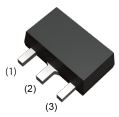
# 2SCR372P

Middle Power Driver(120V/700mA) Datasheet

| Parameter | Value |
|---|---|
| $V_{CEO}$ | 120V |
| $I_C$ | 0.7A |

## ●Outline

SOT-89
SC-62

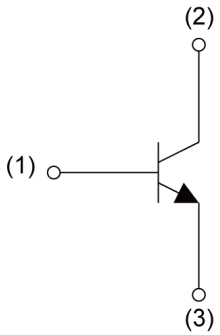



MPT3

## ●Features

Low saturation voltage
$V_{CE(sat)}$=300mV(Max.)
($I_C$/$I_B$=500mA/50mA)

## ●Inner circuit




(1) Base
(2) Collector
(3) Emitter

## ●Application

LOW FREQUENCY AMPLIFIER

## ●Packaging specifications

| Part No. | Package | Package size | Taping code | Reel size (mm) | Tape width (mm) | Basic ordering unit.(pcs) | Marking |
|---|---|---|---|---|---|---|---|
| 2SCR372P | SOT-89 (MPT3) | 4540 | T100 | 180 | 12 | 1000 | GX |

## ●Absolute maximum ratings ($T_a$ = 25°C)

| Parameter | Symbol | Values | Unit |
|---|---|---|---|
| Collector-base voltage | $V_{CBO}$ | 120 | V |
| Collector-emitter voltage | $V_{CEO}$ | 120 | V |
| Emitter-base voltage | $V_{EBO}$ | 6 | V |
| Collector current | $I_C$ | 0.7 | A |
| | $I_{CP}$*1 | 1.4 | A |
| Power dissipation | $P_D$*2 | 0.5 | W |
| | $P_D$*3 | 2.0 | W |
| Junction temperature | $T_j$ | 150 | ℃ |
| Range of storage temperature | $T_{stg}$ | -55 to +150 | ℃ |

## ●Electrical characteristics ($T_a$ = 25°C)

| Parameter | Symbol | Conditions | Values | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| Collector-base breakdown voltage | $BV_{CBO}$ | $I_C$ = 100μA | 120 | - | - | V |
| Collector-emitter breakdown voltage | $BV_{CEO}$ | $I_C$ = 1mA | 120 | - | - | V |
| Emitter-base breakdown voltage | $BV_{EBO}$ | $I_E$ = 100μA | 6 | - | - | V |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$ = 100V | - | - | 1.0 | μA |
| Emitter cut-off current | $I_{EBO}$ | $V_{EB}$ = 4V | - | - | 1.0 | μA |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C$ = 500mA, $I_B$ = 50mA | - | 100 | 300 | mV |
| DC current gain | $h_{FE}$ | $V_{CE}$ = 5V, $I_C$ = 100mA | 120 | - | 390 | - |
| Transition frequency | $f_T$ | $V_{CE}$ = 5V, $I_E$ = -300mA, f = 100MHz | - | 220 | - | MHz |
| Output capacitance | $C_{ob}$ | $V_{CB}$ = 10V, $I_E$ = 0A, f = 1MHz | - | 8 | - | pF |

hFE values are calssified as follows :

| rank | Q | R | - | - | - |
|---|---|---|---|---|---|
| $h_{FE}$ | 120-270 | 180-390 | - | - | - |

*1 Pw=10ms, Single Pulse

*2 Each terminal mounted on a reference land.

*3 Mounted on a 40×40×0.7mm ceramic board.

## ●Electrical characteristic curves($T_a$ = 25°C)

Fig.1 Ground Emitter Propagation Characteristics

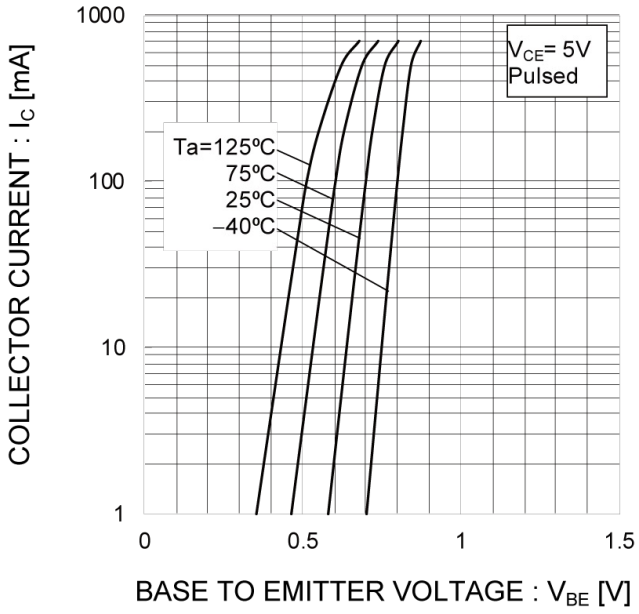



Fig.2 Typical Output Characteristics

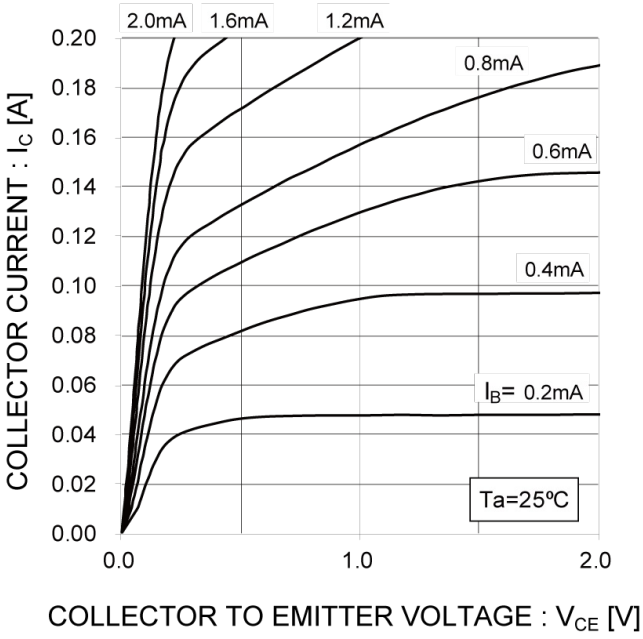



Fig.3 DC Current Gain vs. Collector Current (I)

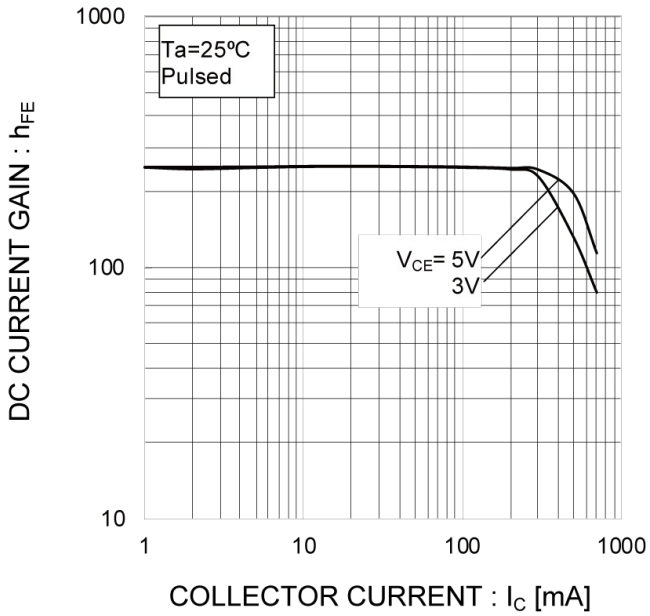
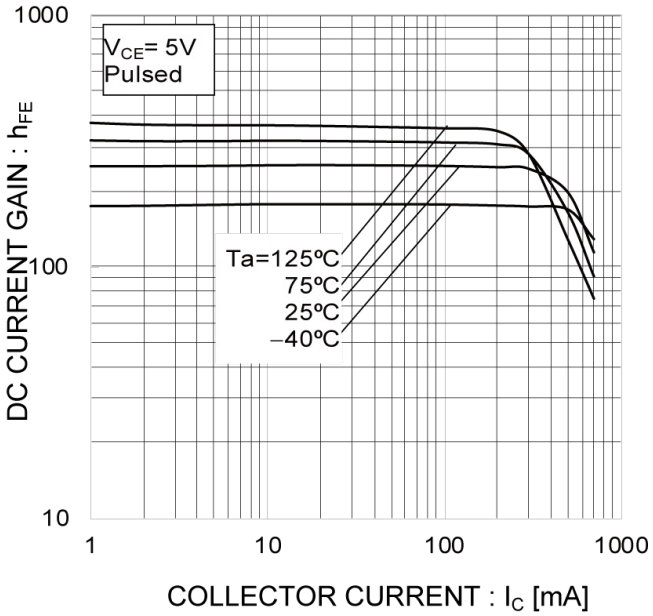



Fig.4 DC Current Gain vs. Collector Current (II)



## ●Electrical characteristic curves($T_a$ = 25°C)

Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

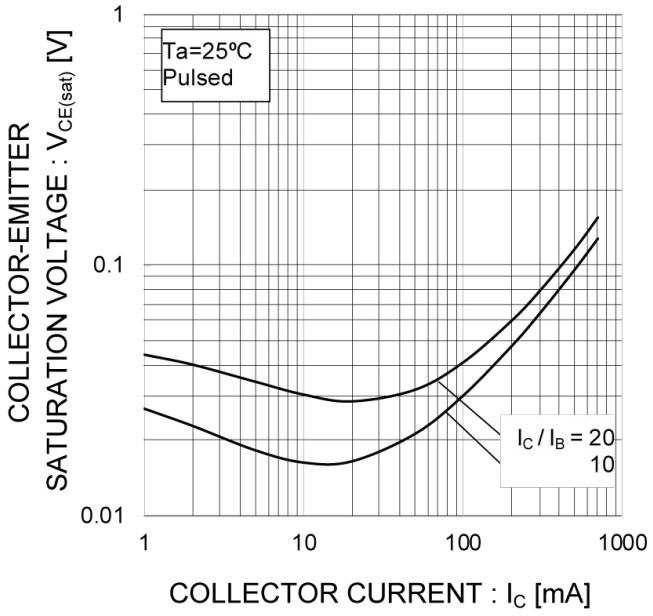



Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

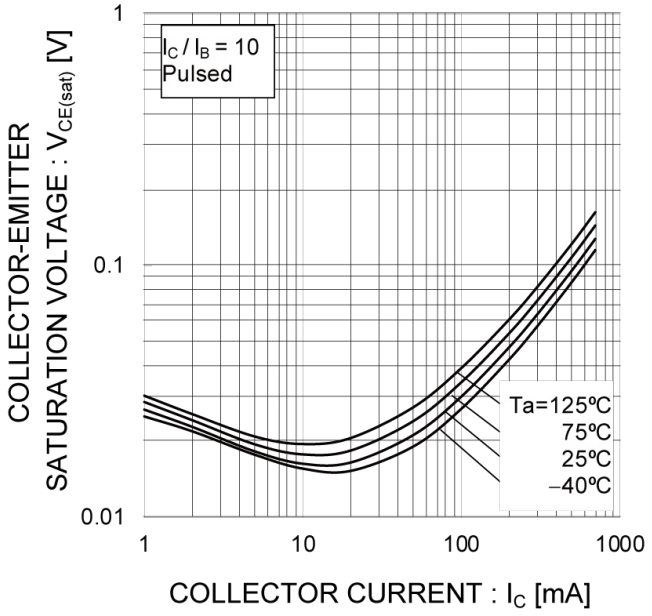



Fig.7 Base-Emitter Saturation Voltage vs. Collector Current

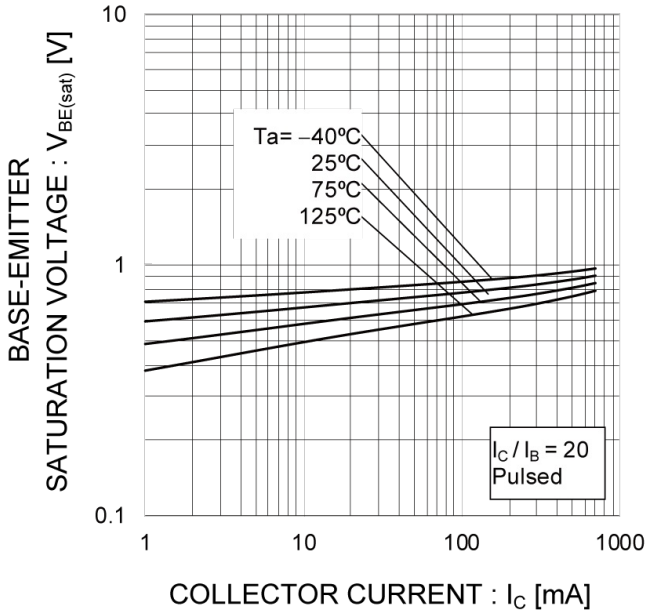
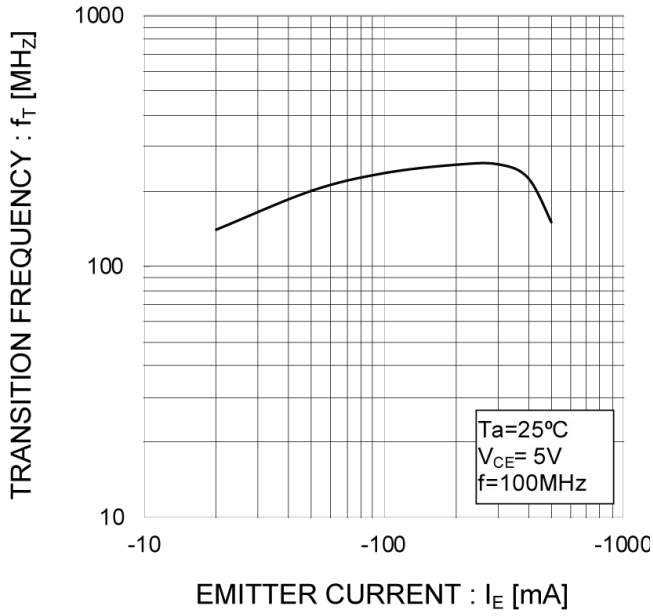



Fig.8 Gain Bandwidth Product vs. Emitter Current



## ●Electrical characteristic curves($T_a$ = 25°C)

Fig.9 Emitter input capacitance vs. Emitter-Base Voltage
Collector output capacitance vs. Collector-Base Voltage

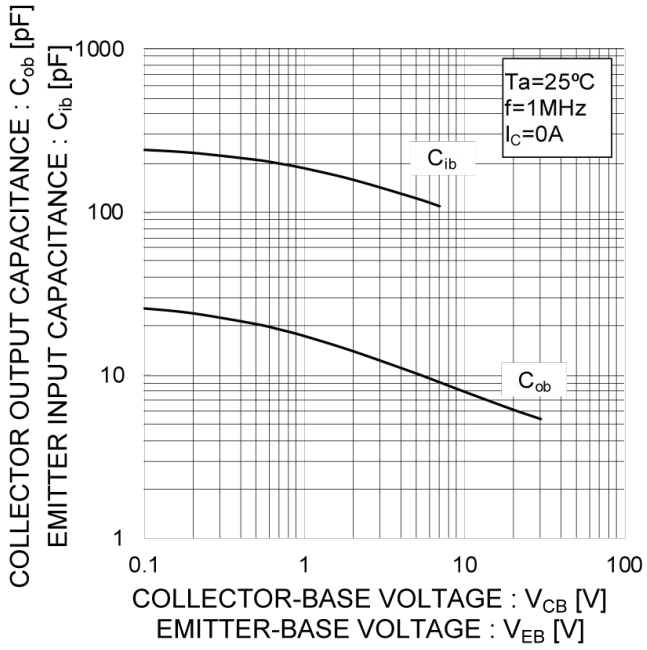
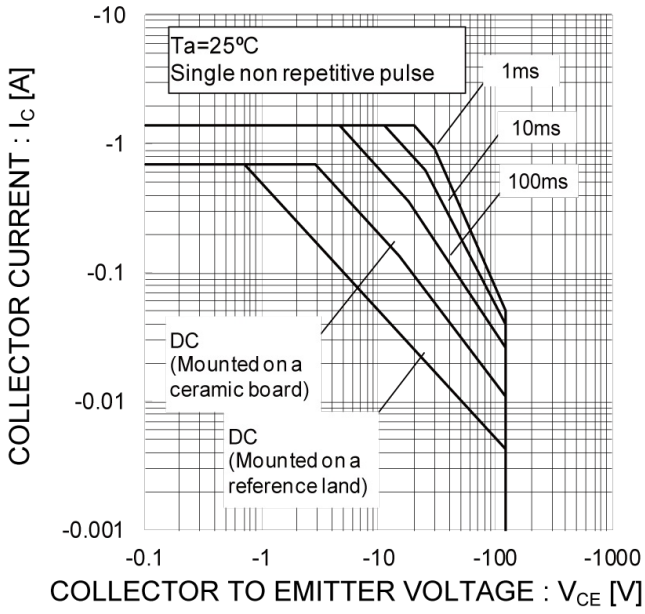
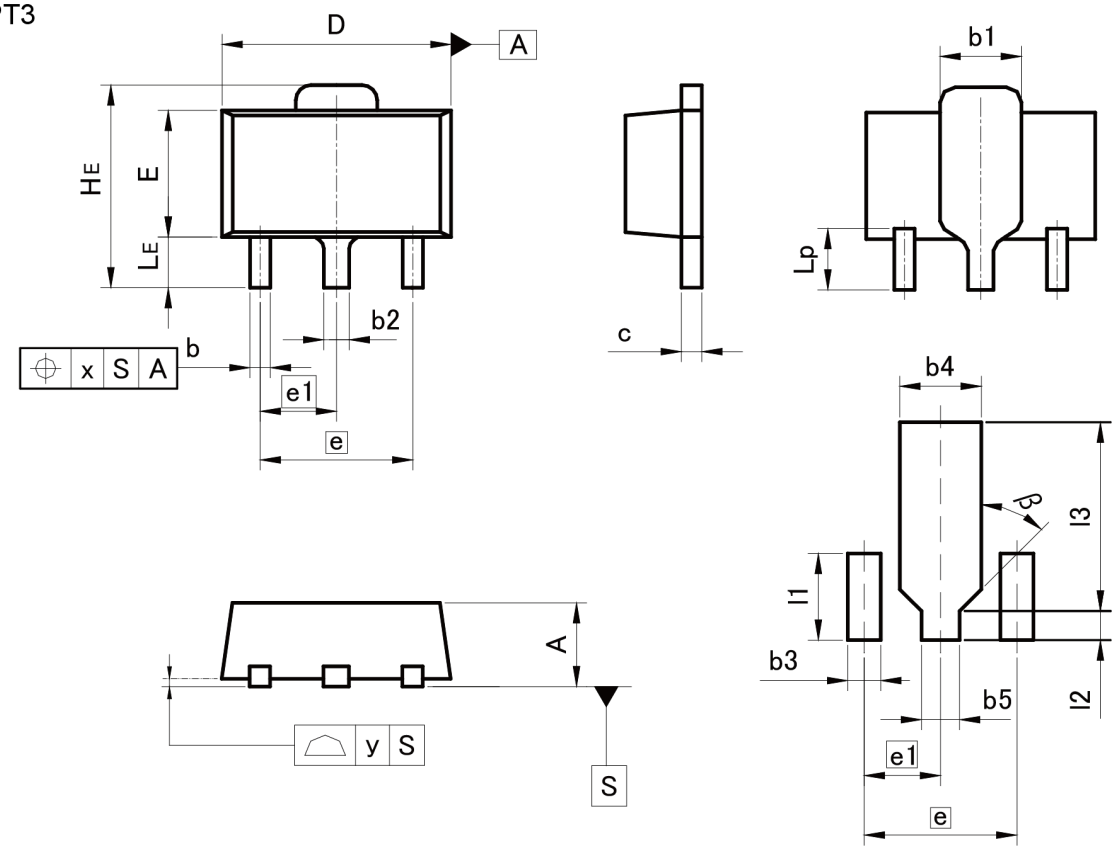



Fig.10 Safe Operating Area



## ●Dimensions

MPT3




Pattern of terminal position areas
[Not a recommended pattern of soldering pads]

| DIM | MILIMETERS | | INCHES | |
|---|---|---|---|---|
| | MIN | MAX | MIN | MAX |
| A | 1.40 | 1.50 | 0.055 | 0.059 |
| b | 0.30 | 0.50 | 0.012 | 0.020 |
| b1 | 1.50 | 1.70 | 0.059 | 0.067 |
| b2 | 0.40 | 0.60 | 0.016 | 0.024 |
| c | 0.35 | 0.50 | 0.014 | 0.020 |
| D | 4.40 | 4.70 | 0.173 | 0.185 |
| E | 2.40 | 2.70 | 0.094 | 0.106 |
| e | 3.00 | | 0.118 | |
| e1 | 1.50 | | 0.059 | |
| HE | 3.70 | 4.30 | 0.146 | 0.169 |
| LE | 0.80 | 1.20 | 0.031 | 0.047 |
| Lp | 1.01 | 1.41 | 0.040 | 0.056 |
| x | – | 0.15 | – | 0.006 |
| y | – | 0.10 | – | 0.004 |

| DIM | MILIMETERS | | INCHES | |
|---|---|---|---|---|
| | MIN | MAX | MIN | MAX |
| b3 | – | 0.65 | – | 0.026 |
| b4 | – | 1.70 | – | 0.067 |
| b5 | – | 0.75 | – | 0.030 |
| l1 | – | 1.71 | – | 0.067 |
| l2 | – | 0.58 | – | 0.023 |
| l3 | – | 3.72 | – | 0.146 |
| β | 45° | | 45° | |

Dimension in mm/inches

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