# Low frequency transistor (12V, 0.5A)

## 2SC5585 / 2SC5663

The transistor of 500mA class which went only into 2125 size conventionally was attained in 1608 sizes or 1208 sizes.

### ●Applications

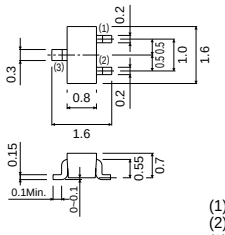
For switching
For muting

### ●Features

1) High current.
2) Low $V_{CE(sat)}$.
$V_{CE(sat)} \leq 250mV$ at $I_C = 200mA / I_B = 10mA$

### ●External dimensions (Unit : mm)

2SC5585

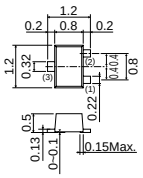



ROHM : EMT3
EIAJ : SC-75A
JEDEC : SOT-416

Abbreviated symbol : BX

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

2SC5663




ROHM : VMT3

Abbreviated symbol : BX

(1) Base
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### ●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit | |
|---|---|---|---|---|
| Collectot-base voltage | $V_{CBO}$ | 15 | V | |
| Collector-emitter voltage | $V_{CEO}$ | 12 | V | |
| Emitter-base voltage | $V_{EBO}$ | 6 | V | |
| Collector current | $I_C$ | 500 | mA | |
| | $I_{CP}$ | 1 | A | * |
| Collector power dissipation | $P_C$ | 150 | mW | |
| Junction temperature | Tj | 150 | °C | |
| Storage temperature | Tstg | −55 to +150 | °C | |

* Single pulse Pw = 1ms

### ●Electrical characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|---|---|---|---|---|---|---|
| Collector-base breakdown voltage | $BV_{CBO}$ | 15 | – | – | V | $I_C$ = 10μA |
| Collectoe-emitter brakdown voltage | $BV_{CEO}$ | 12 | – | – | V | $I_C$ = 1mA |
| Emitter-base breakdown voltage | $BV_{EBO}$ | 6 | – | – | V | $I_E$ = 10μA |
| Collector cutoff current | $I_{CBO}$ | – | – | 100 | nA | $V_{CB}$ = 15V |
| Emitter cutoff current | $I_{EBO}$ | – | – | 100 | nA | $V_{CB}$ = 6V |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | – | 90 | 250 | mV | $I_C$ = 200mA, $I_B$ = 10mA |
| DC current transfer ratio | $h_{FE}$ | 270 | – | 680 | – | $V_{CE}$ = 2V, $I_C$ = 10mA |
| Transition frequency | $f_T$ | – | 320 | – | MHz | $V_{CE}$ = 2V, $I_E$ = −10mA, f = 100MHz |
| Output capacitance | Cob | – | 7.5 | – | pF | $V_{CB}$ = 10V, $I_E$ = 0A, f = 1MHz |

## ●Packaging specifications

| Type | hFE | Package | Taping | |
|---|---|---|---|---|
| | | Code | TL | T2L |
| | | Basic ordering unit (pieces) | 3000 | 8000 |
| 2SC5585 | | | ○ | – |
| 2SC5663 | | | – | ○ |

## ●Electrical characteristic curves

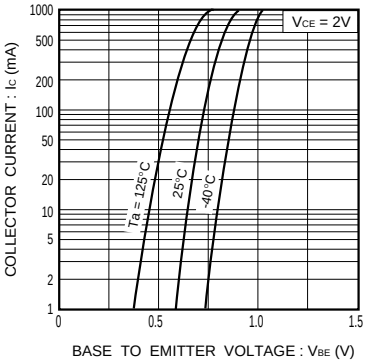



Fig.1 Grounded emitter propagation characteristics

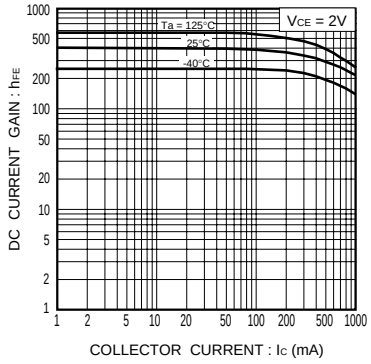



Fig.2 DC current gain vs. collector current

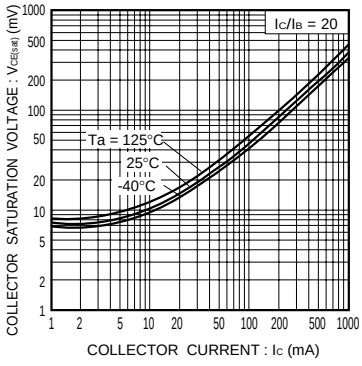



Fig.3 Collector-emitter saturation voltage vs. collector current ( I )

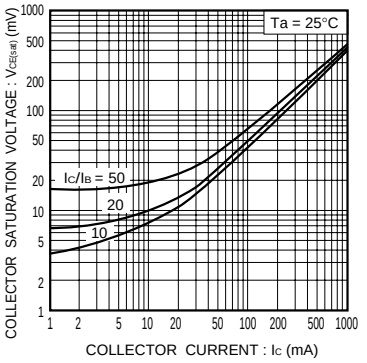



Fig.4 Collector-emitter saturation voltage vs. collector current ( II )

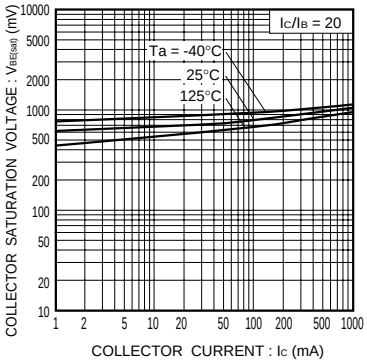



Fig.5 Base-emitter saturation voltage vs. collector current

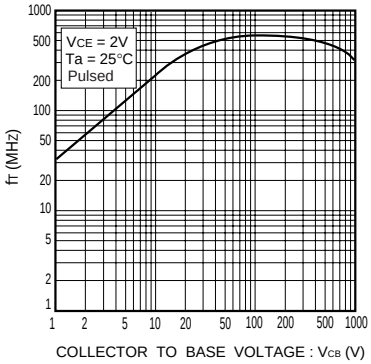



Fig.6 Collector output capacitance
Emitter input capacitance
vs. base voltage

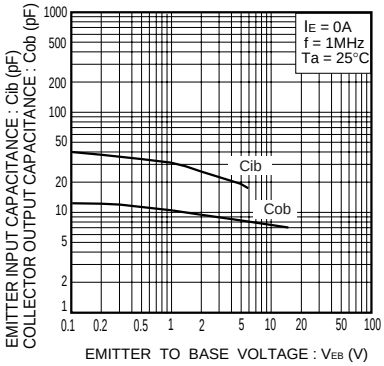



Fig.7 Collector output capacitance
vs collector-base voltage
Emitter input capacitance
vs emitter-base voltage

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