

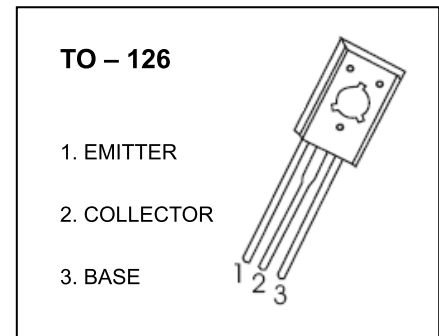


DONGGUAN NANJING ELECTRONICS LTD.,  
**TO-126 Plastic-Encapsulate Transistors**

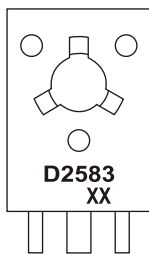
**2SD2583** TRANSISTOR (NPN)

**FEATURES**

- LOW  $V_{CE(sat)}$
- High DC Current Gain



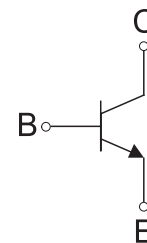
**MARKING**



D2583=Device code

XX=Code

**Equivalent Circuit**



**ORDERING INFORMATION**

| Part Number | Package | Packing Method | Pack Quantity |
|-------------|---------|----------------|---------------|
| 2SD2583     | TO-126  | Bulk           | 200pcs/Bag    |
| 2SD2583-TU  | TO-126  | Tube           | 60pcs/Tube    |

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

| Symbol          | Parameter  | Value    | Unit                 |
|-----------------|--|----------|----------------------|
| $V_{CBO}$       | Collector-Base Voltage                           | 30       | V                    |
| $V_{CEO}$       | Collector-Emitter Voltage                        | 30       | V                    |
| $V_{EBO}$       | Emitter-Base Voltage                             | 6        | V                    |
| $I_C$           | Collector Current                                | 5        | A                    |
| $P_C$           | Collector Power Dissipation                      | 1        | W                    |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient      | 125      | $^{\circ}\text{C/W}$ |
| $T_J, T_{stg}$  | Operation Junction and Storage Temperature Range | -55~+150 | $^{\circ}\text{C}$   |

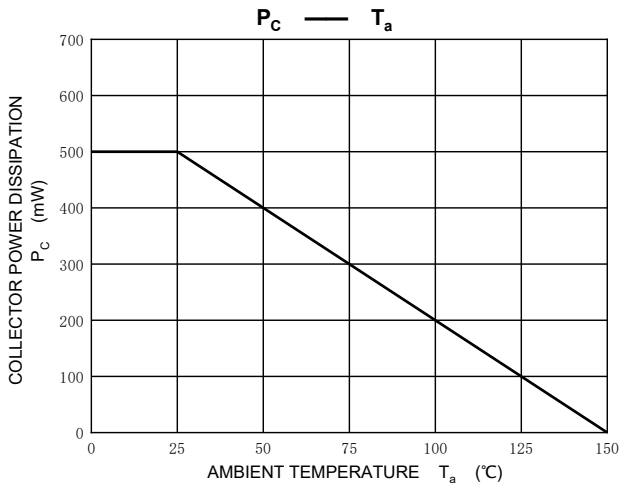
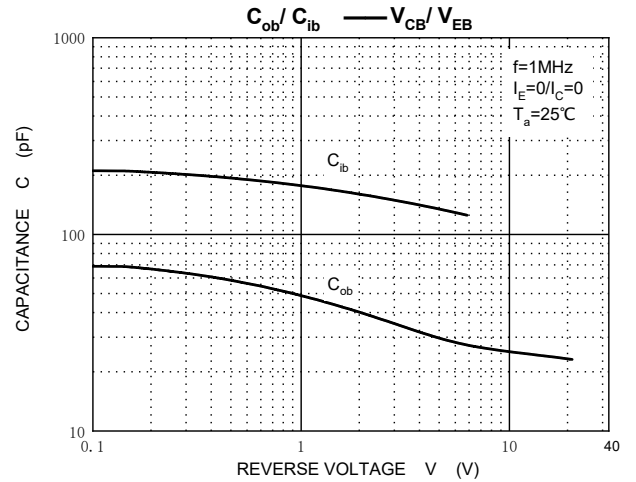
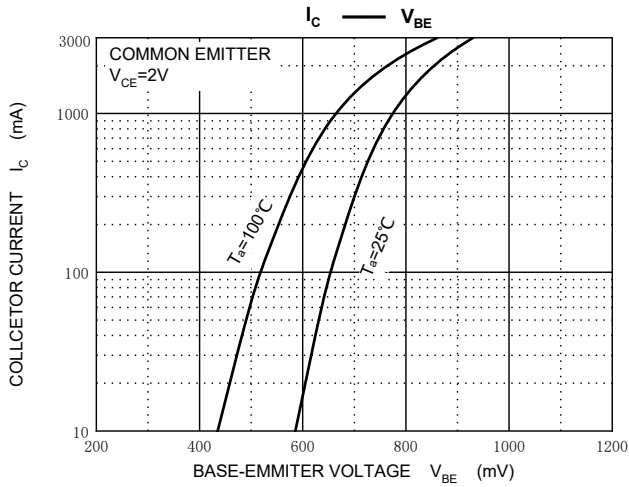
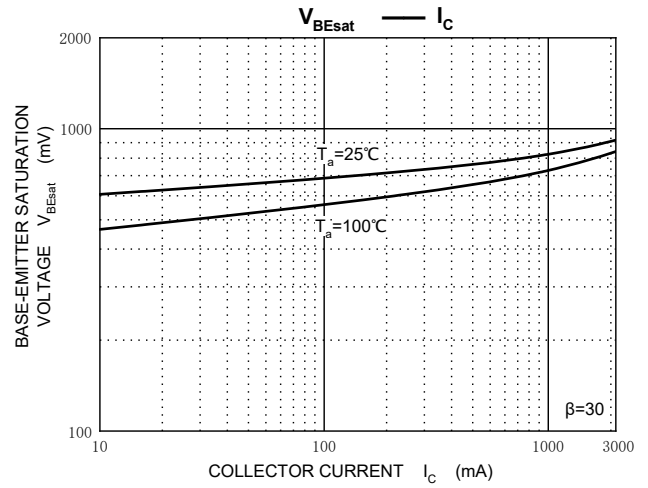
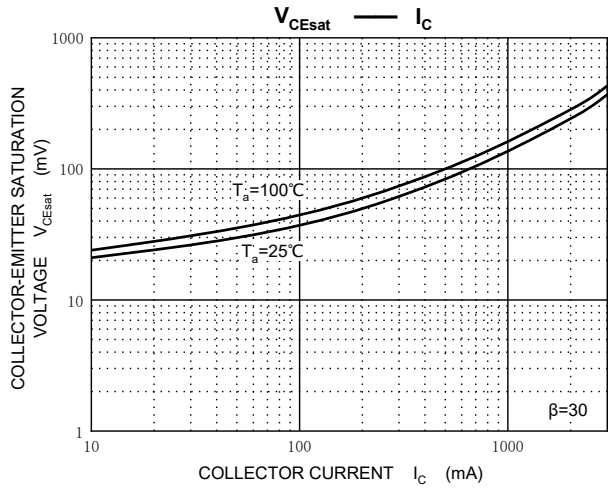
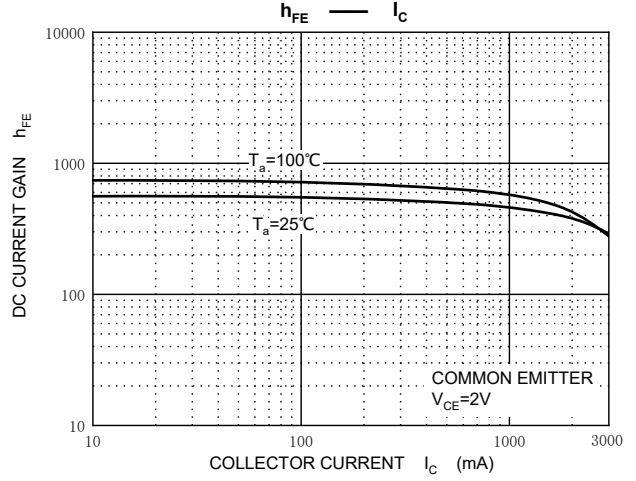
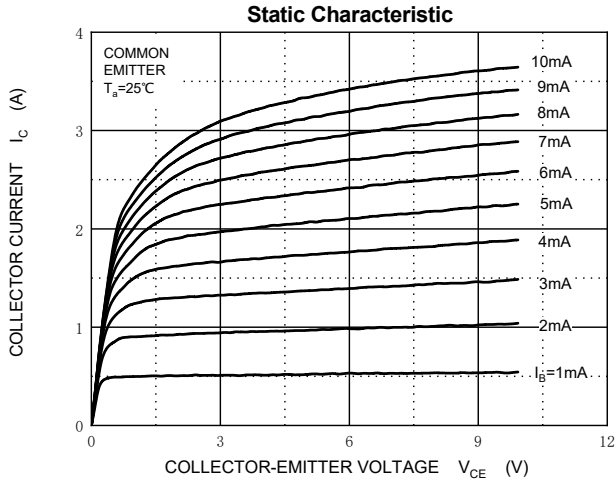
## ELECTRICAL CHARACTERISTICS

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$T_a=25\text{ }^\circ\text{C}$  unless otherwise specified

| Parameter                            | Symbol         | Test conditions                           | Min | Typ | Max  | Unit          |
|--------------------------------------|----------------|---|-----|-----|------|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$  | $I_C=100\mu\text{A}, I_E=0$               | 30  |     |      | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$  | $I_C=1\text{mA}, I_B=0$                   | 30  |     |      | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$  | $I_E=100\mu\text{A}, I_C=0$               | 6   |     |      | V             |
| Collector cut-off current            | $I_{CBO}$      | $V_{CB}=30\text{V}, I_E=0$                |     |     | 0.1  | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$      | $V_{EB}=6\text{V}, I_C=0$                 |     |     | 0.1  | $\mu\text{A}$ |
| DC current gain                      | $h_{FE(1)}$    | $V_{CE}=2\text{V}, I_C=1\text{A}$         | 150 |     | 600  |               |
|                                      | $h_{FE(2)}$    | $V_{CE}=2\text{V}, I_C=4\text{A}$         | 50  |     |      |               |
| Collector-emitter saturation voltage | $V_{CE(sat)1}$ | $I_C=1\text{A}, I_B=0.05\text{A}$         |     |     | 0.15 | V             |
|                                      | $V_{CE(sat)2}$ | $I_C=2\text{A}, I_B=0.1\text{A}$          |     |     | 0.25 | V             |
|                                      | $V_{CE(sat)3}$ | $I_C=4\text{A}, I_B=0.2\text{A}$          |     |     | 0.5  | V             |
| Base-emitter saturation voltage      | $V_{BE(sat)}$  | $I_C=2\text{A}, I_B=0.1\text{A}$          |     |     | 1.5  | V             |
| Collector output capacitance         | $C_{ob}$       | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$ |     | 77  |      | pF            |
| Transition frequency                 | $f_T$          | $V_{CE}=10\text{V}, I_C=50\text{mA}$      |     | 120 |      | MHz           |

# Typical Characteristics



# TO-126 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |        | Dimensions In Inches |       |
|--------|---------------------------|--------|----------------------|-------|
|        | Min                       | Max    | Min                  | Max   |
| A      | 2.500                     | 2.900  | 0.098                | 0.114 |
| A1     | 1.100                     | 1.500  | 0.043                | 0.059 |
| b      | 0.660                     | 0.860  | 0.026                | 0.034 |
| b1     | 1.170                     | 1.370  | 0.046                | 0.054 |
| c      | 0.450                     | 0.600  | 0.018                | 0.024 |
| D      | 7.400                     | 7.800  | 0.291                | 0.307 |
| E      | 10.600                    | 11.000 | 0.417                | 0.433 |
| e      | 2.290 TYP                 |        | 0.090 TYP            |       |
| e1     | 4.480                     | 4.680  | 0.176                | 0.184 |
| h      | 0.000                     | 0.300  | 0.000                | 0.012 |
| L      | 15.300                    | 15.700 | 0.602                | 0.618 |
| L1     | 2.100                     | 2.300  | 0.083                | 0.091 |
| P      | 3.900                     | 4.100  | 0.154                | 0.161 |
| $\phi$ | 3.000                     | 3.200  | 0.118                | 0.126 |