

# General purpose transistor(20V,0.2A)

2SCR522M / 2SCR522EB / 2SCR522UB

## ●Structure

NPN silicon epitaxial planar transistor

## ●Features

Complements the 2SAR522M / 2SAR522EB / 2SAR522UB.

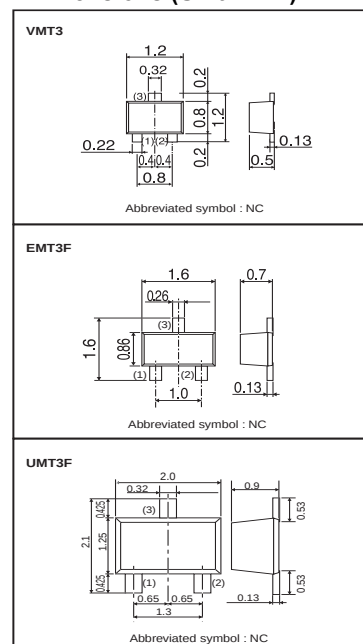
## ●Applications

Switch, LED driver

## ●Packaging specifications

| Type      | Package                      | VMT3   | EMT3F  | UMT3F  |
|-----------|------------------------------|--------|--------|--------|
|           | Packaging Type               | Taping | Taping | Taping |
|           | Code                         | T2L    | TL     | TL     |
|           | Basic ordering unit (pieces) | 8000   | 3000   | 3000   |
| 2SCR522M  |                              | ○      | —      | —      |
| 2SCR522EB |                              | —      | ○      | —      |
| 2SCR522UB |                              | —      | —      | ○      |

## ●Dimensions (Unit : mm)



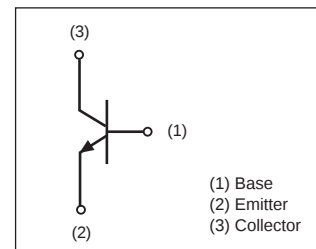
## ● Absolute maximum ratings (Ta=25°C)

| Parameter                    |                     | Symbol        | Limits      | Unit |
|------------------------------|---------------------|---------------|-------------|------|
| Collector-base voltage       |                     | $V_{CBO}$     | 20          | V    |
| Collector-emitter voltage    |                     | $V_{CEO}$     | 20          | V    |
| Emitter-base voltage         |                     | $V_{EBO}$     | 5           | V    |
| Collector current            |                     | $I_C$         | 200         | mA   |
|                              |                     | $I_{CP}^{*1}$ | 400         | mA   |
| Power dissipation            | 2SCR522M, 2SCR522EB | $P_D^{*2}$    | 150         | mW   |
|                              | 2SCR522UB           |               | 200         | mW   |
| Junction temperature         |                     | $T_j$         | 150         | °C   |
| Range of storage temperature |                     | $T_{stg}$     | -55 to +150 | °C   |

\*1  $P_W=1mS$  Single pulse

\*2 Each terminal mounted on a recommended land

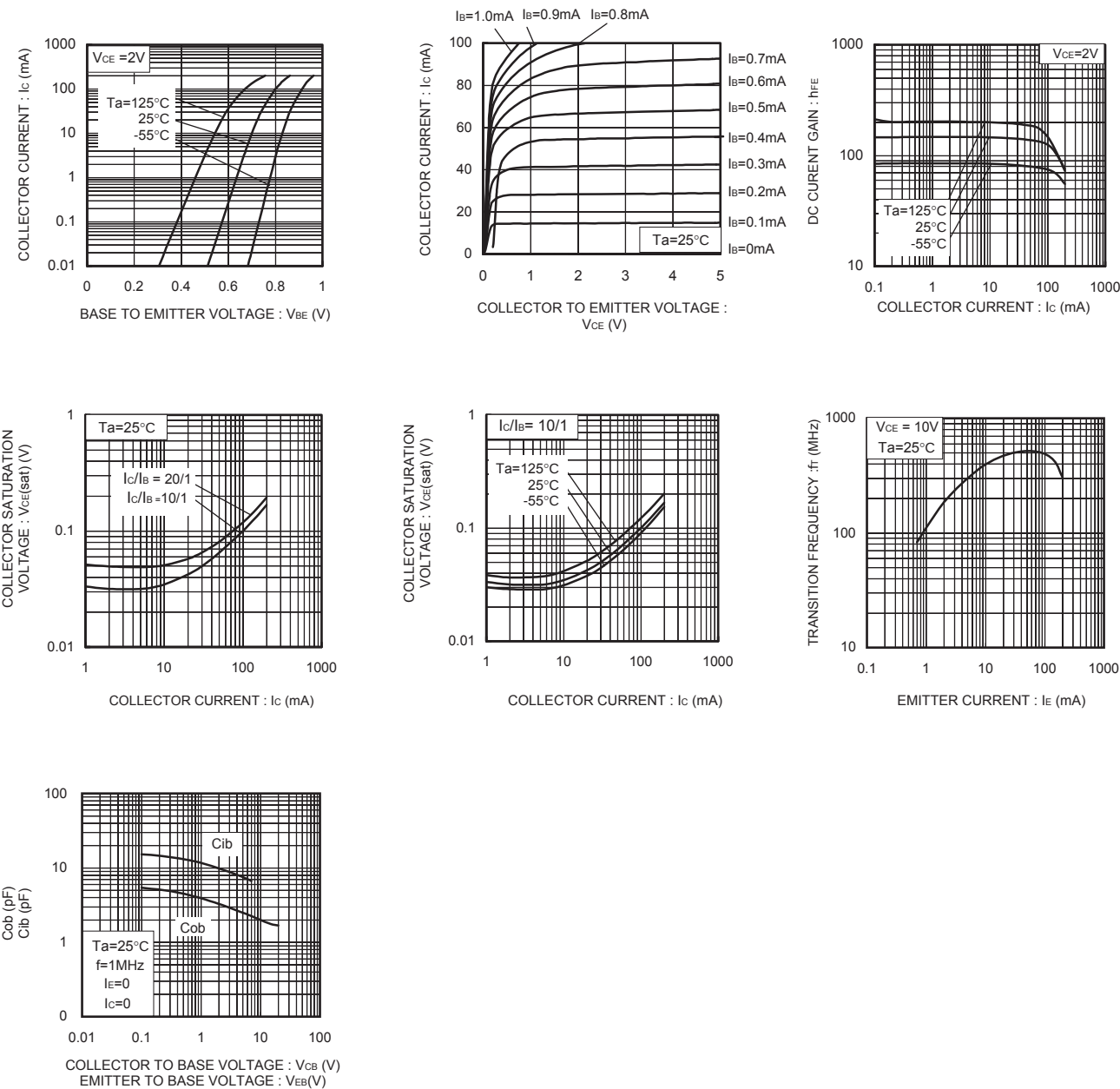
## ●Inner circuit



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

| Parameter                            | Symbol        | Min. | Typ. | Max. | Unit    | Conditions                        |
|--------------------------------------|---------------|------|------|------|---------|-----------------------------------|
| Collector-emitter breakdown voltage  | $BV_{CEO}$    | 20   | —    | —    | V       | $I_C=1mA$                         |
| Collector-base breakdown voltage     | $BV_{CBO}$    | 20   | —    | —    | V       | $I_C=50\mu A$                     |
| Emitter-base breakdown voltage       | $BV_{EBO}$    | 5    | —    | —    | V       | $I_E=50\mu A$                     |
| Collector cut-off current            | $I_{CBO}$     | —    | —    | 0.1  | $\mu A$ | $V_{CB}=20V$                      |
| Emitter cut-off current              | $I_{EBO}$     | —    | —    | 0.1  | $\mu A$ | $V_{EB}=5V$                       |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | —    | 0.12 | 0.30 | V       | $I_C=100mA, I_B=10mA$             |
| DC current gain                      | $h_{FE}$      | 120  | —    | 560  | —       | $V_{CE}=2V, I_C=1mA$              |
| Transition frequency                 | $f_T$         | —    | 400  | —    | MHz     | $V_{CE}=10V, I_E=-10mA, f=100MHz$ |
| Output capacitance                   | $C_{ob}$      | —    | 2    | —    | pF      | $V_{CB}=10V, I_E=0A, f=1MHz$      |

●Electrical characteristics curves



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