# RT1P440X SERIES

〈Transistor〉

Transistor With Resistor

For Switching Application

Silicon PNP Epitaxial Type

## DESCRIPTION

RT1P440X is a one chip transistor
with built-in bias resistor,NPN type is RT1N440X.

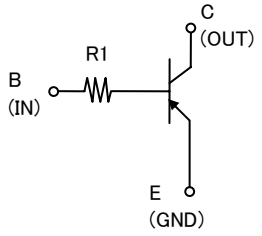
## FEATURE

・Built-in bias resistor (R1=47kΩ).

## APPLICATION

. Inverted circuit,switching circuit,interface circuit,driver circuit.

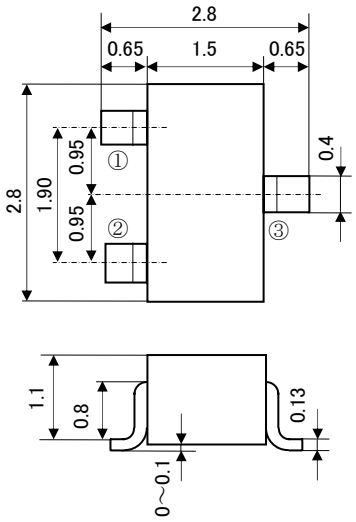
### Equivalent circuit




## OUTLINE DRAWING

UNIT : mm

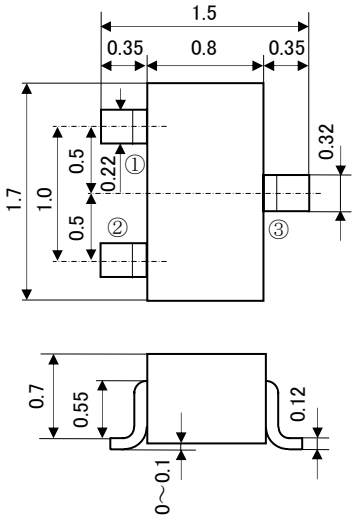
RT1P440C




JEITA : SC-59
JEDEC : Similar to TO-236

Terminal Connector
①:Base
②:Emitter
③:Collector

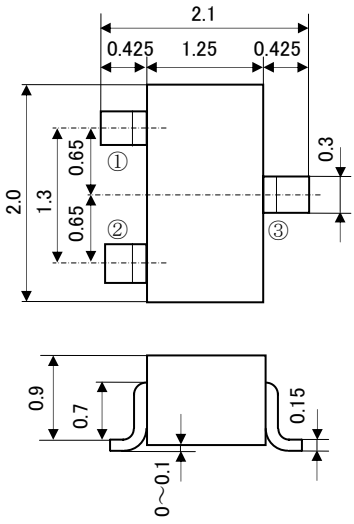
RT1P440U




JEITA : SC-75A
JEDEC : —

Terminal Connector
①:Base
②:Emitter
③:Collector

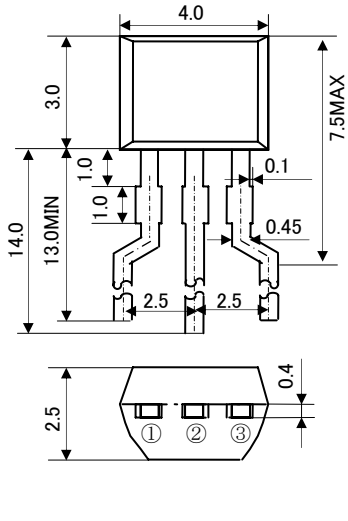
RT1P440M




JEITA : SC-70
JEDEC : —

Terminal Connector
①:Base
②:Emitter
③:Collector

RT1P440S




JEITA : —
JEDEC : —

Terminal Connector
①:Emitter
②:Collector
③:Base

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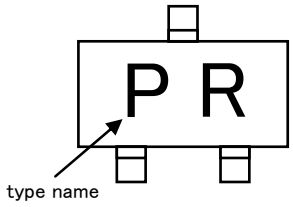
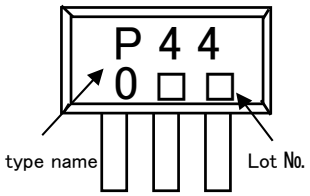
## MARKING

| RT1P440C<br>RT1P440M<br>RT1P440U | RT1P440S |
|---|---|
|  |  |

## MAXIMUM RATING (Ta=25℃)

| SYMBOL | PARAMETER | RATING | | | | UNIT |
|---|---|---|---|---|---|---|
| | | RT1P440U | RT1P440M | RT1P440C | RT1P440S | |
| $V_{CBO}$ | Collector to Base voltage | −50 | | | | V |
| $V_{EBO}$ | Emitter to Base voltage | −6 | | | | V |
| $V_{CEO}$ | Collector to Emitter voltage | −50 | | | | V |
| $I_C$ | Collector current | −100 | | | | mA |
| $I_{CM}$ | Peak Collector current | −200 | | | | mA |
| $P_C$ | Collector dissipation(Ta=25℃) | 150 | 200 | | 450 | mW |
| Tj | Junction temperature | +150 | | | | ℃ |
| Tstg | Storage temperature | −55～+150 | | | | ℃ |

## ELECTRICAL CHARACTERISTICS (Ta=25℃)

| SYMBOL | PARAMETER | TEST CONDITION | LIMIT | | | UNIT |
|---|---|---|---|---|---|---|
| | | | MIN | TYP | MAX | |
| $V_{(BR)CEO}$ | C to E break down voltage | $I_C$=−100μA, $R_{BE}$=∞ | −50 | — | — | V |
| $I_{CBO}$ | Collector cut off current | $V_{CB}$=−50V, $I_E$=0 | — | — | −0.1 | μA |
| $I_{EBO}$ | Emitter cut off current | $V_{EB}$=−5V, $I_C$=0 | — | — | −0.1 | μA |
| $h_{FE}$ | DC forward current gain | $V_{CE}$=−5V, $I_C$=−1mA | 100 | — | — | — |
| $V_{CE(sat)}$ | C to E saturation voltage | $I_C$=−10mA, $I_B$=−0.5mA | — | — | −0.3 | V |
| $R_1$ | Input resistor | — | 33 | 47 | 61 | kΩ |
| $f_T$ | Gain band width product | $V_{CE}$=−6V, $I_E$=10mA | — | 150 | — | MHz |

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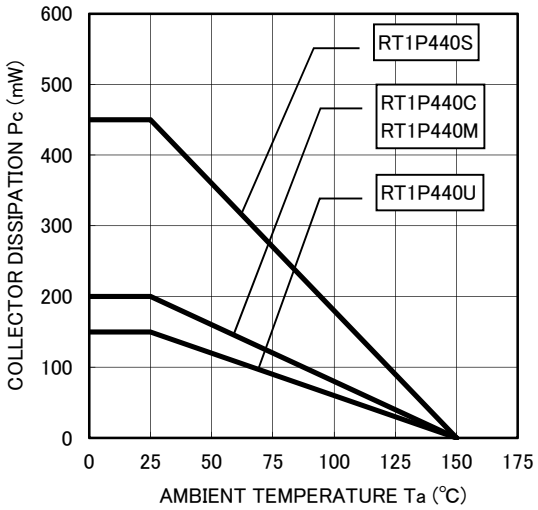
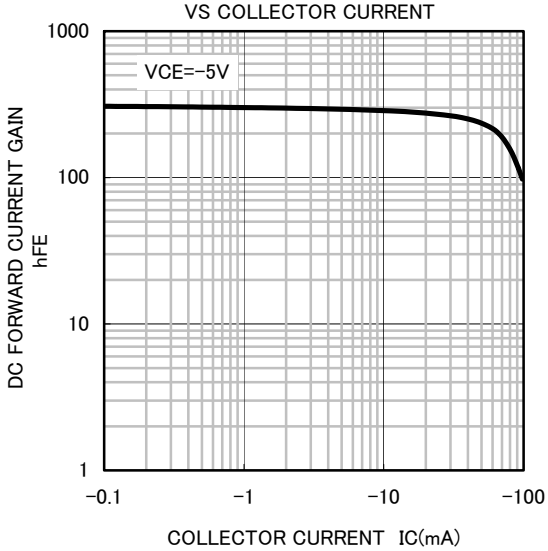
## TYPICAL CHARACTERISTICS (Ta=25℃)

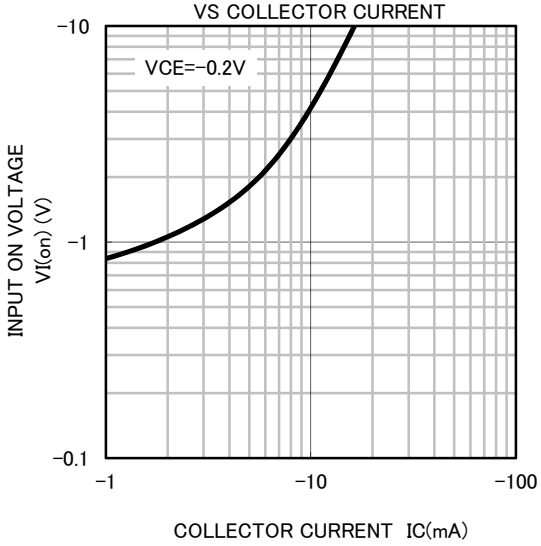
COLLECTOR DISSIPATION
VS AMBIENT TEMPERATURE



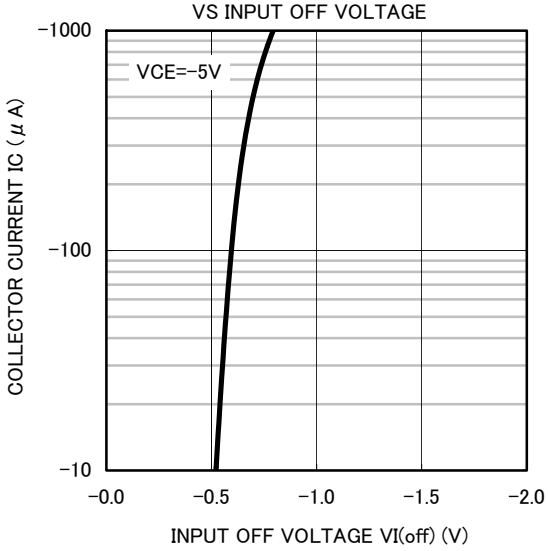

DC FORWARD CURRENT GAIN
VS COLLECTOR CURRENT



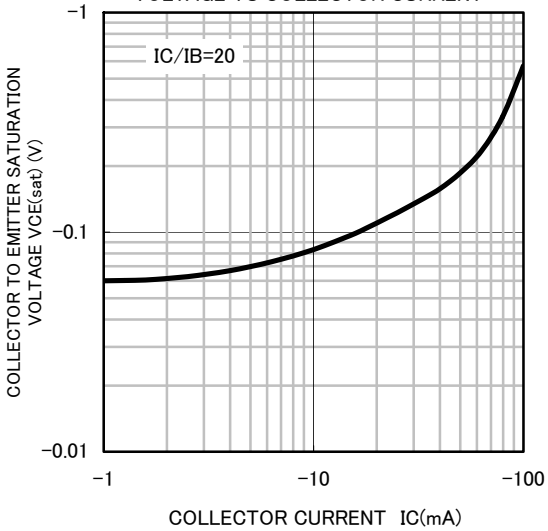

INPUT ON VOLTAGE
VS COLLECTOR CURRENT




COLLECTOR CURRENT
VS INPUT OFF VOLTAGE




COLLECTOR TO EMITTER SATURATION
VOLTAGE VS COLLECTOR CURRENT



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