

2SA2166

FOR GENERAL PURPOSE HIGH CURRENT DRIVE APPLICATION
SILICON PNP EPITAXIAL TYPE

DESCRIPTION

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ISAHAYA 2SA2166 is a silicon PNP epitaxial type transistor designed with high collector current, low $V_{CE(sat)}$.

FEATURE

- High collector current

$$I_{C(MAX)} = -500\text{mA}$$

- Low collector to emitter saturation voltage

$$V_{CE(sat)} < -0.4V_{max} (I_C = -150\text{mA}, I_B = -15\text{mA})$$

APPLICATION

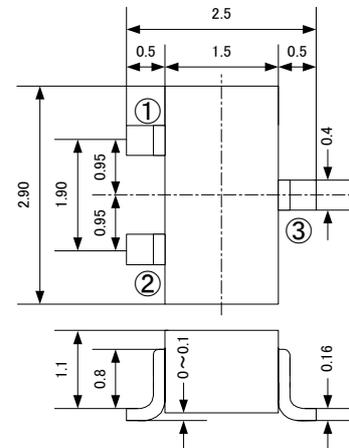
For switching application, small type motor drive application.

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

記号	項目	定格値	単位
V_{CEO}	Collector to Emitter voltage	-60	V
V_{CBO}	Collector to Base voltage	-60	V
V_{EBO}	Emitter to Base voltage	-5	V
I_C	Collector current	-500	mA
P_C	Collector dissipation	200	mW
T_j	Junction temperature	150	$^\circ\text{C}$
T_{stg}	Storage temperature	-55~150	$^\circ\text{C}$

OUTLINE DRAWING

Unit: mm

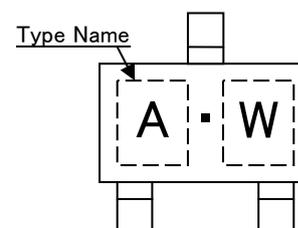


Notice: The dimension without tolerance represent central value.

TERMINAL CONNECTOR

- ①: BASE EIAJ: SC-59
- ②: EMITTER JEDEC: TO-236
- ③: COLLECTOR Resemblance

MARKING

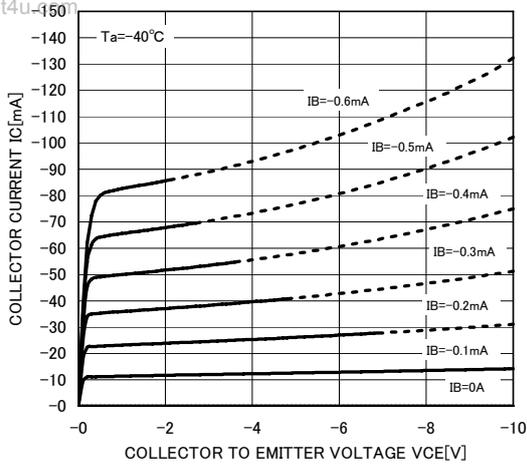


ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

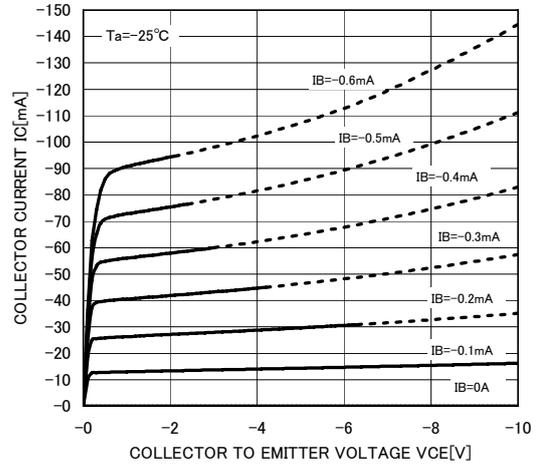
Symbol	Parameter	Test condition	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CEO}$	C to E break down voltage	$I_C = -1\text{mA}, I_B = 0$	-60			V
$V_{(BR)CBO}$	C to B break down voltage	$I_C = -10\mu\text{A}, I_E = 0$	-60			V
$V_{(BR)EBO}$	E to B break down voltage	$I_E = -10\mu\text{A}, I_C = 0$	-5			V
I_{CBO}	Collector cut off current	$V_{CB} = -50\text{V}, I_E = 0$			-100	nA
I_{EBO}	Emitter cut off current	$V_{EB} = -3\text{V}, I_C = 0$			-100	nA
h_{FE}	DC forward current gain	$I_C = -150\text{mA}, V_{CE} = -10\text{V}$	100		300	---
$V_{CE(sat)}$	C to E saturation voltage	$I_C = -150\text{mA}, I_B = -15\text{mA}$			-0.4	V
$V_{BE(sat)}$	B to E saturation voltage	$I_C = -150\text{mA}, I_B = -15\text{mA}$			-1.3	V
f_T	Gain band width product	$I_E = 50\text{mA}, V_{CE} = -20\text{V}, f = 100\text{MHz}$	200			MHz
C_{ob}	Collector output capacitance	$V_{CB} = -10\text{V}, f = 1\text{MHz}$			8	pF

TYPICAL CHARACTERISTICS

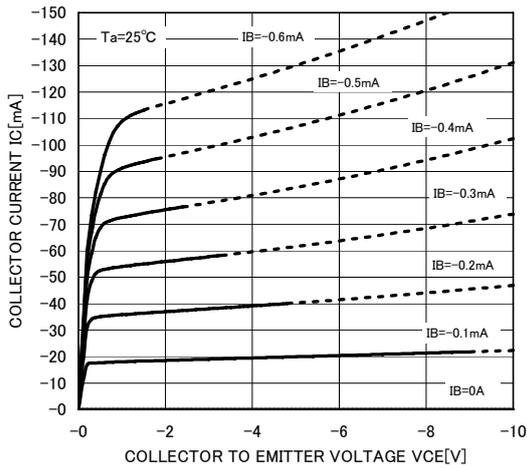
COMMON EMITTER OUTPUT



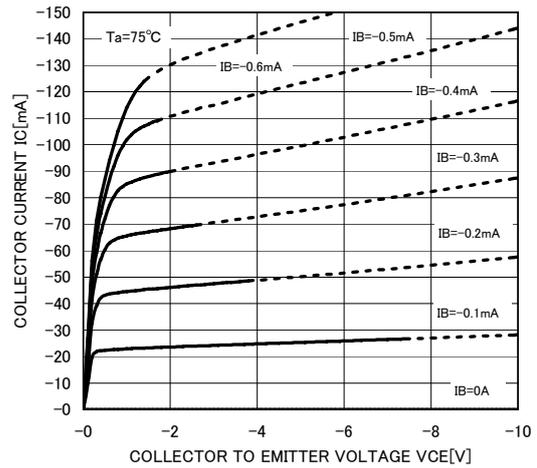
COMMON EMITTER OUTPUT



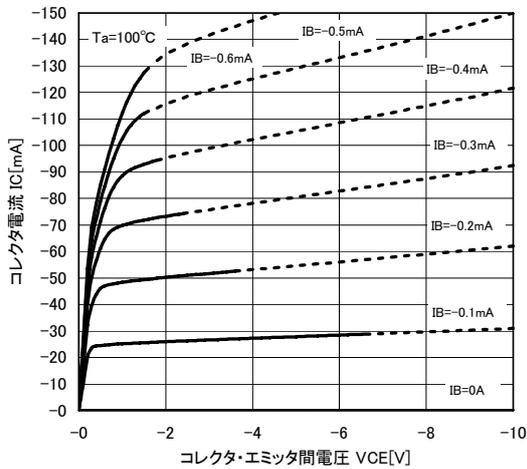
COMMON EMITTER OUTPUT



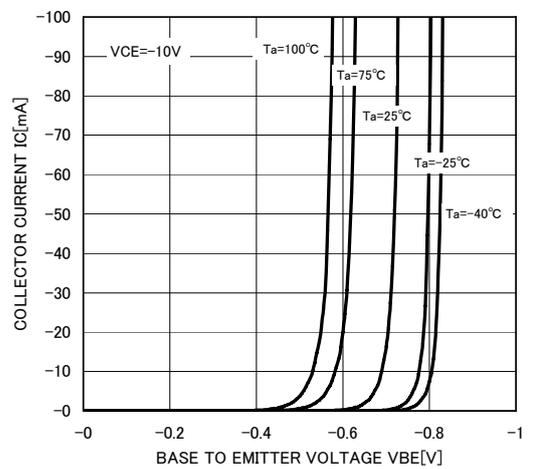
COMMON EMITTER OUTPUT



エミッタ接地出力特性

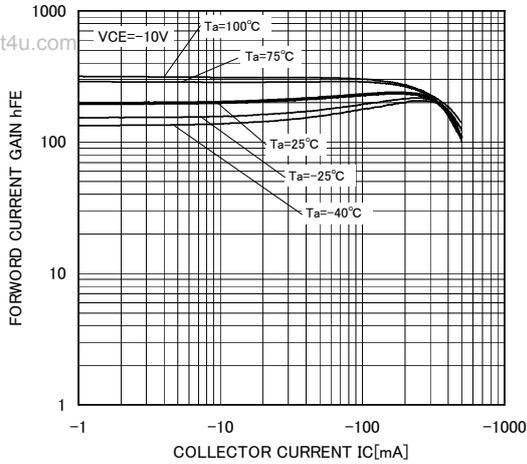


COMMON EMITTER TRANSFER

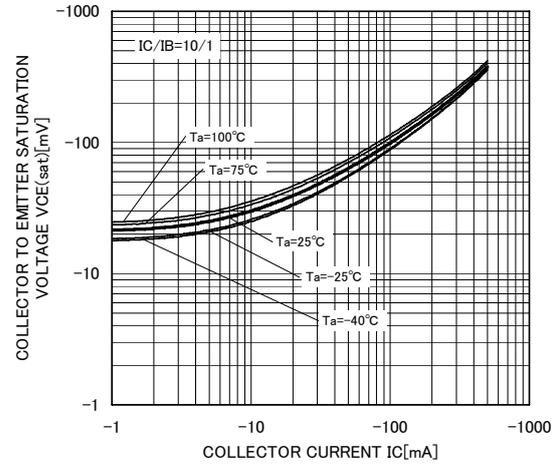


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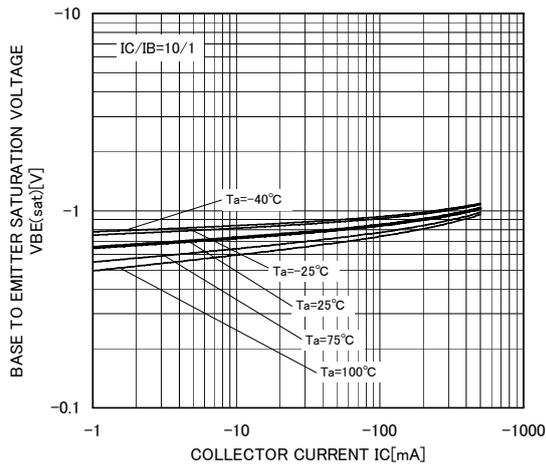
DC FORWARD CURRENT GAIN
VS. COLLECTOR CURRENT



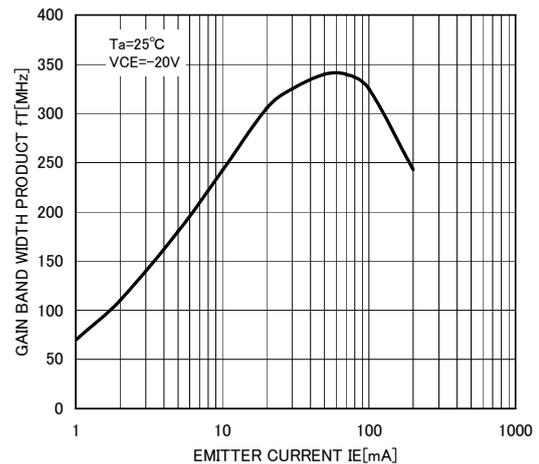
COLLECTOR TO EMITTER SATURATION VOLTAGE
VS. COLLECTOR CURRENT



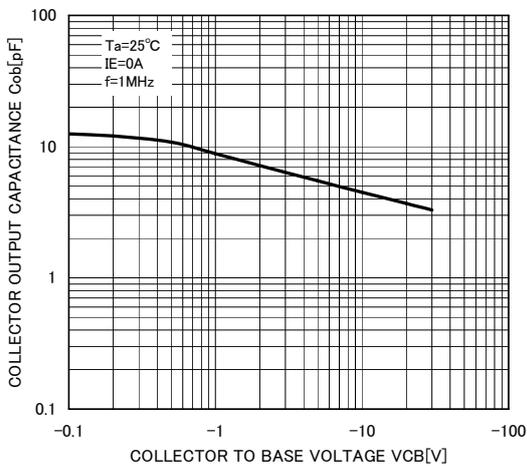
BASE TO EMITTER SATURATION VOLTAGE
VS. COLLECTOR CURRENT



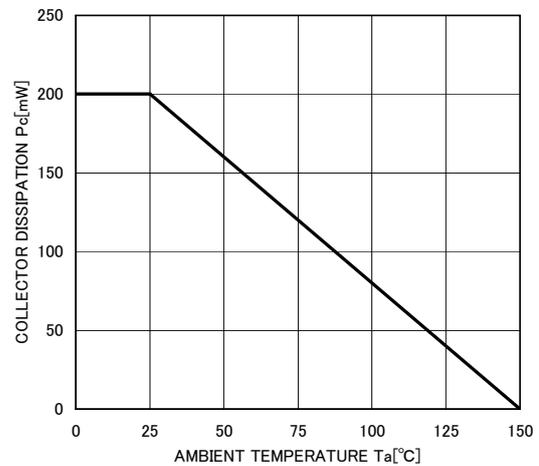
GAIN BAND WIDTH PRODUCT
VS. EMITTER CURRENT



COLLECTOR OUTPUT CAPACITANCE
VS. COLLECTOR TO BASE VOLTAGE



COLLECTOR DISSIPATION
VS. AMBIENT TEMPERATURE





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