# INC6008AP1

FOR LOW FREQUENCY AMPLIFY APPLICATION
SILICON NPN EPITAXIAL TYPE

## DESCRIPTION

INC6008AP1 is a silicon NPN transistor.
It is designed with high voltage.

## FEATURE

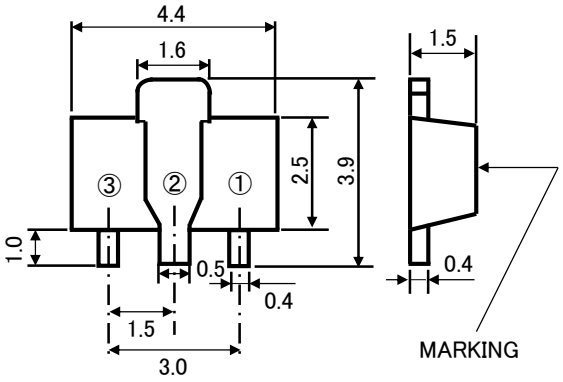
- Small package for easy mounting.
- High voltage $V_{CEO}$=140V
- High collector current Ic=1A
- Low voltage $V_{CE(sat)}$ = 0.7V(MAX)

## APPLICATION

Relay drive, Power supply

## OUTLINE DRAWING

UNIT : mm




TERMINAL CONNECTOR

①: BASE
②: COLLECTOR
③: EMITTER

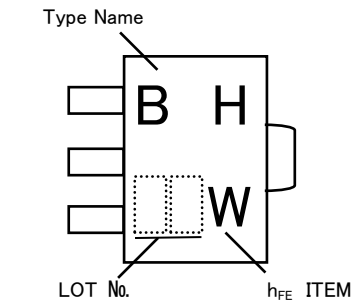
JEITA : SC-62
JEDEC : SOT-89

## MAXIMUM RATING (Ta=25℃)

| SYMBOL | PARAMETER | RATING | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector to Base voltage | 160 | V |
| $V_{EBO}$ | Emitter to Base voltage | 5 | V |
| $V_{CEO}$ | Collector to Emitter voltage | 140 | V |
| $I_C$ | Collector current | 1 | A |
| $P_C$ | Collector dissipation(Ta=25℃) | 0.5 | W |
| $P_C$ | Collector dissipation(Ta=25℃) *1 | 2 | W |
| $T_j$ | Junction temperature | +150 | ℃ |
| $T_{stg}$ | Storage temperature | −55～+150 | ℃ |

*1 Mounted on a glass ceramics board (46mm × 19mm × 0.8mm)

## MARKING

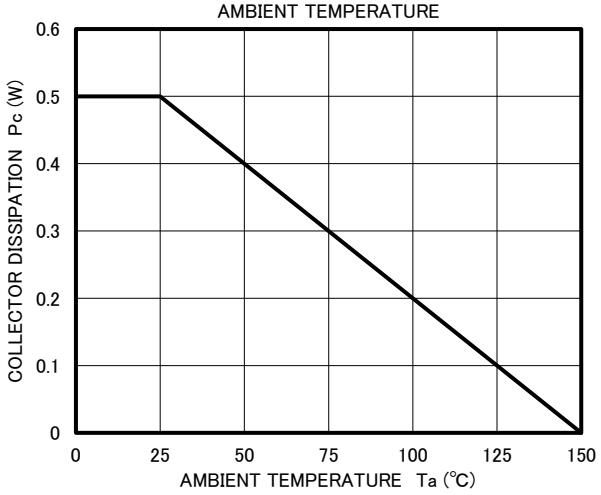



## ELECTRICAL CHARACTERISTICS (Ta=25℃)

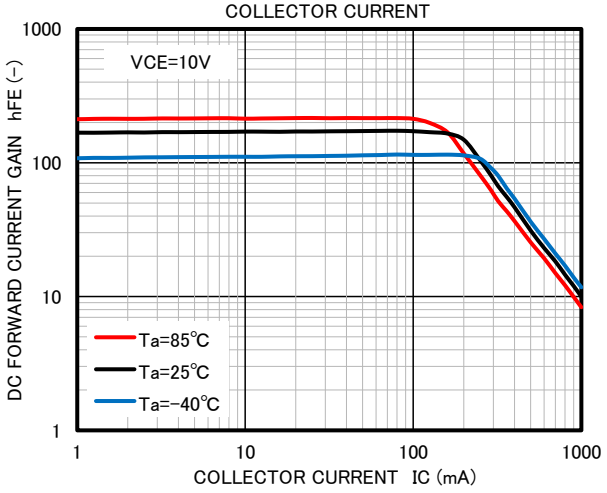
| SYMBOL | PARAMETER | TEST CONDITIONS | LIMITS | | | UNIT |
|---|---|---|---|---|---|---|
| | | | MIN | TYP | MAX | |
| $V_{(BR)CBO}$ | C to B breakdown voltage | $I_C$=100μA, $I_E$=0mA | 160 | − | − | V |
| $V_{(BR)EBO}$ | E to B breakdown voltage | $I_E$=100μA, $I_C$=0mA | 5 | − | − | V |
| $V_{(BR)CEO}$ | C to E breakdown voltage | $I_C$=10mA, $R_{BE}$=∞ | 140 | − | − | V |
| $I_{CBO}$ | Collector cut off current | $V_{CB}$=140V, $I_E$=0mA | − | − | 100 | nA |
| $I_{EBO}$ | Emitter cut off current | $V_{EB}$=4V, $I_C$=0mA | − | − | 100 | nA |
| $h_{FE1}$ | DC forward current gain1 | $V_{CE}$=10V, $I_C$=150mA | 100 | − | 300 | − |
| $h_{FE2}$ | DC forward current gain2 | $V_{CE}$=10V, $I_C$=1A | − | 10 | − | − |
| $V_{CE(sat)}$ | C to E saturation voltage | $I_C$=150mA, $I_B$=15mA | − | − | 0.7 | V |
| $V_{BE(sat)}$ | B to E saturation voltage | $I_C$=150mA, $I_B$=15mA | − | − | 1.1 | V |
| $f_T$ | Gain bandwidth product | $V_{CE}$=10V, $I_E$=−50mA | 100 | − | − | MHz |
| Cob | Collector output capacitance | $V_{CB}$=10V, $I_E$=0mA, f=1MHz | − | − | 15 | pF |

## TYPICAL CHARACTERISTICS

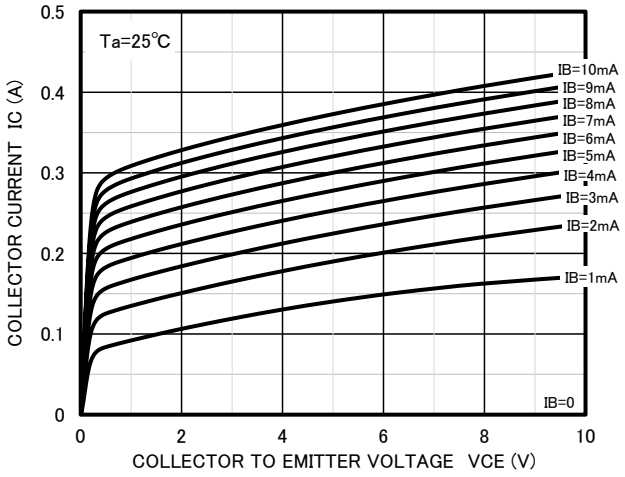
COLLECTOR DISSIPATION VS. AMBIENT TEMPERATURE



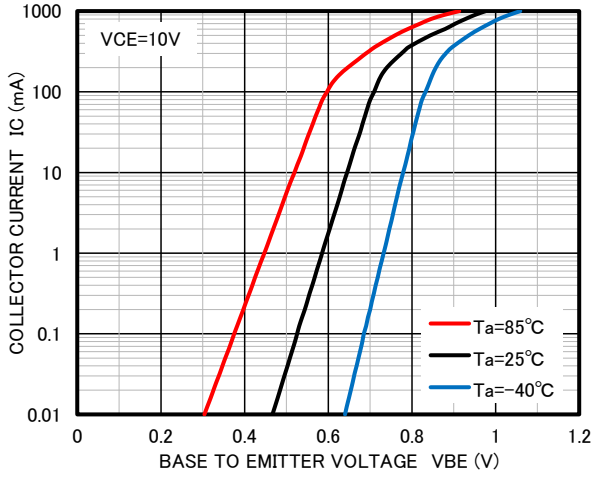

DC FORWARD CURRENT GAIN VS. COLLECTOR CURRENT



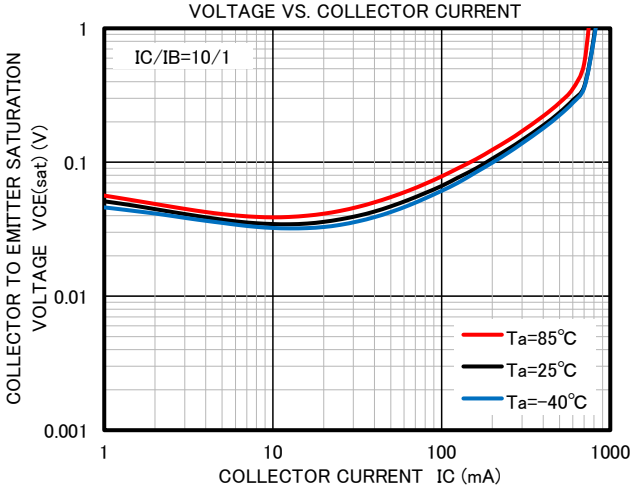

COMMON EMITTER OUTPUT



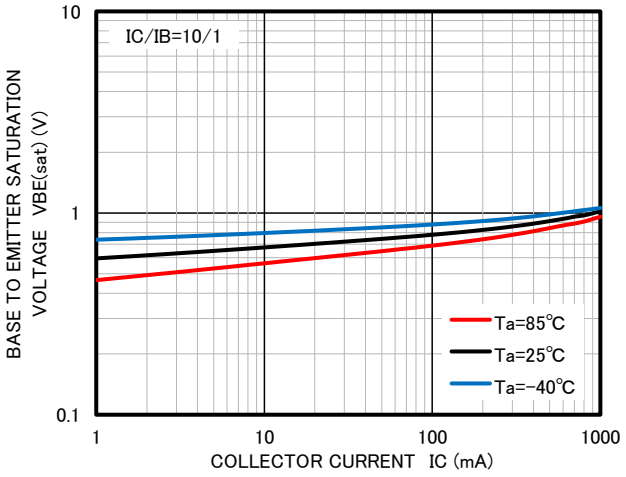

COMMON EMITTER TRANSFER



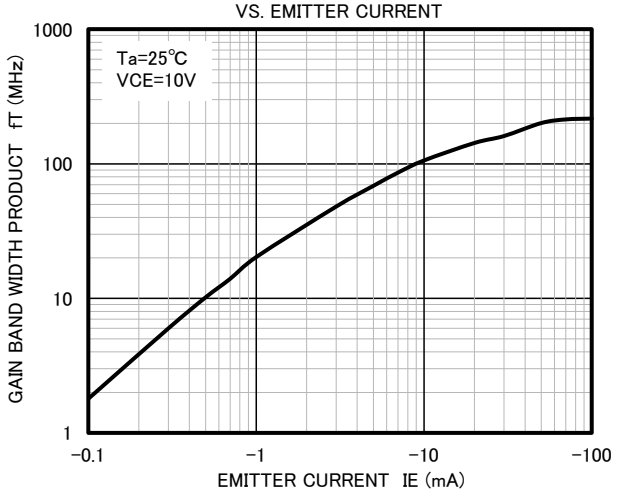

COLLECTOR TO EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT



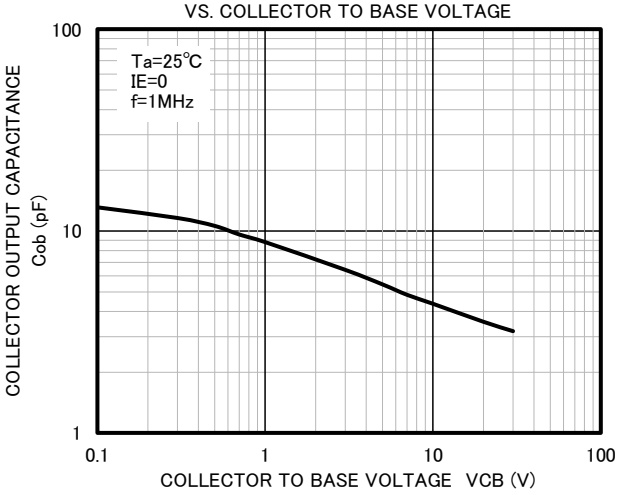

BASE TO EMITTER SATURATION VOLTAGE VS. COLLECTOR CURRENT



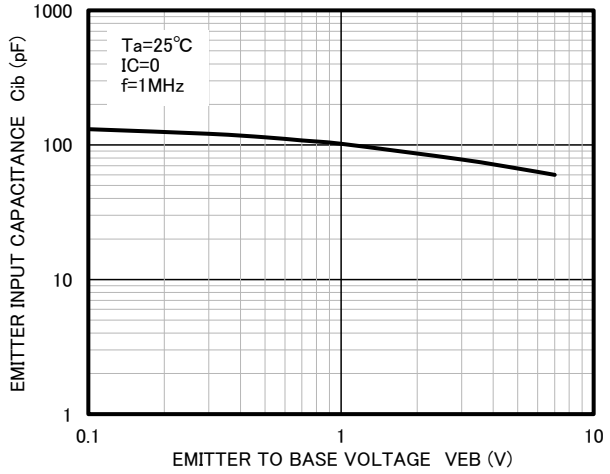
GAIN BAND WIDTH PRODUCT
VS. EMITTER CURRENT



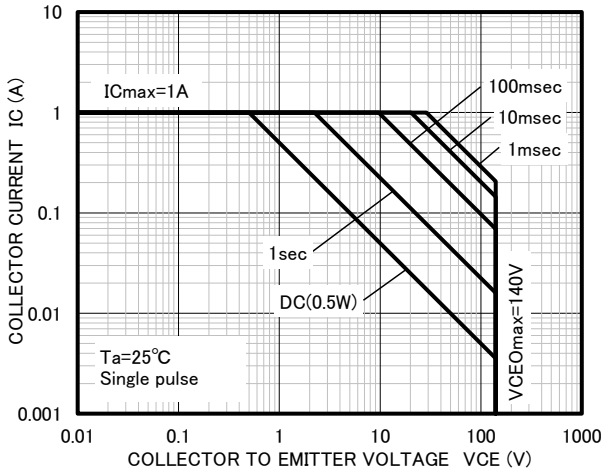

COLLECTOR OUTPUT CAPACITANCE
VS. COLLECTOR TO BASE VOLTAGE




EMITTER INPUT CAPACITANCE
VS. EMITTER TO BASE VOLTAGE




ASO



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