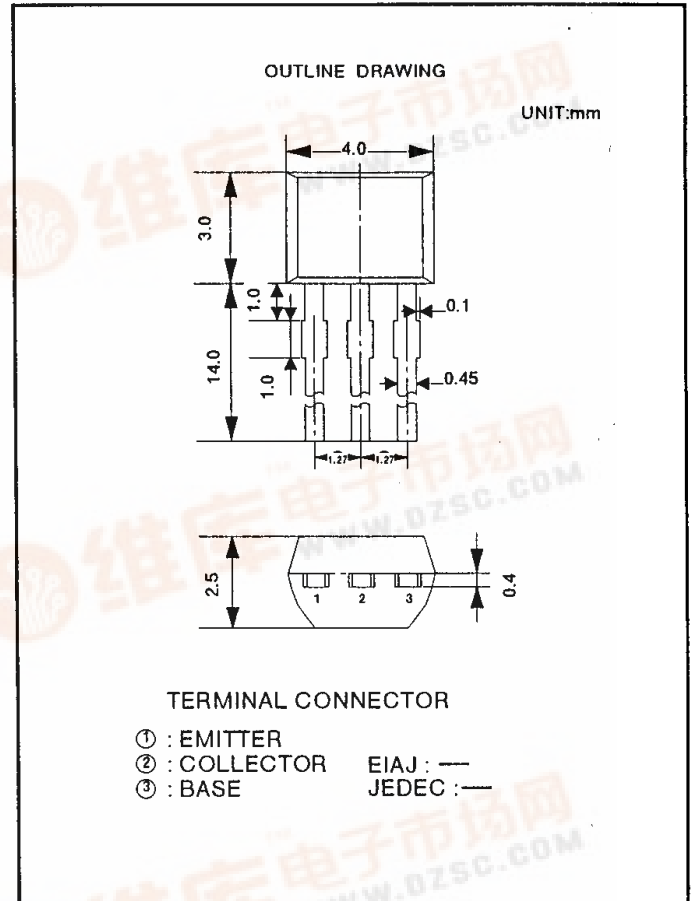
Small type motor drive, relay drive, power supply application.

### MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

SYMBOL	PARAMETER	RATINGS	UNIT
$V_{CBO}$	Collector to Base voltage	-25	V
$V_{EBO}$	Emitter to Base voltage	-4	V
$V_{CEO}$	Collector to Emitter voltage	-20	V
$I_{CM}$	Peak collector current	-1000	mA
$I_C$	Collector current	-700	mA
$P_C$	Collector to Base voltage	600	mW
$T_j$	Junction temperature	+150	$^\circ\text{C}$
$T_{stg}$	Storage temperature	-55 to +150	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
$V_{(BR)CBO}$	C to B break down voltage	$I_C = -10\mu\text{A}, I_E = 0$	-25			V
$V_{(BR)EBO}$	E to B break down voltage	$I_E = -10\mu\text{A}, I_C = 0$	-4			V
$V_{(BR)CEO}$	C to E break down voltage	$I_C = -100\mu\text{A}, R_{BE} = \infty$	-20			V
$I_{CBO}$	Collector cut off current	$V_{CB} = -25\text{V}, I_E = 0$			-1	$\mu\text{A}$
$I_{EBO}$	Emitter cut off current	$V_{EB} = -2\text{V}, I_C = 0$			-1	$\mu\text{A}$
$h_{FE} *$	DC forward current gain	$V_{CE} = -4\text{V}, I_C = -100\text{mA}$	150		800	—
$V_{CE(sat)}$	C to E saturation voltage	$I_C = -500\text{mA}, I_B = -25\text{mA}$		-0.25	-0.5	V
$f_T$	Gain band width product	$V_{CE} = -6\text{V}, I_E = 10\text{mA}$		180		MHz



ITEM	E	F	G
$h_{FE}$	150~300	250~500	400~800

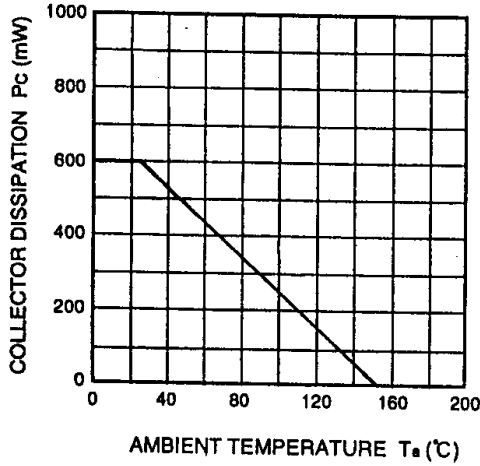
<Transistor>

# 2SA2002

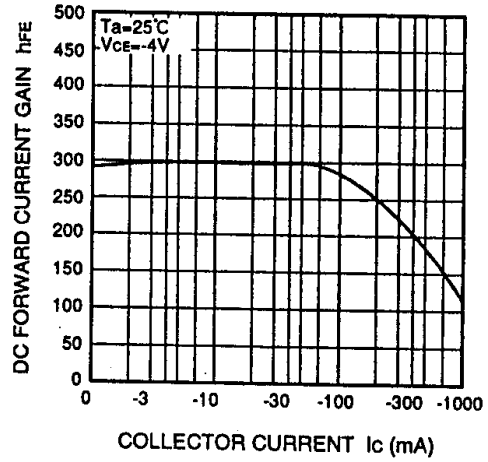
For High Current Application  
Silicon PNP Epitaxial Type Micro(Frame type)

## TYPICAL CHARACTERISTICS

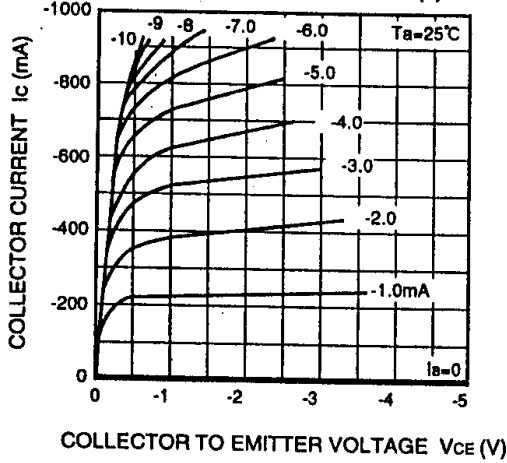
COLLECTOR DISSIPATION VS.  
AMBIENT TEMPERATURE



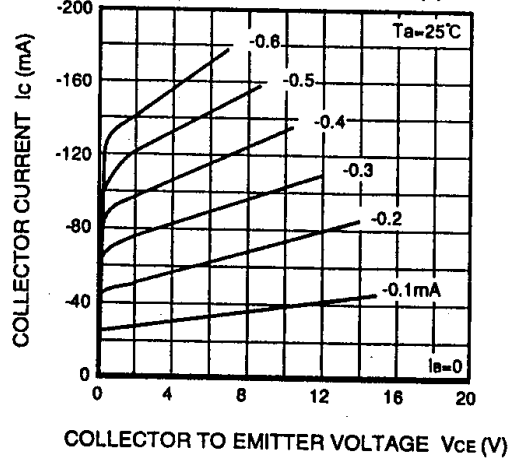
DC FORWARD CURRENT GAIN  
VS. COLLECTOR CURRENT



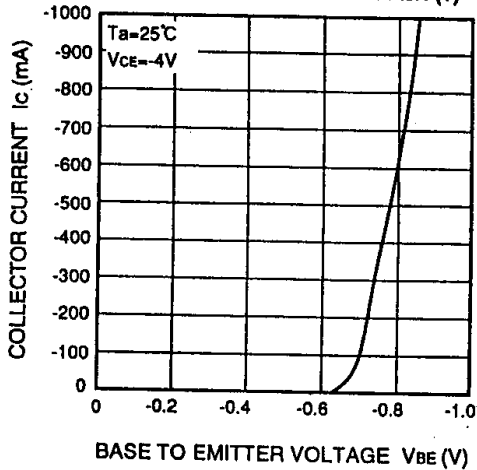
COMMON EMITTER OUTPUT (1)



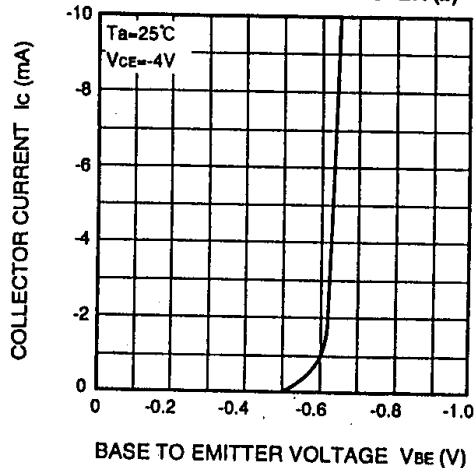
COMMON EMITTER OUTPUT (2)



COMMON EMITTER TRANSFER (1)



COMMON EMITTER TRANSFER (2)



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