



JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

## SOT-563 Plastic-Encapsulate Transistors

**EMX1** General purpose transistors(dual transistors)

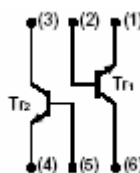
### FEATURES

- Two 2SC2412K chips in a SOT-563 package.
- Mounting possible with SOT-563 automatic mounting machines.
- Transistor elements are independent, eliminating interference.
- Mounting cost and area can be cut in half.

MARKING:X1

MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

| Symbol    | Parameter                     | Value   | Units              |
|-----------|-------------------------------|---------|--------------------|
| $V_{CBO}$ | Collector-Base Voltage        | 60      | V                  |
| $V_{CEO}$ | Collector-Emitter Voltage     | 50      | V                  |
| $V_{EBO}$ | Emitter-Base Voltage          | 7       | V                  |
| $I_C$     | Collector Current -Continuous | 150     | mA                 |
| $P_C$     | Collector Power Dissipation   | 150     | mW                 |
| $T_J$     | Junction Temperature          | 150     | $^{\circ}\text{C}$ |
| $T_{stg}$ | Storage Temperature           | -55-150 | $^{\circ}\text{C}$ |



SOT-563



ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}\text{C}$  unless otherwise specified)

| Parameter                            | Symbol        | Test conditions                                      | MIN | TYP | MAX | UNIT          |
|--------------------------------------|---------------|------------------------------------------------------|-----|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=50\mu\text{A}, I_E=0$                           | 60  |     |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1\text{mA}, I_B=0$                              | 50  |     |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=50\mu\text{A}, I_C=0$                           | 7   |     |     | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=60\text{V}, I_E=0$                           |     |     | 0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=7\text{V}, I_C=0$                            |     |     | 0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE}$      | $V_{CE}=6\text{V}, I_C=1\text{mA}$                   | 120 |     | 560 |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=50\text{mA}, I_B=5\text{mA}$                    |     |     | 0.4 | V             |
| Transition frequency                 | $f_T$         | $V_{CE}=12\text{V}, I_C=2\text{mA}, f=100\text{MHz}$ |     | 180 |     | MHz           |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=12\text{V}, I_E=0, f=1\text{MHz}$            |     | 2.0 | 3.5 | pF            |

# Typical Characteristics

EMX1

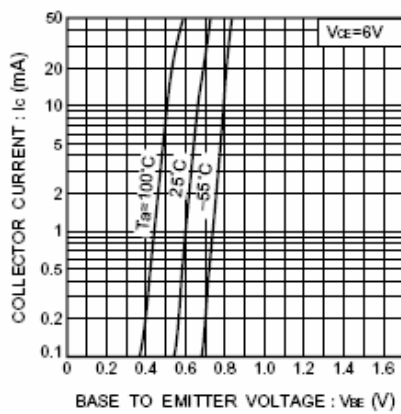


Fig.1 Grounded emitter propagation characteristics

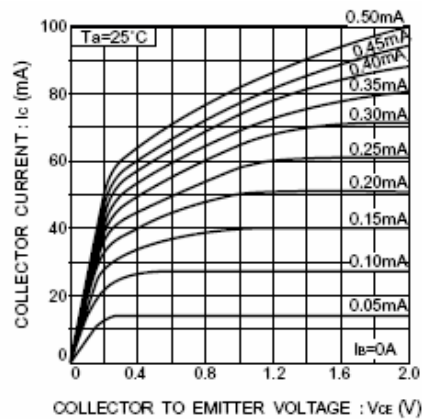


Fig.2 Grounded emitter output characteristics ( I )

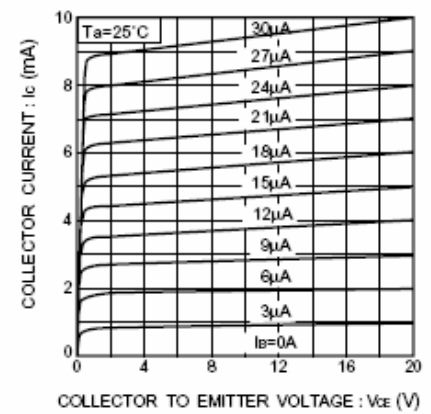


Fig.3 Grounded emitter output characteristics ( II )

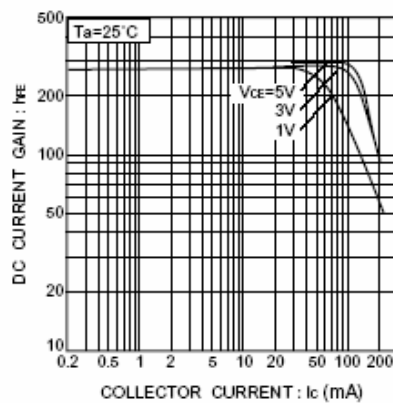


Fig.4 DC current gain vs. collector current ( I )

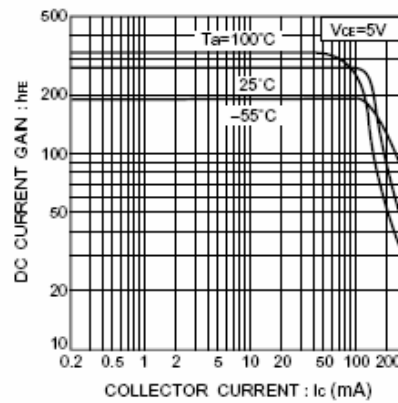


Fig.5 DC current gain vs. collector current ( II )

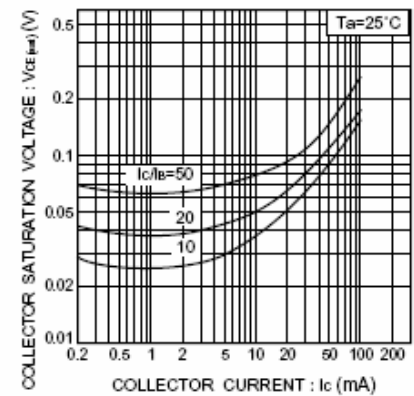


Fig.6 Collector-emitter saturation voltage vs. collector current

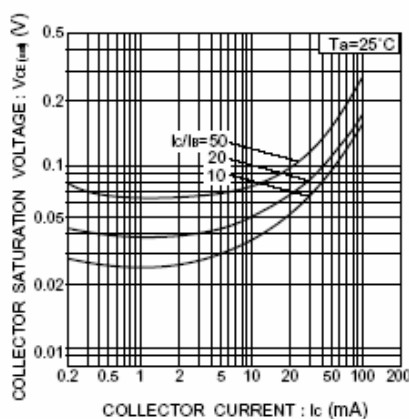


Fig.7 Collector-emitter saturation voltage vs. collector current ( I )

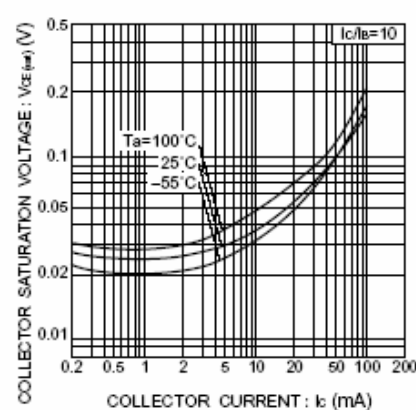


Fig.8 Collector-emitter saturation voltage vs. collector current ( II )

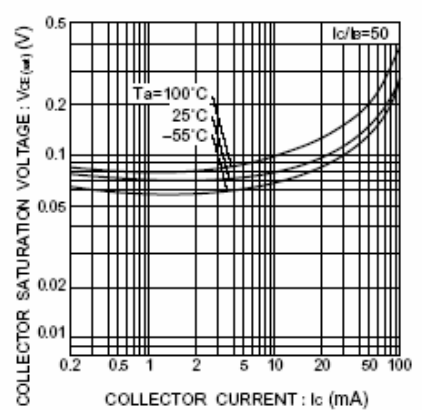


Fig.9 Collector-emitter saturation voltage vs. collector current ( III )

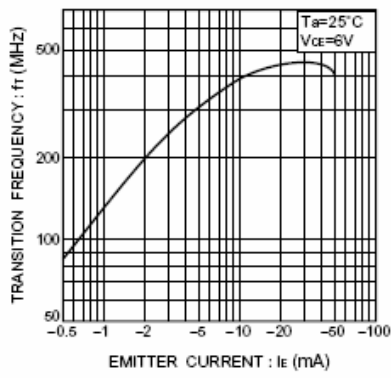


Fig.10 Gain bandwidth product vs. emitter current

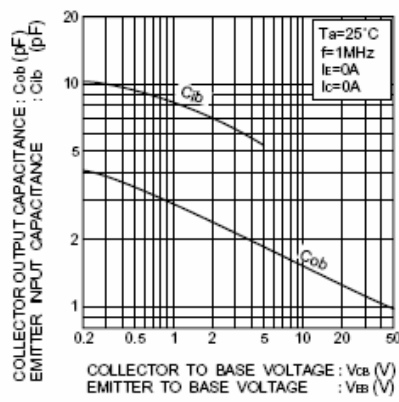


Fig.11 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

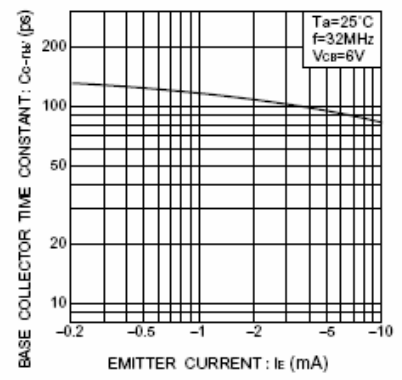


Fig.12 Base-collector time constant vs. emitter current