# INA5002AP1-TH51

For low frequency power amplify
Silicon PNP Epitaxial

AEC-Q101 Compliance

## DESCRIPTION

INA5002AP1 is a silicon PNP epitaxial transistor designed for relay drive or Power supply application.

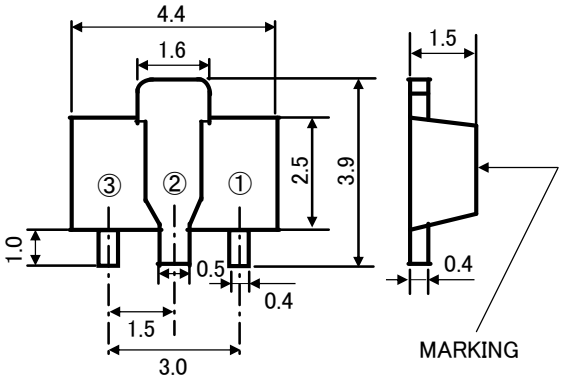
## FEATURE

- Small package for easy mounting.
- High voltage $V_{CEO}$=−60V
- High collector current $I_C$=−3A
- Low VCE(sat) VCE(sat)=−0.6V max(@$I_C$=−3A/ $I_B$=−300mA)
- High collector dissipation $P_C$=500mW

## APPLICATION

DC･DC converter, Relay drive, Motor drive

OUTLINE DRAWING UNIT:mm




TERMINAL CONNECTOR

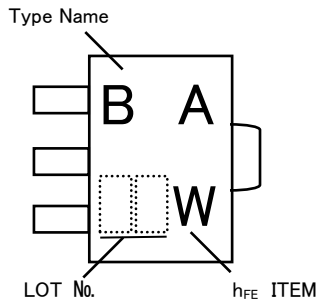
①:BASE
②:COLLECTOR
③:EMITTER

JEITA:SC-62
JEDEC:SOT-89

## MAXIMUM RATING(Ta=25℃)

| SYMBOL | PARAMETER | RATING | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector to Base voltage | −80 | V |
| $V_{EBO}$ | Emitter to Base voltage | −6 | V |
| $V_{CEO}$ | Collector to Emitter voltage | −60 | V |
| $I_C$ | Collector current | −3 | A |
| $I_{CM}$ | Peak Collector current | −6 | |
| $P_C$ | Collector dissipation(Ta=25℃) | 500 | mW |
| $T_j$ | Junction temperature | ＋150 | ℃ |
| $T_{stg}$ | Storage temperature | −55～＋150 | ℃ |

MARKING

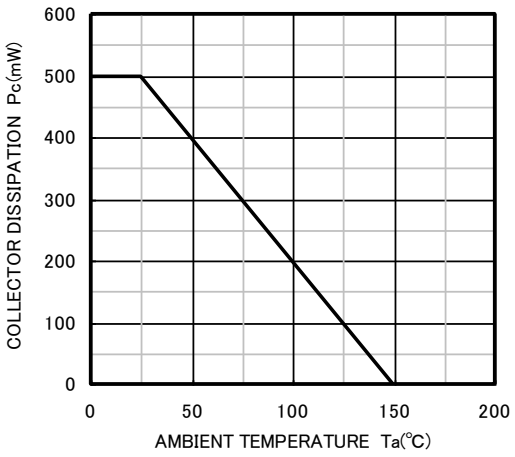



## ELECTRICAL CHARACTERISTICS(Ta=25℃)

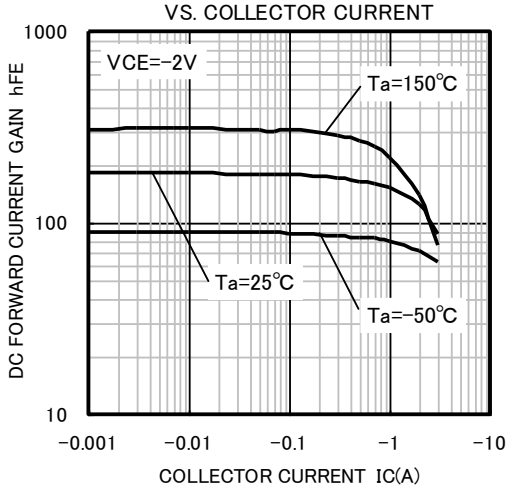
| SYMBOL | PARAMETER | TEST CONDITIONS | LIMITS | | | UNIT |
|---|---|---|---|---|---|---|
| | | | MIN | TYP | MAX | |
| $V_{(BR)CBO}$ | C to B breakdown voltage | $I_C$=−100μA, $I_E$=0mA | −80 | − | − | V |
| $V_{(BR)EBO}$ | E to B breakdown voltage | $I_E$=−100μA, $I_C$=0mA | −6 | − | − | V |
| $V_{(BR)CEO}$ | C to E breakdown voltage | $I_C$=−1mA, $R_{BE}$=∞ | −60 | − | − | V |
| $I_{CBO}$ | Collector cut off current | $V_{CB}$=−60V, $I_E$=0mA | − | − | −1.0 | μA |
| $I_{EBO}$ | Emitter cut off current | $V_{EB}$=−4V, $I_C$=0mA | − | − | −1.0 | μA |
| $h_{FE}$ | DC forward current gain | $V_{CE}$=−2V, $I_C$=−0.5A | 100 | − | 300 | − |
| $V_{CE(sat)}$ | C to E saturation voltage | $I_C$=−3A, $I_B$=−300mA | − | − | −0.5 | V |
| $f_T$ | Gain band width product | $V_{CE}$=−5V, $I_E$=100mA | − | 200 | − | MHz |
| Cob | Collector output capacitance | $V_{CB}$=−10V, $I_E$=0mA, f=1MHz | − | 25 | − | pF |

## TYPICIAL CHARACTERISTICS

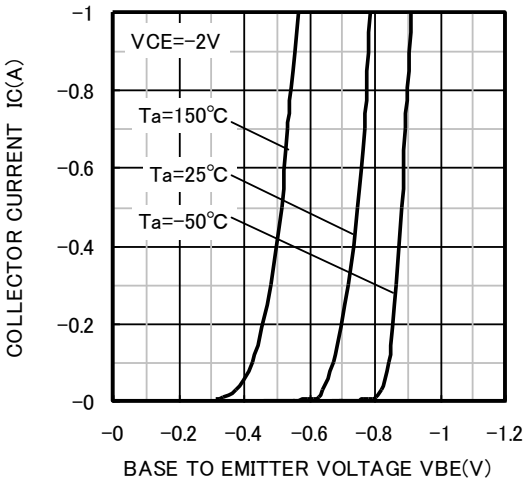
COLLECTOR DISSIPATION
VS. AMBIENT TEMPERATURE



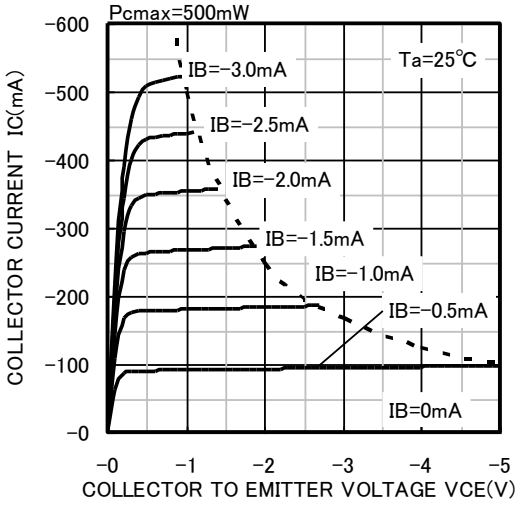

DC FORWARD CURRENT GAIN
VS. COLLECTOR CURRENT



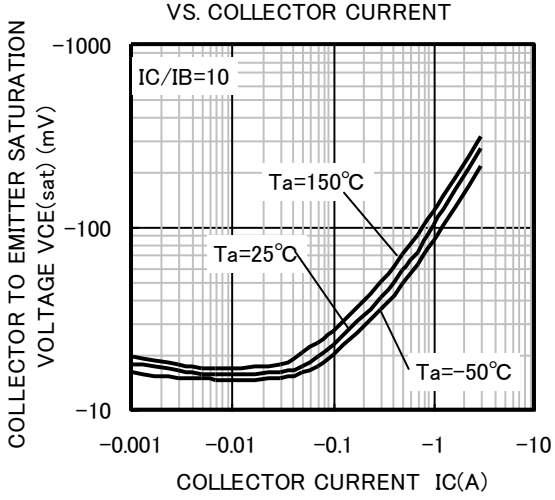

COMMON EMITTER TRANSFER



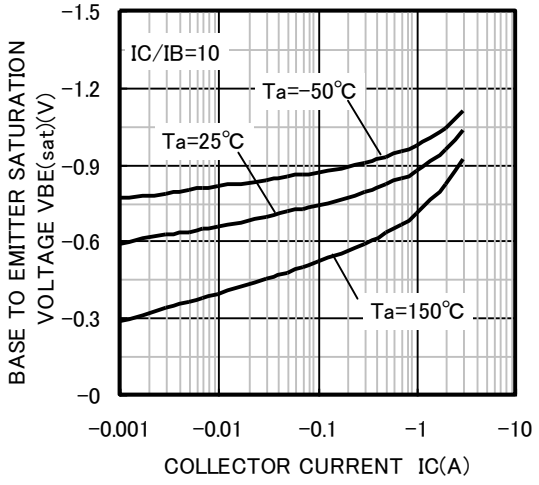

COMMON EMITTER OUTPUT



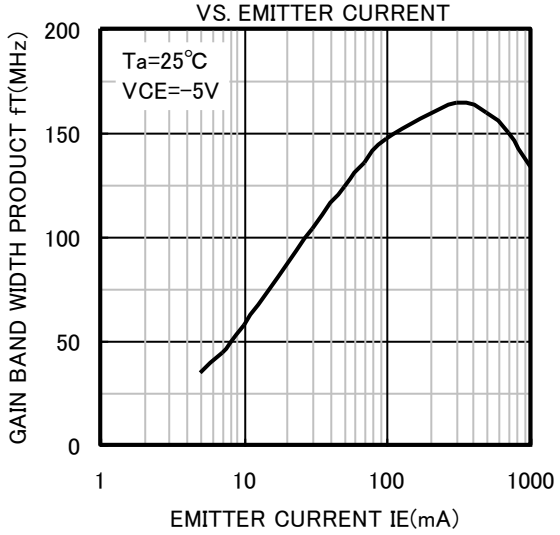

COLLECTOR TO EMITTER SATURATION VOLTAGE
VS. COLLECTOR CURRENT



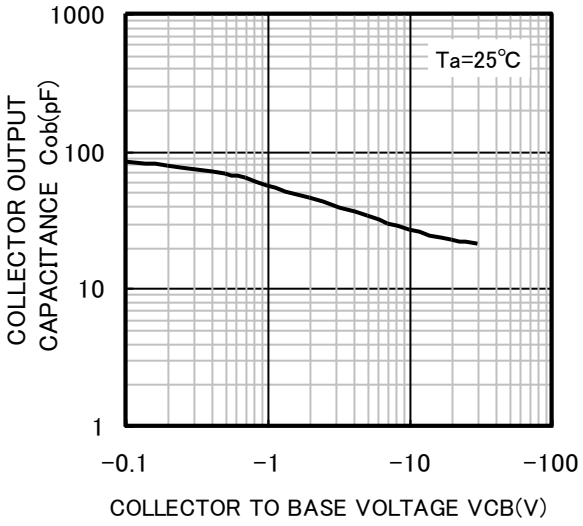

BASE TO EMITTER SATURATION VOLTAGE
VS. COLLECTOR CURRENT



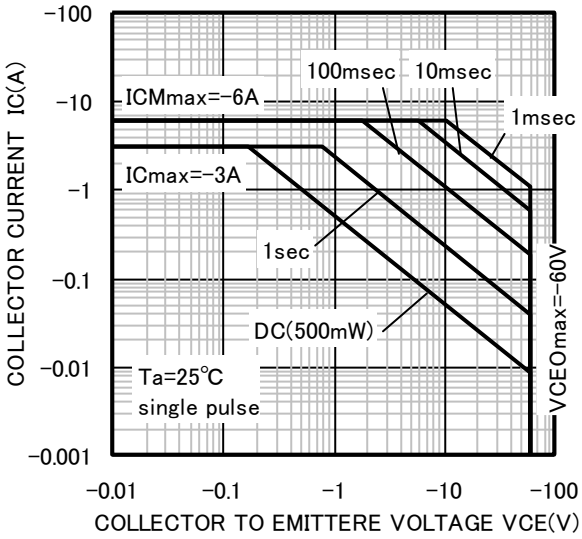
GAIN BAND WIDTH PRODUCT
VS. EMITTER CURRENT




COLLECTOR OUTPUT CAPACITANCE
VS. COLLECTOR TO BASE VOLTAGE




ASO



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