



东莞市华远电子有限公司

DONG GUAN SHI HUA YUAN ELECTRON CO.,LTD.

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TO-220 Plastic-Encapsulate Transistors

2SD880 TRANSISTOR (NPN)

FEATURES

Power dissipation

P_{CM} : 1.5 W ($T_{amb}=25$)

Collector current

I_{CM} : 3 A

Collector-base voltage

$V_{(BR)CBO}$: 60 V

Operating and storage junction temperature range

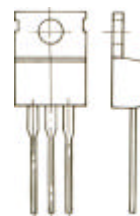
T_J , T_{stg} : -55 to +150

TO—220

1.BASE

2.COLLECTOR

3.EMITTER 1 2 3



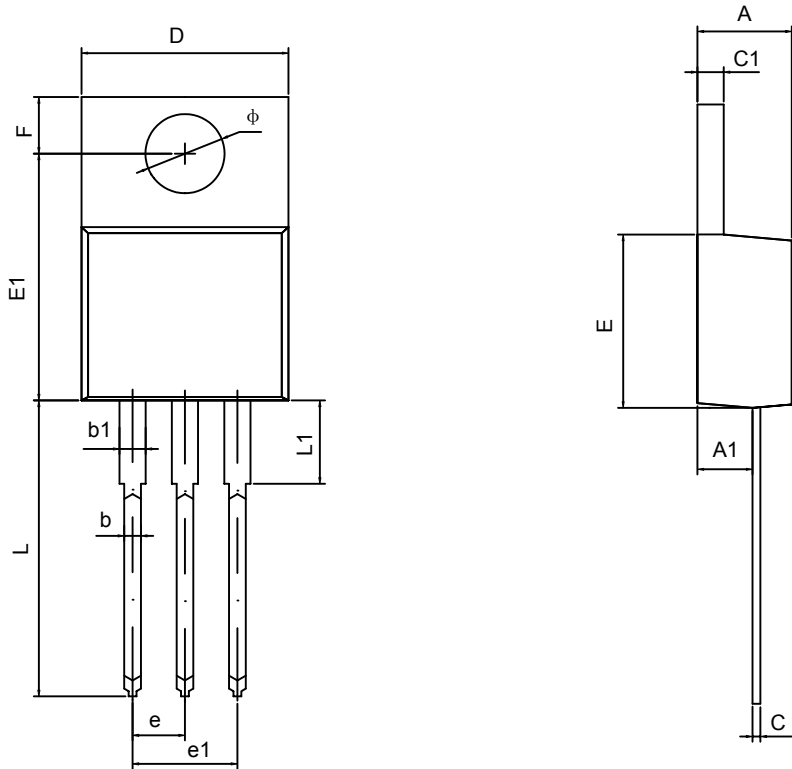
ELECTRICAL CHARACTERISTICS ($T_{amb}=25$ unless otherwise specified)

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|---|-----|-----|-----|---------|
| Collector-base breakdown voltage | $V_{(BR)CBO}$ | $I_C=100\mu A, I_E=0$ | 60 | | | V |
| Collector-emitter breakdown voltage | $V_{(BR)CEO}$ | $I_C=50mA, I_B=0$ | 60 | | | V |
| Emitter-base breakdown voltage | $V_{(BR)EBO}$ | $I_E=100\mu A, I_C=0$ | 7 | | | V |
| Collector cut-off current | I_{CBO} | $V_{CB}=60V, I_E=0$ | | | 100 | μA |
| Emitter cut-off current | I_{EBO} | $V_{EB}=7V, I_C=0$ | | | 100 | μA |
| DC current gain | h_{FE} | $V_{CE}=5V, I_C=500mA$ | 60 | | 300 | |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=3A, I_B=300mA$ | | | 1 | V |
| Base-emitter saturation voltage | V_{BE} | $I_C=0.5A, V_{CE}=5V$ | | | 1 | V |
| Transition Frequency | f_T | $V_{CE}=5V, I_C=500mA$ | | 3 | | MHz |
| Collector output capacitance | C_{ob} | $V_{CE}=10V, I_E=0, f=1MHz$ | | 70 | | pF |
| Turn on time | t_{on} | $I_{B1}=-I_{B2}=0.2A, I_C=2A$ $V_{CC}=30V, PW=20\mu s$ | | 0.8 | | μs |
| Storage time | t_s | | | 1.5 | | μs |
| Fall time | t_f | | | 0.8 | | μs |

CLASSIFICATION OF h_{FE}

| Rank | O | Y | GR |
|-------|--------|---------|---------|
| Range | 60-120 | 100-200 | 150-300 |

TO-220-3L PACKAGE OUTLINE DIMENSIONS



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|-----------|---------------------------|--------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 4.470 | 4.670 | 1.176 | 0.184 |
| A1 | 2.520 | 2.820 | 0.099 | 0.111 |
| b | 0.710 | 0.910 | 0.028 | 0.036 |
| b1 | 1.170 | 1.370 | 0.046 | 0.054 |
| c | 0.310 | 0.530 | 0.012 | 0.021 |
| c1 | 1.710 | 1.370 | 0.046 | 0.054 |
| D | 10.010 | 10.310 | 0.394 | 0.406 |
| E | 8.500 | 8.900 | 0.335 | 0.350 |
| E1 | 12.060 | 12.460 | 0.475 | 0.491 |
| e | 2.540TYP | | 0.100TYP | |
| e1 | 4.980 | 5.180 | 0.196 | 0.204 |
| F | 2.590 | 2.890 | 0.102 | 0.114 |
| L | 13.400 | 13.800 | 0.528 | 0.543 |
| L1 | 3.560 | 3.960 | 0.140 | 0.156 |
| ϕ | 3.790 | 3.890 | 0.149 | 0.153 |