

isc Silicon NPN Darlington Power Transistor

2SD504

DESCRIPTION

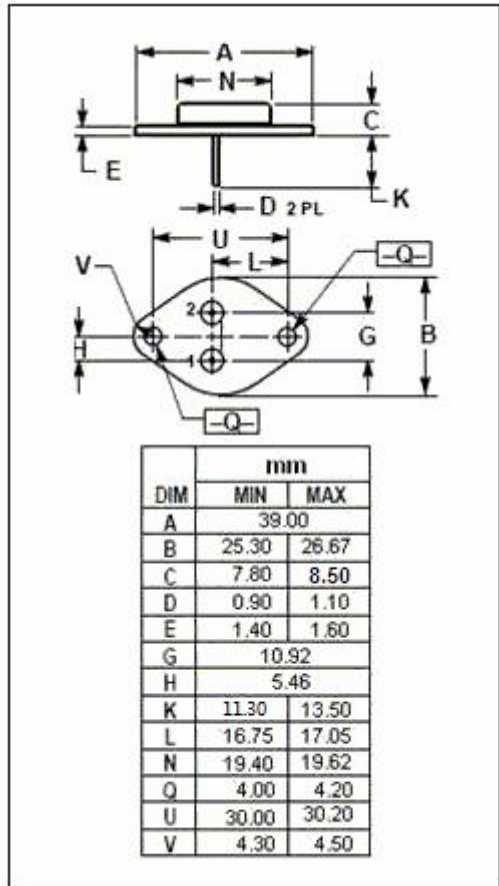
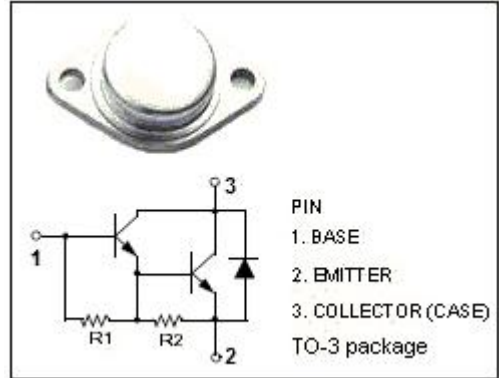
- High DC current gain-
 $h_{FE} = 750$ (Min) @ $I_C = 6A$
- Collector-Emitter Sustaining Voltage-
 $V_{CEO(SUS)} = 60V$ (Min)
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for general purpose amplifier and low frequency switching applications.

ABSOLUTE MAXIMUM RATINGS($T_C=25^\circ C$)

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------|
| V_{CBO} | Collector-Base Voltage | 60 | V |
| V_{CEO} | Collector-Emitter Voltage | 60 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current -Continuous | 12 | A |
| I_{CM} | Collector Current-Peak | 20 | A |
| I_B | Base Current | 0.2 | A |
| P_C | Collector Power Dissipation@ $T_C=25^\circ C$ | 150 | W |
| T_J | Junction Temperature | 150 | $^\circ C$ |
| T_{stg} | Storage Temperature | -65~150 | $^\circ C$ |



isc Silicon NPN Darlington Power Transistor**2SD504****ELECTRICAL CHARACTERISTICS** $T_C=25^\circ\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|-----------------|--------------------------------------|---|-----|------------|------|
| $V_{CE0(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=30\text{mA}; I_B=0$ | 60 | | V |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C=6\text{A}; I_B=24\text{mA}$ | | 2.0 | V |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C=12\text{A}; I_B=120\text{mA}$ | | 3.0 | V |
| $V_{BE(on)}$ | Base-Emitter On voltage | $I_C=6\text{A}; V_{CE}=3\text{V}$ | | 2.8 | V |
| I_{CEO} | Collector Cutoff current | $V_{CE}=30\text{V}; I_B=0$ | | 1.0 | mA |
| I_{CBO} | Collector Cutoff current | $V_{CB}=60\text{V}; I_E=0$ $V_{CB}=60\text{V}; I_E=0; T_C=150^\circ\text{C}$ | | 0.5 5.0 | mA |
| I_{EBO} | Emitter Cut-off current | $V_{EB}=5\text{V}; I_C=0$ | | 2.0 | mA |
| h_{FE-1} | DC Current Gain | $I_C=6\text{A}; V_{CE}=3\text{V}$ | 750 | 18000 | |
| h_{FE-2} | DC Current Gain | $I_C=12\text{A}; V_{CE}=3\text{V}$ | 100 | | |
| C_{OB} | Output Capacitance | $I_E=0; V_{CB}=10\text{V}; f_{test}=0.1\text{MHz}$ | | 300 | pF |

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