PRELIMINARY

Notice : This is not a final specification

Some parametric are subject to change.

# RT3C66M

Dual Transistor
For Differential Amplify Application
Silicon Npn Epitaxial Type

## DESCRIPTION

RT3C66M is a sillicon NPN epitaxial type dual transistor. It is designed for differential amplify application.

## FEATURE

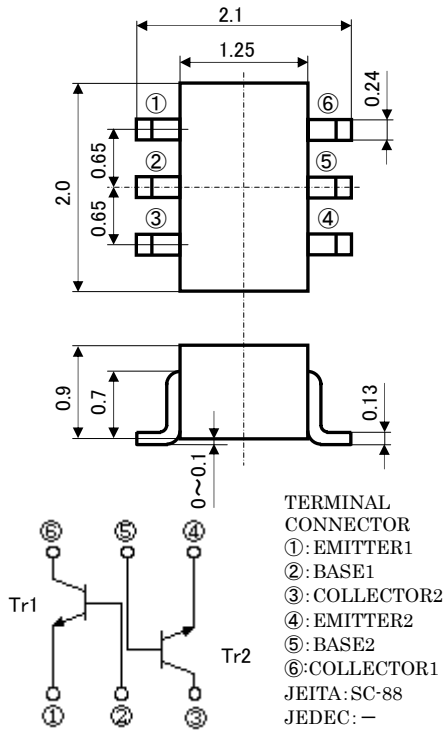
- High Vceo Vceo=160V
- Good two elements characteristics
  $h_{FE1}/h_{FE2}$=1.0 typ
  $|V_{BE1}-V_{BE2}|$ =2mV typ

## APPLICATION

For differential amplify application.

## OUTLINE DRAWING

Unit : mm

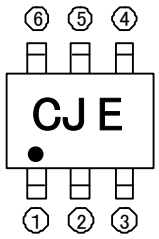



TERMINAL CONNECTOR
①: EMITTER1
②: BASE1
③: COLLECTOR2
④: EMITTER2
⑤: BASE2
⑥: COLLECTOR1
JEITA : SC-88
JEDEC : —

## MAXIMUM RATING (Ta=25℃) (Tr1 , Tr2.)

| SYMBOL | PARAMETER | RATING | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector to Base voltage | 180 | V |
| $V_{EBO}$ | Emitter to Base voltage | 6 | V |
| $V_{CEO}$ | Collector to Emitter voltage | 160 | V |
| $I_{CM}$ | Peak collector current | 200 | mA |
| $I_C$ | Collector current | 100 | mA |
| $P_T$ | Total allowance dissipation(Ta=25℃) | 200 | mW |
| $T_j$ | Junction temperature | +150 | ℃ |
| $T_{stg}$ | Storage temperature | −55～+150 | ℃ |

## MARKING



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## ELECTRICAL CHARACTERISTICS (Ta=25℃) (Tr1, Tr2.)

| Symbol | Parameter | Test conditions | Limits | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | |
| $V_{(BR)CBO}$ | C to B break down voltage | $I_C$=100μA, $I_E$=0A | 180 | – | – | V |
| $V_{(BR)EBO}$ | E to B break down voltage | $I_E$=10μA, $I_C$=0A | 6 | – | – | V |
| $V_{(BR)CEO}$ | C to E break down voltage | $I_C$=1mA, $R_{BE}$=∞ | 160 | – | – | V |
| $I_{CBO}$ | Collector cut off current | $V_{CB}$=120V, $I_E$=0A | – | – | 100 | nA |
| $I_{EBO}$ | Emitter cut off current | $V_{EB}$=4V, $I_C$=0A | – | – | 100 | nA |
| hFE1 | DC forward current gain1 | VCE=5V, $I_C$=1mA | 72 | – | – | – |
| hFE2 | DC forward current gain2 | VCE=5V, $I_C$=10mA | 72 | – | 330 | – |
| hFE3 | DC forward current gain3 | VCE=5V, $I_C$=50mA | 27 | – | – | – |
| VCE(sat)1 | C to E saturation voltage1 | $I_C$=10mA, $I_B$=1mA | – | – | 0.15 | V |
| VCE(sat)2 | C to E saturation voltage2 | $I_C$=50mA, $I_B$=5mA | – | – | 0.2 | V |
| VBE(sat)1 | B to E saturation voltage1 | $I_C$=10mA, $I_B$=1mA | – | – | 1.0 | V |
| VBE(sat)2 | B to E saturation voltage2 | $I_C$=50mA, $I_B$=5mA | – | – | 1.0 | V |
| \| VBE1-VBE2 \| (※VBE1:Tr1,VBE2:Tr2) | B-E voltage differential | VCE=5V, $I_C$=1mA | – | 2 | 10 | mV |
| hFE1/hFE2 (※hFE1:Tr1,hFE2:Tr2) | DC forward current gain raito | VCE=5V, $I_C$=1mA | 0.9 | 1.0 | 1.1 | – |
| fT | Gain bandwidth product | VCE=10V, $I_E$=-10mA | 100 | – | 300 | MHz |
| Cob | Collector output capacitance | VCB=10V, $I_E$=0A, f=1MHz | – | 1.7 | 6 | pF |
| Cib | Emitter input capacitance | VEB=0.5V, I c=0A, f=1MHz | – | – | 20 | pF |

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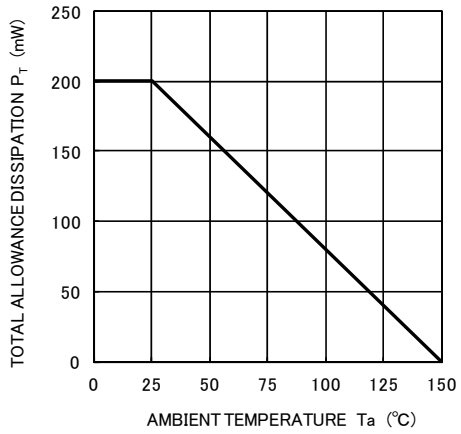
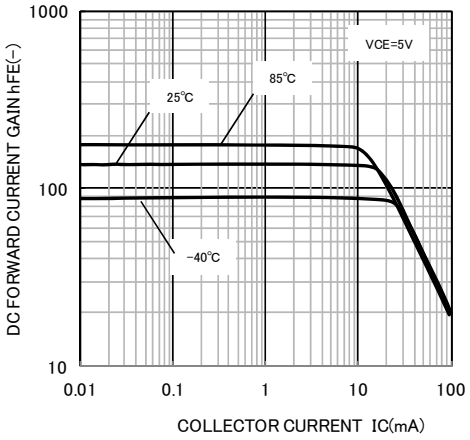
## TYPICAL CHARACTERISTICS (Tr1,Tr2.)

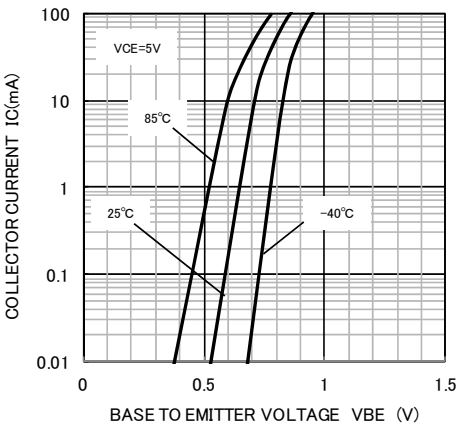
TOTAL ALLOWANCE DISSIPATION–
AMBIENT TEMPERATURE



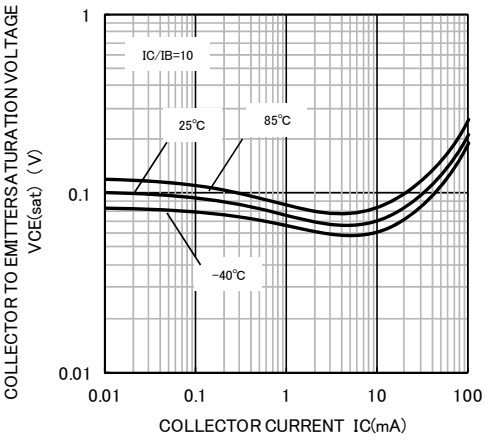

DC FORWARD CURRENT GAIN VS.
COLLECTOR CURRENT



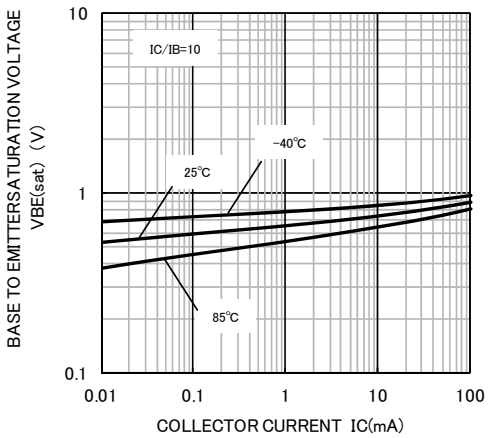

COMMON EMITTER TRANSFER




COLLECTOR TO EMITTERSATURATION
VOLTAGE VS. COLLECTOR CURRENT




BASE TO EMITTERSATURATION VOLTAGE
VS. COLLECTOR CURRENT



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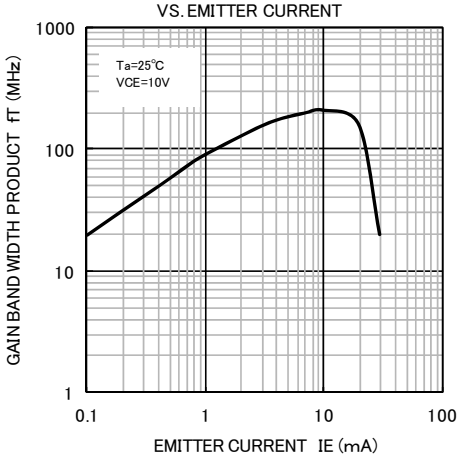
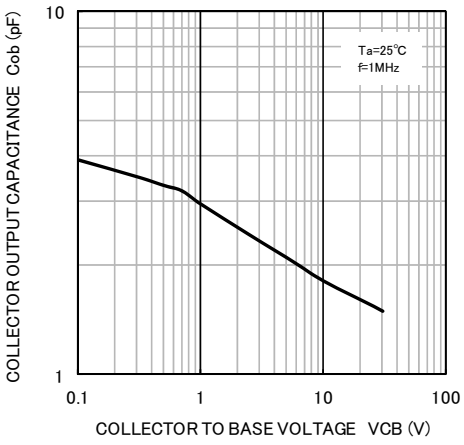
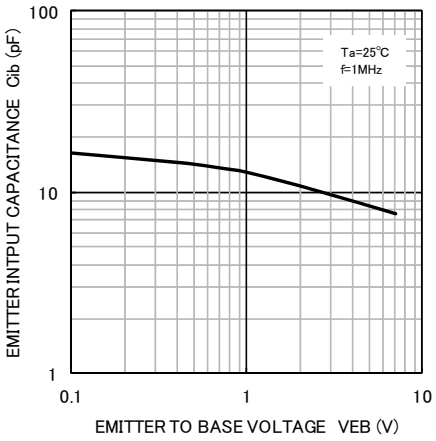
GAIN BAND WIDTH PRODUCT
VS. EMITTER CURRENT




COLLECTOR OUTPUT CAPACITANCE
VS. COLLECTOR TO BASE VOLTAGE




EMITTER INPUT CAPACITANCE
VS. EMITTER TO BASE VOLTAGE



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Oct.2013