



JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

## SOT-23-3L Plastic-Encapsulate Transistors

### **2SD1781K** TRANSISTOR (NPN)

#### FEATURES

Power dissipation

$P_{CM}$ : 200 mW ( $T_{amb}=25^{\circ}C$ )

Collector current

$I_{CM}$ : 0.8 A

Collector-base voltage

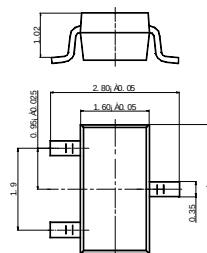
$V_{(BR)CBO}$ : 40 V

Operating and storage junction temperature range

$T_J$   $T_{stg}$ :  $-55^{\circ}C$  to  $+150^{\circ}C$

#### SOT-23-3L

1. BASE
2. EMITTER
3. COLLECTOR



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

| Parameter                            | Symbol        | Test conditions                       | MIN | TYP | MAX | UNIT    |
|--------------------------------------|---------------|---------------------------------------|-----|-----|-----|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=50\mu A$ , $I_E=0$               | 40  |     |     | V       |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1mA$ , $I_B=0$                   | 32  |     |     | V       |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=50\mu A$ , $I_C=0$               | 5   |     |     | V       |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=20V$ , $I_E=0$                |     |     | 0.5 | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=4V$ , $I_C=0$                 |     |     | 0.5 | $\mu A$ |
| DC current gain                      | $h_{FE(1)}$   | $V_{CE}=3V$ , $I_C=100mA$             | 120 |     | 390 |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=500mA$ , $I_B=50mA$              |     |     | 0.4 | V       |
| Transition frequency                 | $f_T$         | $V_{CE}=5V$ , $I_C=50mA$ , $f=100MHz$ |     | 150 |     | MHz     |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=10V$ , $I_E=0$ , $f=1MHz$     |     | 10  |     | pF      |

#### CLASSIFICATION OF $h_{FE(1)}$

| Rank    | Q       | R       |
|---------|---------|---------|
| Range   | 120-270 | 180-390 |
| Marking | AFQ     | AFR     |