



**TO-92MOD Plastic-Encapsulate Transistors**

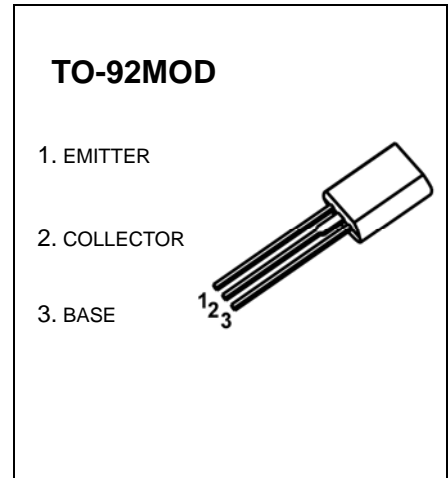
**2SD400** TRANSISTOR (NPN)

**FEATURES**

- Low-Frequency power Amp, Electronic Governor Applications

**MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)**

| Symbol           | Parameter                     | Value   | Unit |
|------------------|-------------------------------|---------|------|
| V <sub>CBO</sub> | Collector-Base Voltage        | 25      | V    |
| V <sub>CEO</sub> | Collector-Emitter Voltage     | 25      | V    |
| V <sub>EBO</sub> | Emitter-Base Voltage          | 5       | V    |
| I <sub>C</sub>   | Collector Current -Continuous | 1       | A    |
| P <sub>C</sub>   | Collector Power Dissipation   | 0.9     | W    |
| T <sub>J</sub>   | Junction Temperature          | 150     | °C   |
| T <sub>stg</sub> | Storage Temperature           | -55-150 | °C   |



**ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)**

| Parameter                            | Symbol               | Test conditions                             | Min | Typ | Max | Unit |
|--------------------------------------|----------------------|---|-----|-----|-----|------|
| Collector-base breakdown voltage     | V <sub>(BR)CBO</sub> | I <sub>C</sub> =10μA, I <sub>E</sub> =0     | 25  |     |     | V    |
| Collector-emitter breakdown voltage  | V <sub>(BR)CEO</sub> | I <sub>C</sub> =1mA, I <sub>B</sub> =0      | 25  |     |     | V    |
| Emitter-base breakdown voltage       | V <sub>(BR)EBO</sub> | I <sub>E</sub> =10μA, I <sub>C</sub> =0     | 5   |     |     | V    |
| Collector cut-off current            | I <sub>CBO</sub>     | V <sub>CB</sub> =20V, I <sub>E</sub> =0     |     |     | 1   | μA   |
| Emitter cut-off current              | I <sub>EBO</sub>     | V <sub>EB</sub> =4V, I <sub>C</sub> =0      |     |     | 1   | μA   |
| DC current gain                      | h <sub>FE(1)</sub>   | V <sub>CE</sub> =2V, I <sub>C</sub> =50mA   | 60  |     | 560 |      |
|                                      | h <sub>FE(2)</sub>   | V <sub>CE</sub> =2V, I <sub>C</sub> =1A     | 30  |     |     |      |
| Collector-emitter saturation voltage | V <sub>CE(sat)</sub> | I <sub>C</sub> =500mA, I <sub>B</sub> =50mA |     |     | 0.3 | V    |
| Base-emitter saturation voltage      | V <sub>BE(sat)</sub> | I <sub>C</sub> =500mA, I <sub>B</sub> =50mA |     |     | 1.2 | V    |
| Transition frequency                 | f <sub>T</sub>       | V <sub>CE</sub> =10V, I <sub>C</sub> =50mA  |     | 180 |     | MHz  |
| Output Capacitance                   | C <sub>ob</sub>      | V <sub>CB</sub> =10V, f=1MHz                |     | 15  |     | pF   |

**CLASSIFICATION OF h<sub>FE(1)</sub>**

| Rank  | D      | E       | F       | G       |
|-------|--------|---------|---------|---------|
| Range | 60-120 | 100-200 | 160-320 | 280-560 |