

ISA2166AM1

FOR GENERAL PURPOSE HIGH CURRENT DRIVE APPLICATION
SILICON PNP EPITAXIAL TYPE

DESCRIPTION

ISA2166AM1 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

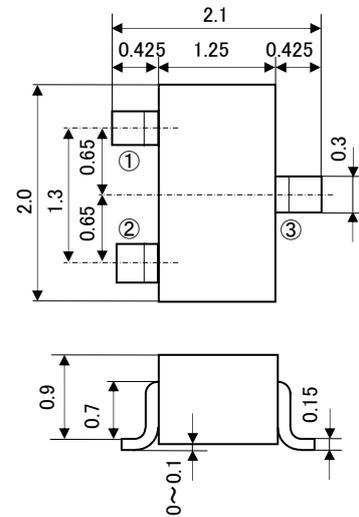
$$V_{CE(sat)} < -0.4V_{max} (I_C = -150\text{mA}, I_B = -15\text{mA})$$

APPLICATION

For switching application, small type motor drive application.

OUTLINE DRAWING

Unit: mm



TERMINAL CONNECTOR

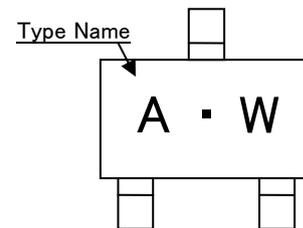
- ①: BASE
- ②: EMITTER
- ③: COLLECTOR

JEITA: SC-70
JEDEC: —

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

Symbol	Parameter	Ratings	Unit
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 ($T_a = 25^\circ\text{C}$)

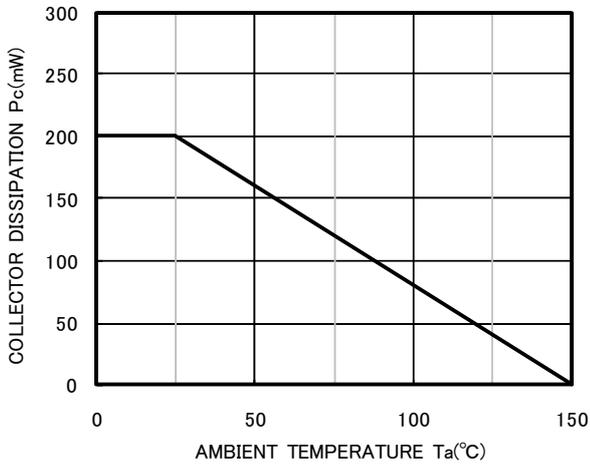
Symbol	Parameter	Test condition	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CEO}$	C to E break down voltage	$I_C = -1\text{mA}, I_B = 0$	-60	—	—	V
$V_{(BR)CBO}$	C to B break down voltage	$I_C = -10\ \mu\text{A}, I_E = 0$	-60	—	—	V
$V_{(BR)EBO}$	E to B break down voltage	$I_E = -10\ \mu\text{A}, I_C = 0$	-5	—	—	V
I_{CBO}	Collector cut off current	$V_{CB} = -50\text{V}, I_E = 0$	—	—	-0.1	μA
I_{EBO}	Emitter cut off current	$V_{EB} = -3\text{V}, I_C = 0$	—	—	-0.1	μA
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

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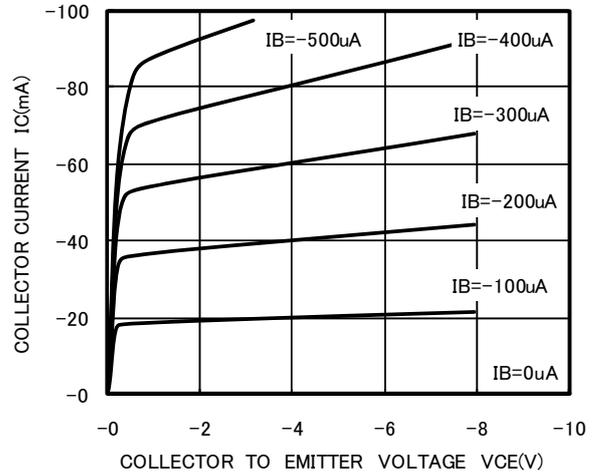
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TYPICAL CHARACTERISTICS

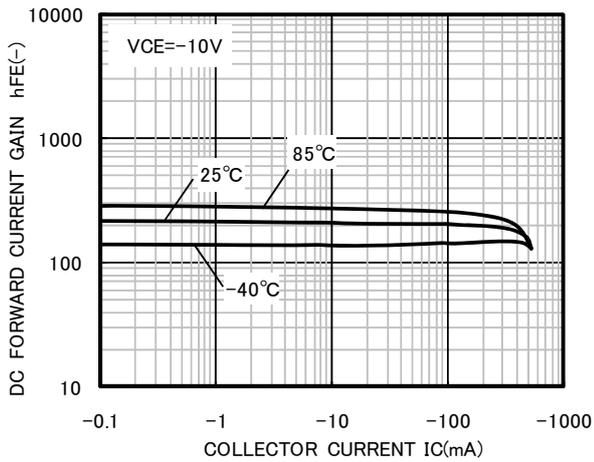
COLLECTOR DISSIPATION VS.
AMBIENT TEMPERATURE



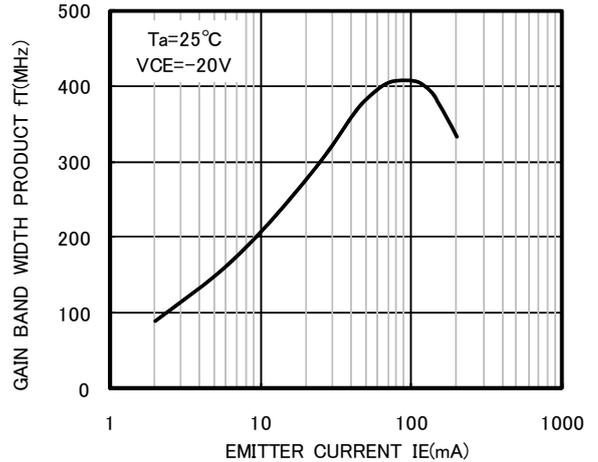
COMMON EMITTER OUTPUT $T_a=25^{\circ}$ C



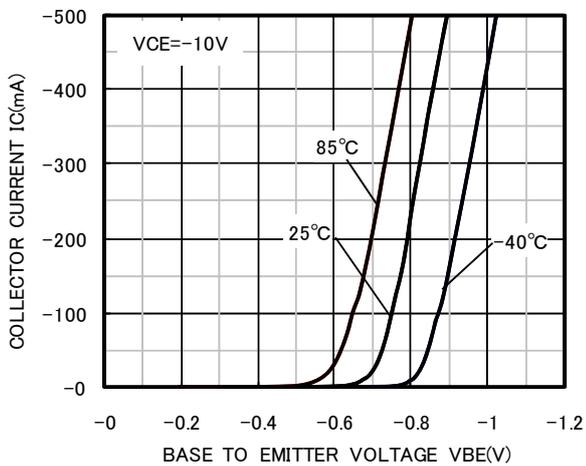
DC FORWARD CURRENT GAIN VS.
COLLECTOR CURRENT



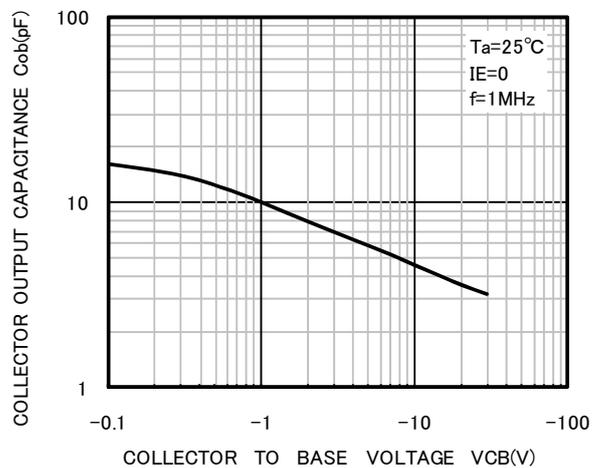
GAIN BAND WIDTH PRODUCT VS.
EMITTER CURRENT



COMMON EMITTER TRANSFER



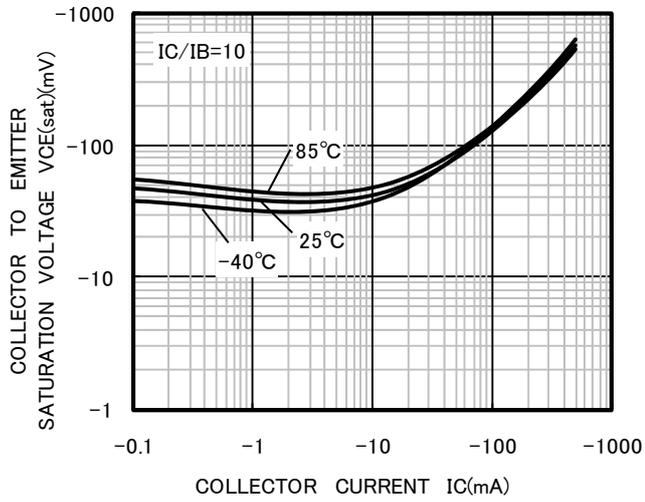
COLLECTOR OUTPUT CAPACITANCE VS.
COLLECTOR TO BASE VOLTAGE



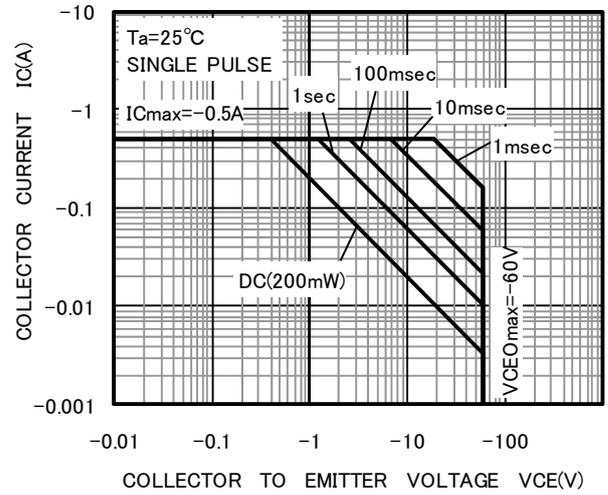
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COLLECTOR TO EMITTER SATURATION
VOLTAGE VS. COLLECTOR CURRENT



AREA OF SAFE OPERATION



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