# ISA1989AU1

FOR LOW FREQUENCY AMPLIFY APPLICATION
SILICON PNP EPITAXIAL TYPE

## FEATURE

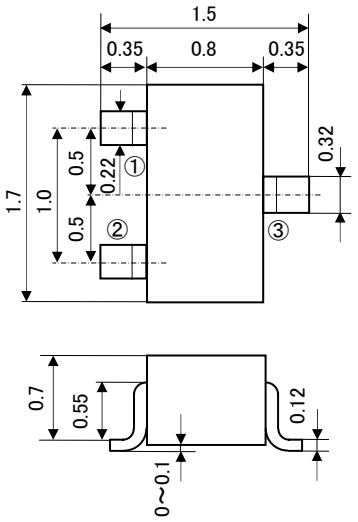
- ・Super mini package resin sealed silicon PNP epitaxial type transistor.
- ・Excellent linearity of DC forward current gain
- ・Small collector to emitter saturation voltage VCE(sat)=−0.3Vmax

## APPLICATION

- ・For small type machine low frequency voltage Amplify application.

## OUTLINE DRAWING

UNIT:mm



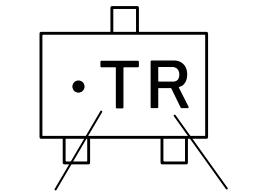

TERMINAL CONNECTER
①:BASE
②:EMITTER
③:COLLECTOR

JEITA:SC−75A
JEDEC:−

## MAXIMUM RATINGS(Ta=25℃)

| Parameter | Symbol | Ratings | UNIT |
|---|---|---|---|
| Collector to Base voltage | $V_{CBO}$ | −60 | V |
| Emitter to Base voltage | $V_{EBO}$ | −6 | V |
| Collector to Emitter voltage | $V_{CEO}$ | −50 | V |
| Collector current | $I_C$ | −150 | mA |
| Collector dissipation | $P_C$ | 150 | mW |
| Junction temperature | Tj | +150 | ℃ |
| Storage temperature | Tstg | −55～+150 | ℃ |

## MARKING




## ELECTRICAL CHARACTERISTICS(Ta=25℃)

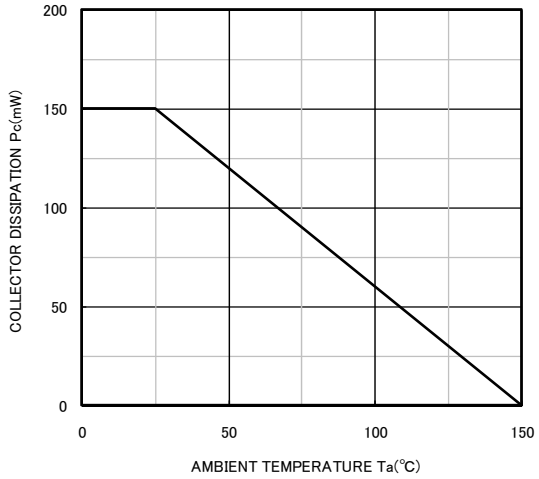
| Parameter | Symbol | Test conditions | Limits | | | UNIT |
|---|---|---|---|---|---|---|
| | | | Min | Ave | Max | |
| Collector to Emitter Breakdown voltage | $V_{(BR)CEO}$ | $I_C$=−100μA, $R_{BE}$=∞ | −50 | − | − | V |
| Collector cut off current | $I_{CBO}$ | $V_{CB}$=−60V, $I_E$=0mA | − | − | −0.1 | μA |
| Emitter cut off current | $I_{EBO}$ | $V_{EB}$=−4V, $I_C$=0mA | − | − | −0.1 | μA |
| DC forward current gain | $h_{FE}$ * | $V_{CE}$=−6V, $I_C$=−1mA | 120 | − | 560 | − |
| DC forward current gain | $h_{FE}$ | $V_{CE}$=−6V, $I_C$=−0.1mA | 70 | − | − | − |
| Collector to Emitter saturation voltage | $V_{CE(sat)}$ | $I_C$=−100mA, $I_B$=−10mA | − | − | −0.3 | V |
| Gain bandwidth product | $f_T$ | $V_{CE}$=−6V, $I_E$=10mA | − | 200 | − | MHz |
| Collector output capacitance | Cob | $V_{CB}$=−6V, $I_E$=0, f=1MHz | − | 4.0 | − | pF |

＊:It shows hFE classification in below table

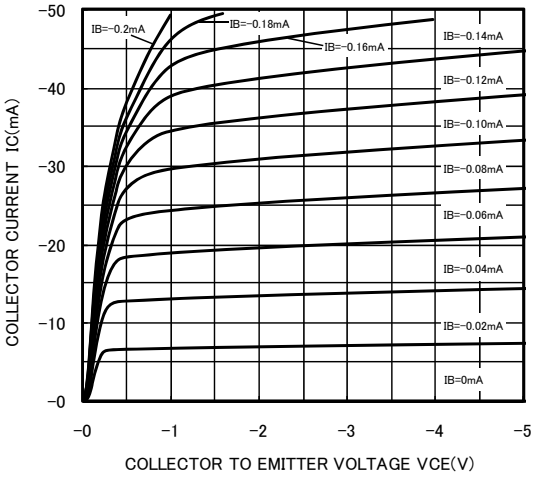
| Item | Q | R | S |
|---|---|---|---|
| hFE | 120～270 | 180～390 | 270～560 |

## TYPICAL CHARACTERISTICS

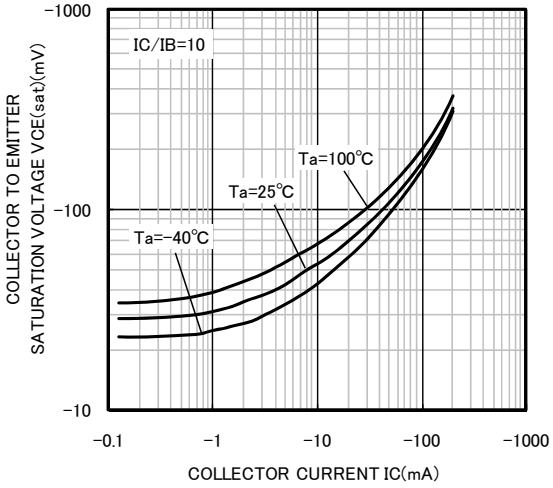
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



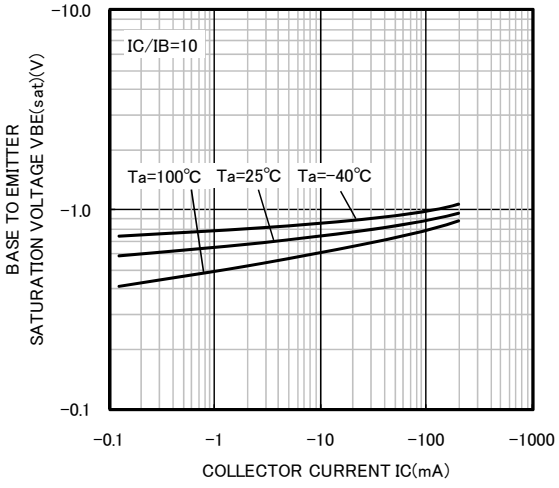

COMMON EMITTER OUTPUT



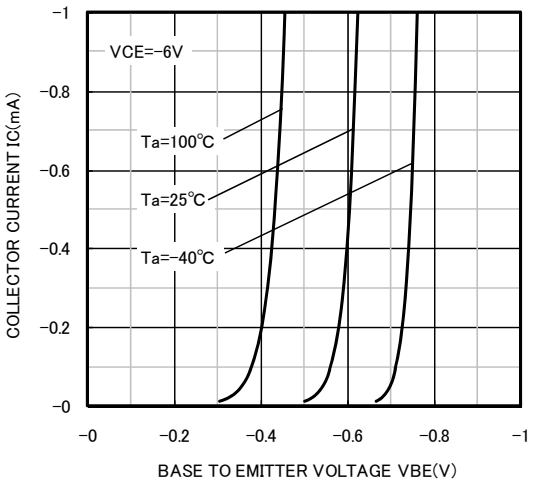

COLLECTOR TO EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT



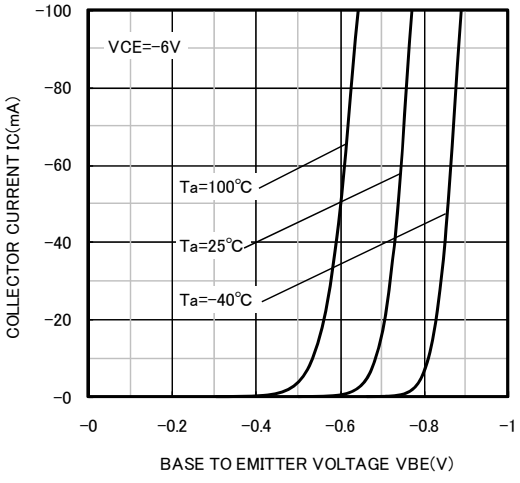

BASE TO EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT



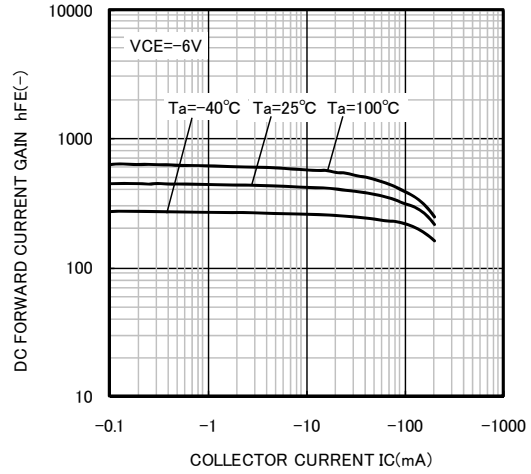

COMMON EMITTER TRANSFER



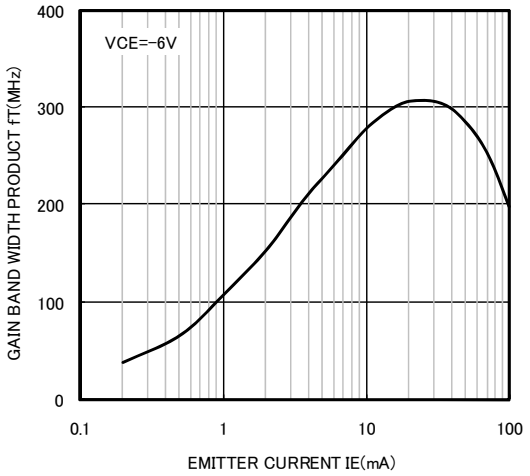

COMMON EMITTER TRANSFER



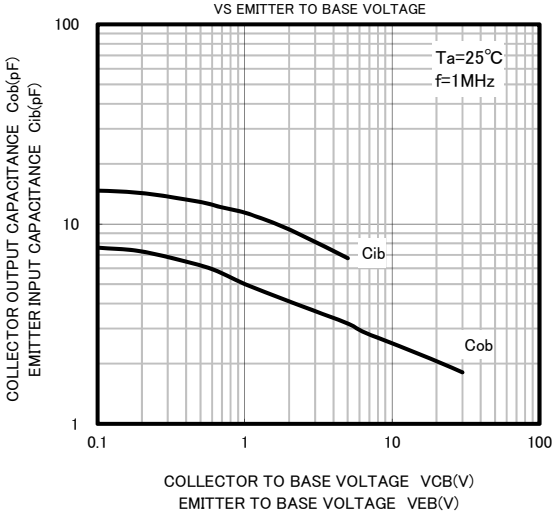
DC FORWARD CURRENT GAIN VS.
COLLECTOR CURRENT



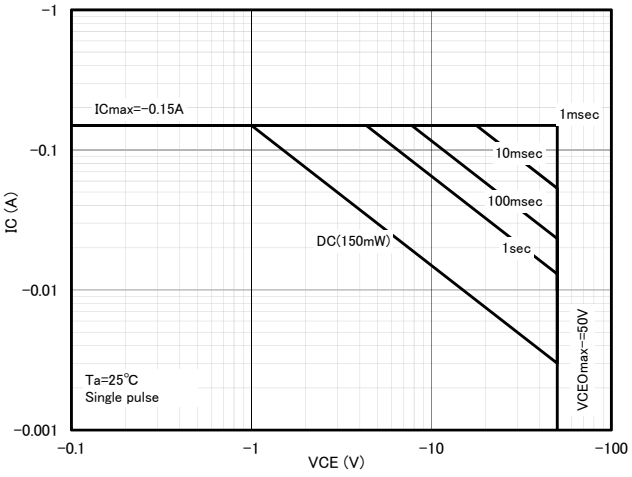

GAIN BAND WIDTH PRODUCT VS. EMITTER CURRENT




COLLECTOR OUTPUT CAPACITANCE
VS COLLECTOR TO BASE VOLTAGE
EMITTER INPUT CAPACITANCE
VS EMITTER TO BASE VOLTAGE




ASO



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