# 2SC2411K

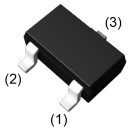
Medium Power Transistor (32V, 500mA)

Datasheet

| Parameter | Value |
|---|---|
| $V_{CEO}$ | 32V |
| $I_C$ | 500mA |

## ●Outline

SMT3




2SC2411K

SOT-346

## ●Features

1) High $I_{CMAX}$

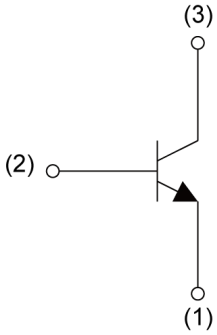
$I_{CMAX}$=0.5A

2)Low $V_{CE(sat)}$

Optimal for low voltage operation.

3)Complements the 2SA1036K.

## ●Inner circuit




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

## ●Application

DRIVING CIRCUIT, LOW FREQUENCY AMPLIFIER

## ●Packaging specifications

| Part No. | Package | Package size | Taping code | Reel size (mm) | Tape width (mm) | Basic ordering unit.(pcs) | Marking |
|---|---|---|---|---|---|---|---|
| 2SC2411K | SMT3 | 2928 | T146 | 180 | 8 | 3000 | C |


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

| Parameter | Symbol | Values | Unit |
|---|---|---|---|
| Collector-base voltage | $V_{CBO}$ | 40 | V |
| Collector-emitter voltage | $V_{CEO}$ | 32 | V |
| Emitter-base voltage | $V_{EBO}$ | 5 | V |
| Collector current | $I_C$ | 500 | mA |
| Power dissipation | $P_D$*1 | 200 | mW |
| 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 | 40 | - | - | V |
| Collector-emitter breakdown voltage | $BV_{CEO}$ | $I_C$ = 1mA | 32 | - | - | V |
| Emitter-base breakdown voltage | $BV_{EBO}$ | $I_E$ = 100μA | 5 | - | - | V |
| Collector cut-off current | $I_{CBO}$ | $V_{CB}$ = 20V | - | - | 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 | - | - | 600 | mV |
| DC current gain | $h_{FE}$ | $V_{CE}$ = 3V, $I_C$ = 100mA | 82 | - | 390 | - |
| Transition frequency | $f_T$ | $V_{CE}$ = 5V, $I_E$ = -20mA, f = 100MHz | - | 250 | - | MHz |
| Output capacitance | $C_{ob}$ | $V_{CB}$ = 10V, $I_E$ = 0A, f = 1MHz | - | 6.5 | - | pF |

hFE values are calssified as follows :

| rank | P | Q | R | - | - |
|---|---|---|---|---|---|
| $h_{FE}$ | 82-180 | 120-270 | 180-390 | - | - |

*1 Each terminal mounted on a reference land


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

Fig.1 Grounded emitter propagation characteristics

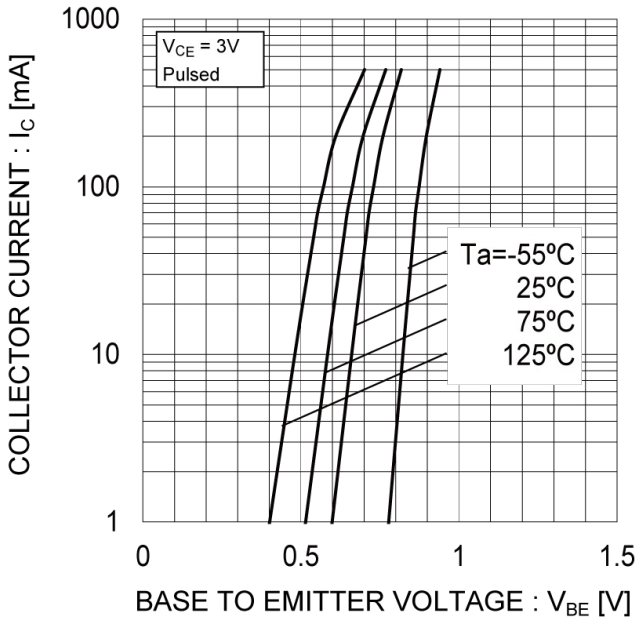



Fig.2 Typical output characteristics

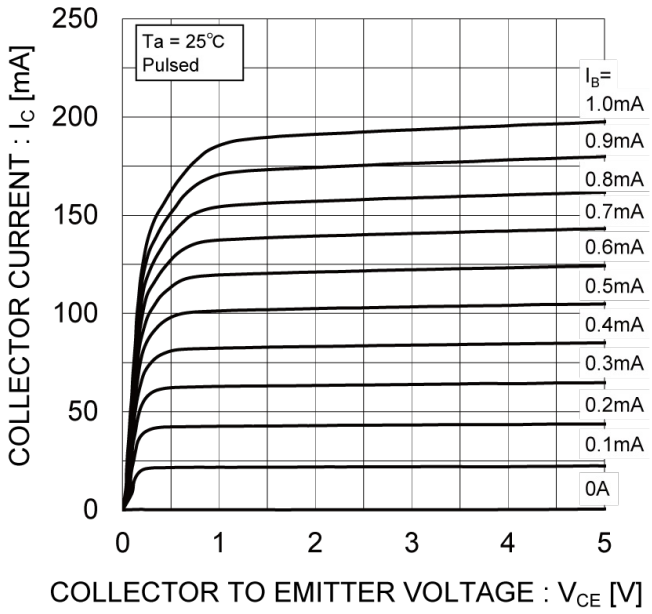



Fig.3 DC current gain vs.collector current(I)

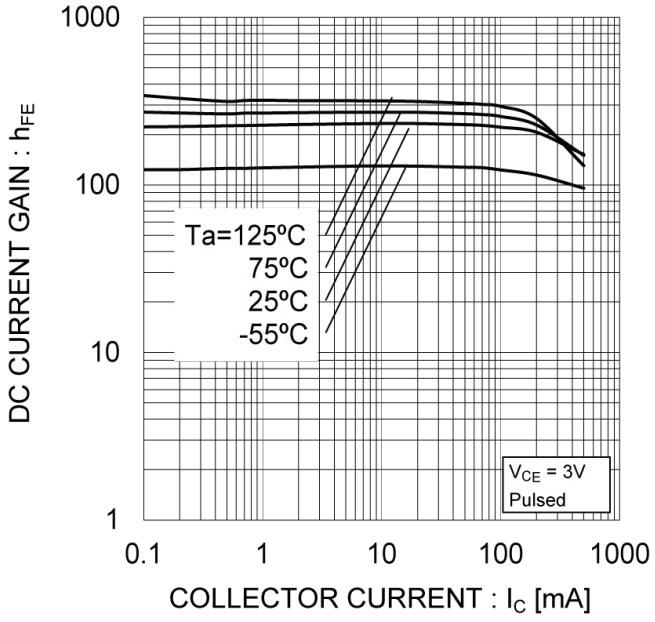
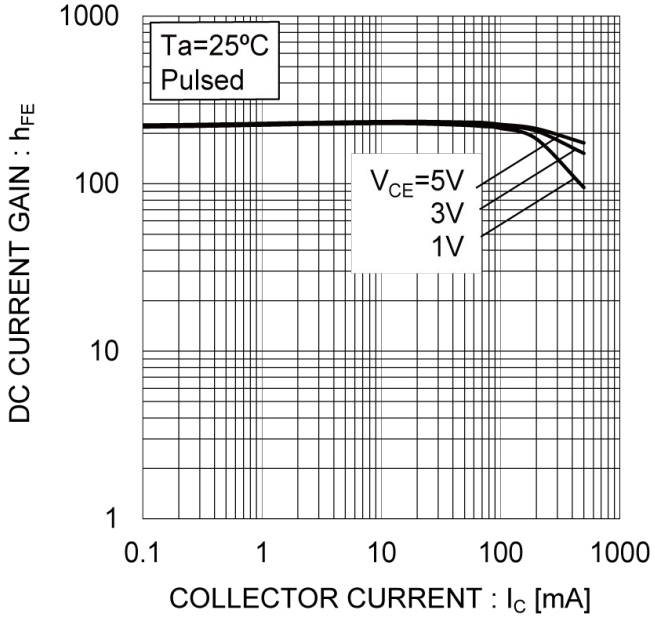



Fig.4 DC current gain vs.collector current(II)





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

Fig.5 Collector-emitter saturation voltage vs. collector current(I)

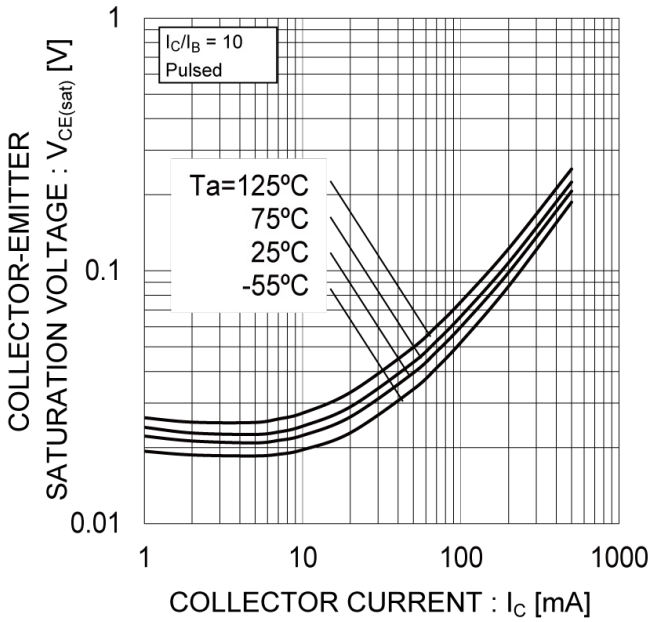



Fig.6 Collector-emitter saturation voltage vs. collector current(II)

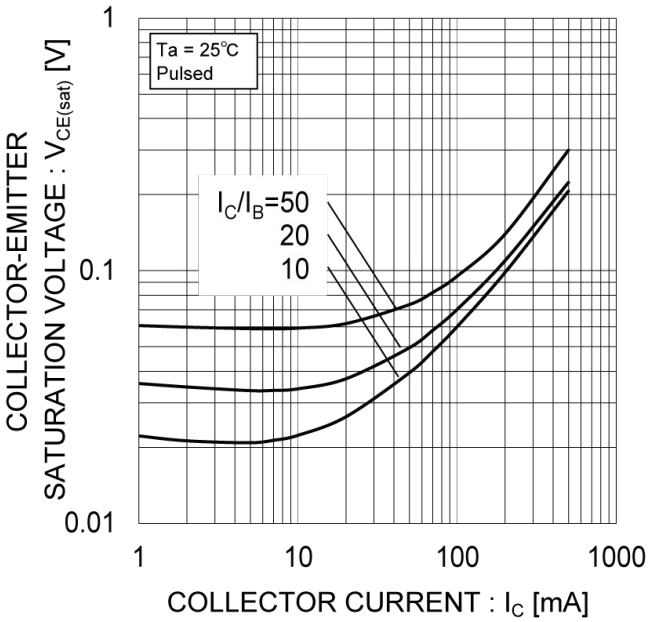



Fig.7 Base-emitter saturation voltage vs. collector current

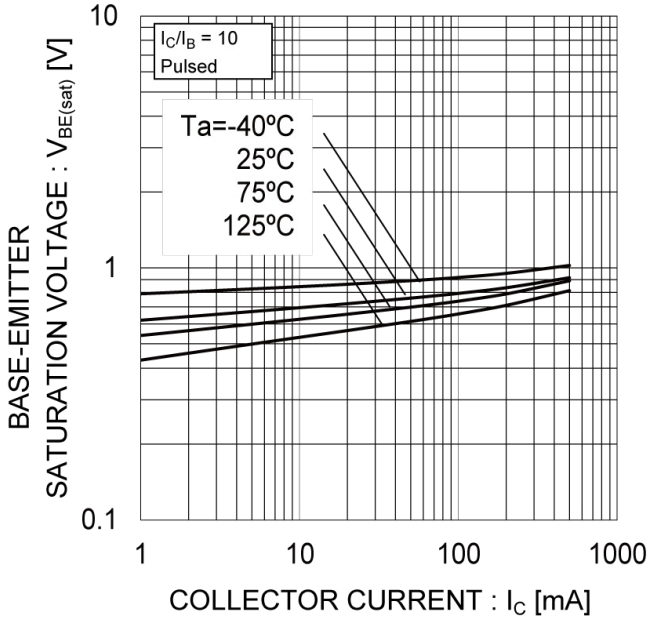
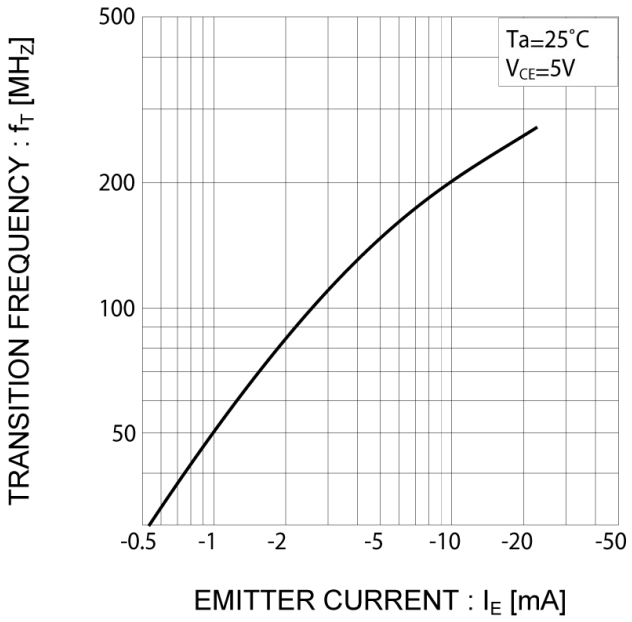



Fig.8 Gain bandwidth product vs. emitter current





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

Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base-voltage

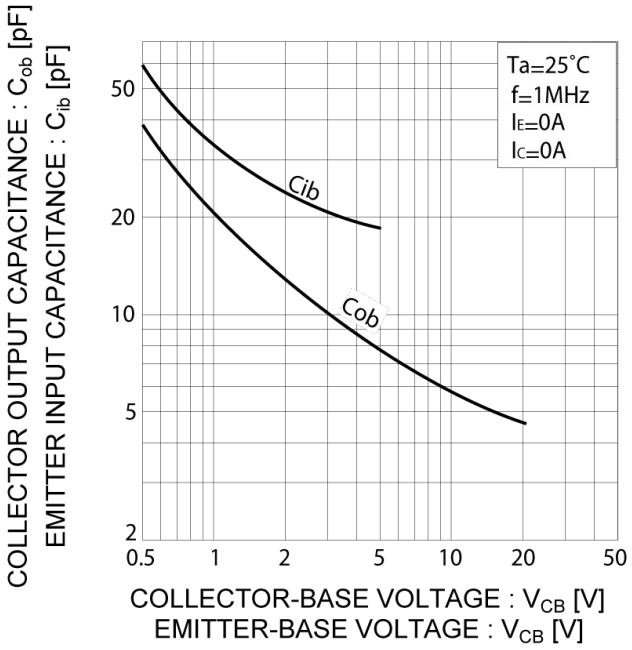
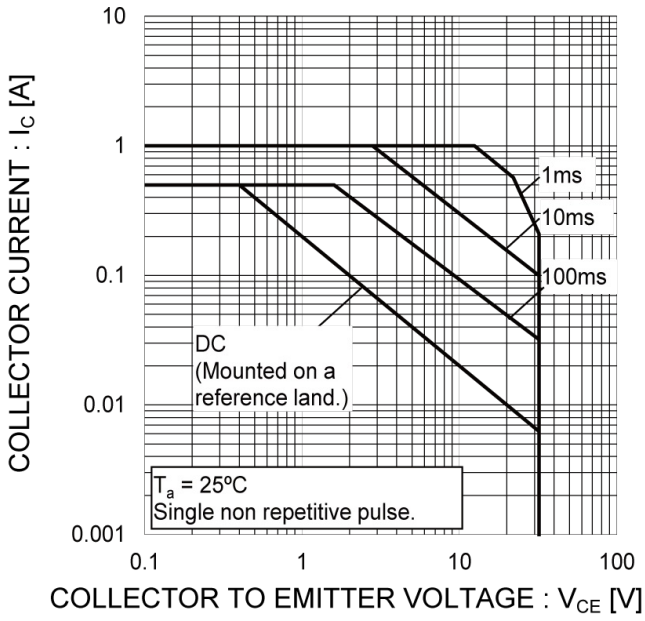



Fig.10 Safe Operating Area



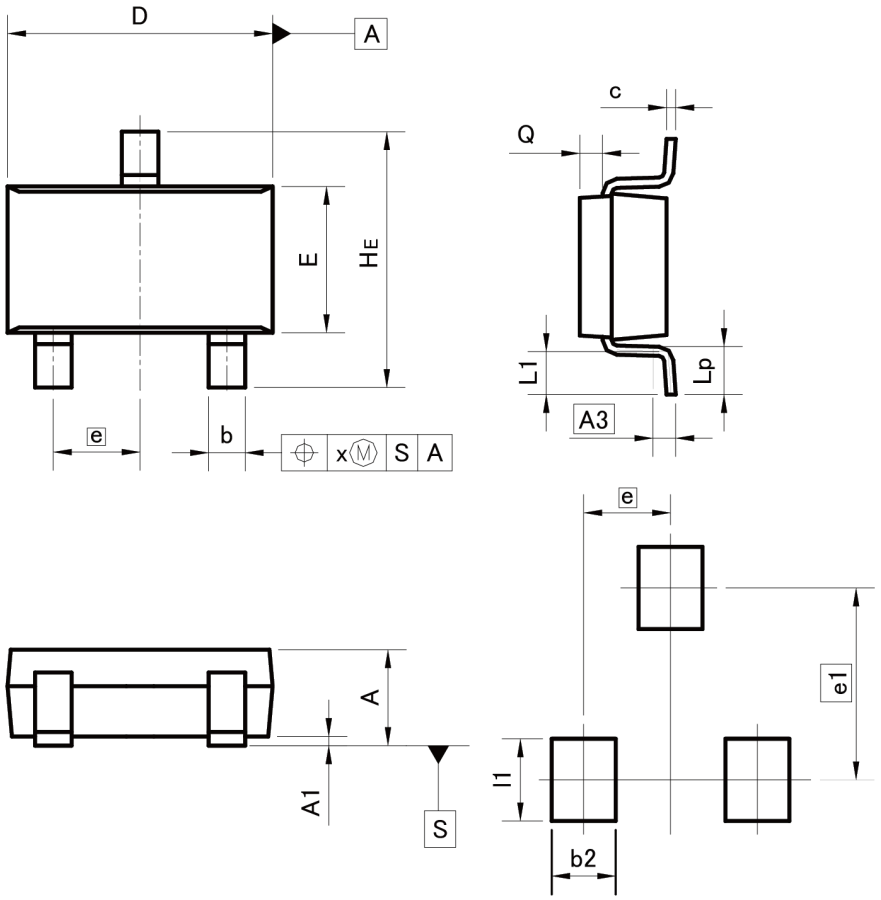


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## ●Dimensions

SMT3




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

| DIM | MILIMETERS | | INCHES | |
|---|---|---|---|---|
| | MIN | MAX | MIN | MAX |
| A | 1.00 | 1.30 | 0.039 | 0.051 |
| A1 | 0.00 | 0.10 | 0.000 | 0.004 |
| A3 | 0.25 | | 0.010 | |
| b | 0.35 | 0.50 | 0.014 | 0.020 |
| c | 0.09 | 0.25 | 0.004 | 0.010 |
| D | 2.80 | 3.00 | 0.110 | 0.118 |
| E | 1.50 | 1.80 | 0.059 | 0.071 |
| e | 0.95 | | 0.037 | |
| HE | 2.60 | 3.00 | 0.102 | 0.118 |
| L1 | 0.30 | 0.60 | 0.012 | 0.024 |
| Lp | 0.40 | 0.70 | 0.016 | 0.028 |
| Q | 0.20 | 0.30 | 0.008 | 0.012 |
| x | – | 0.10 | – | 0.004 |
| y | – | 0.10 | – | 0.004 |

| DIM | MILIMETERS | | INCHES | |
|---|---|---|---|---|
| | MIN | MAX | MIN | MAX |
| b2 | – | 0.60 | – | 0.024 |
| e1 | 2.10 | | 0.083 | |
| l1 | – | 0.90 | – | 0.035 |

Dimension in mm/inches


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| Part Number | 2sc2411k |
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| Packing Type | Taping |
| Constitution Materials List | inquiry |
| RoHS | Yes |

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