

2SA2166

FOR GENERAL PURPOSE HIGH CURRENT DRIVE APPLICATION
SILICON PNP EPITAXIAL TYPE

DESCRIPTION

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

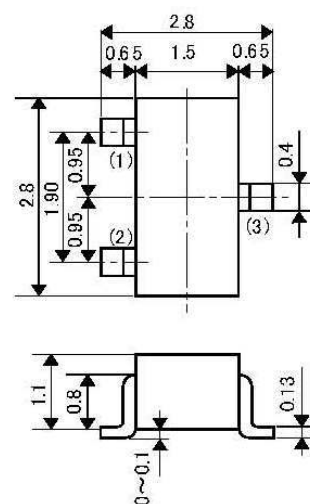
$$V_{CE(sat)} < -0.4V_{max} (I_C = -150\text{mA}, I_B = -15\text{mA})$$

APPLICATION

For switching application, small type motor drive application.

OUTLINE DRAWING

Unit: mm



Notice: The dimension without tolerance represent central value.

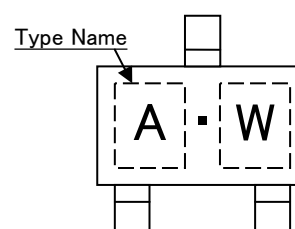
TERMINAL CONNECTOR

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

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	$^\circ\text{C}$

MARKING

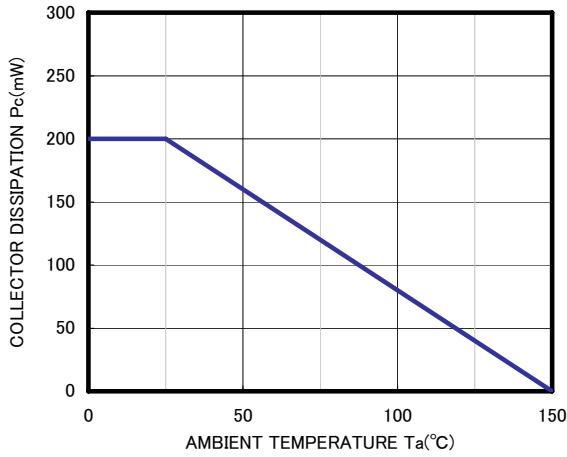


ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

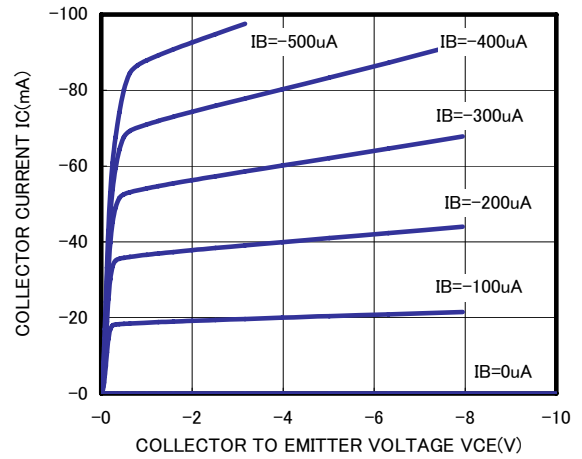
Symbol	Parameter	Test condition	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CEO}$	C to E break down voltage	$I_C = -1\text{mA}, I_B = 0$	-60			V
$V_{(BR)CBO}$	C to B break down voltage	$I_C = -10\mu\text{A}, I_E = 0$	-60			V
$V_{(BR)EBO}$	E to B break down voltage	$I_E = -10\mu\text{A}, I_C = 0$	-5			V
I_{CBO}	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

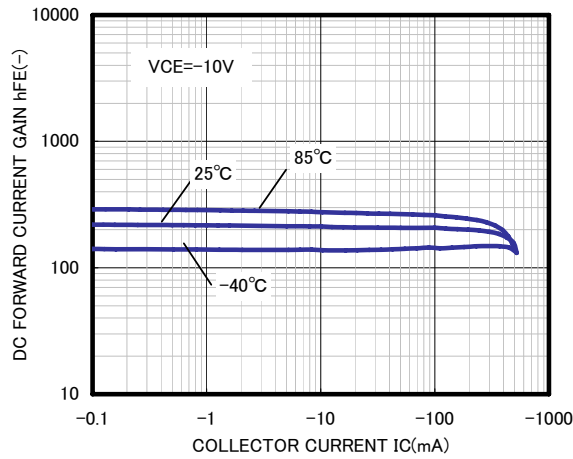
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



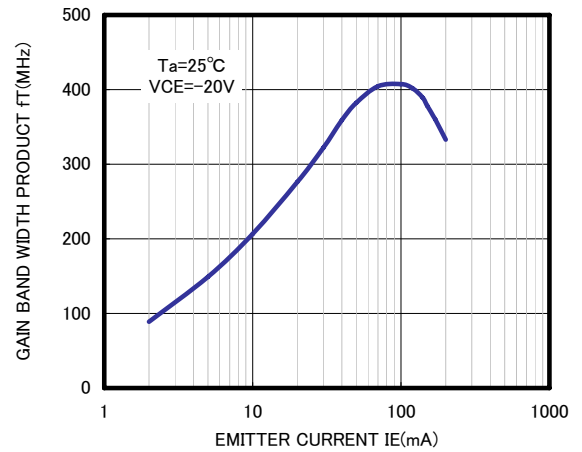
COMMON EMITTER OUTPUT $T_a=25^\circ\text{C}$



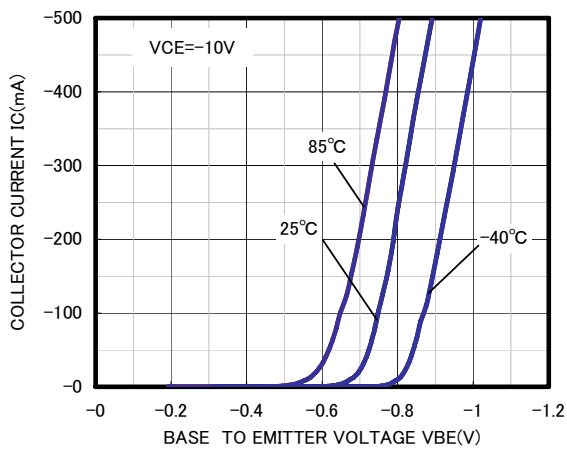
DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



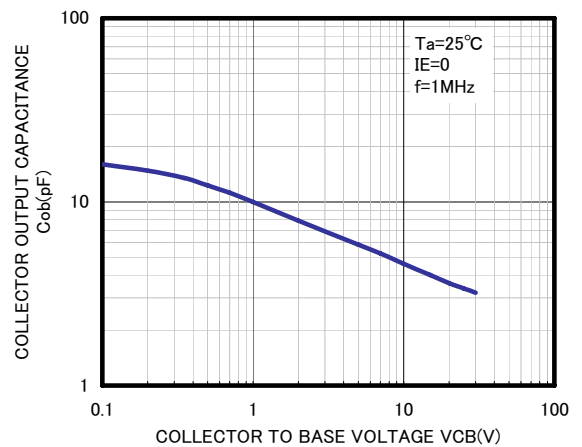
GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT



COMMON EMITTER TRANSFER



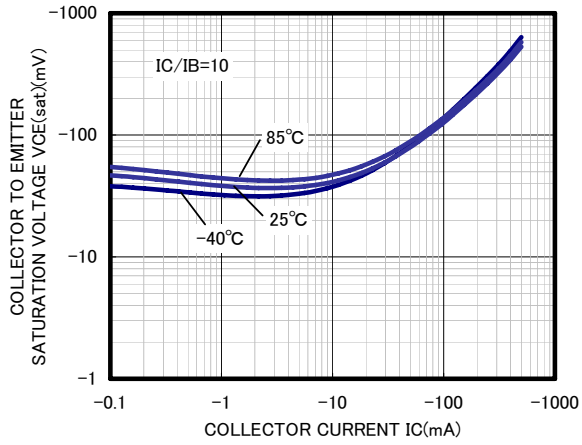
COLLECTOR OUTPUT CAPACITANCE VS. COLLECTOR TO BASE VOLTAGE



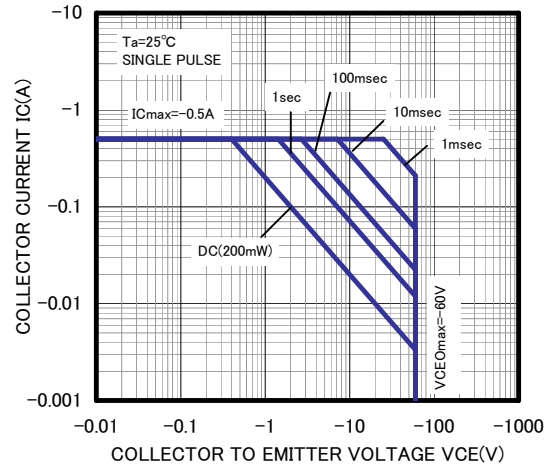
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SILICON PNP EPITAXIAL TYPE

COLLECTOR TO EMITTER SATURATION VOLTAGE
VS. COLLECTOR CURRENT



AREA OF SAFE OPERATION





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