

isc Silicon NPN Power Transistor
2SD1691
DESCRIPTION

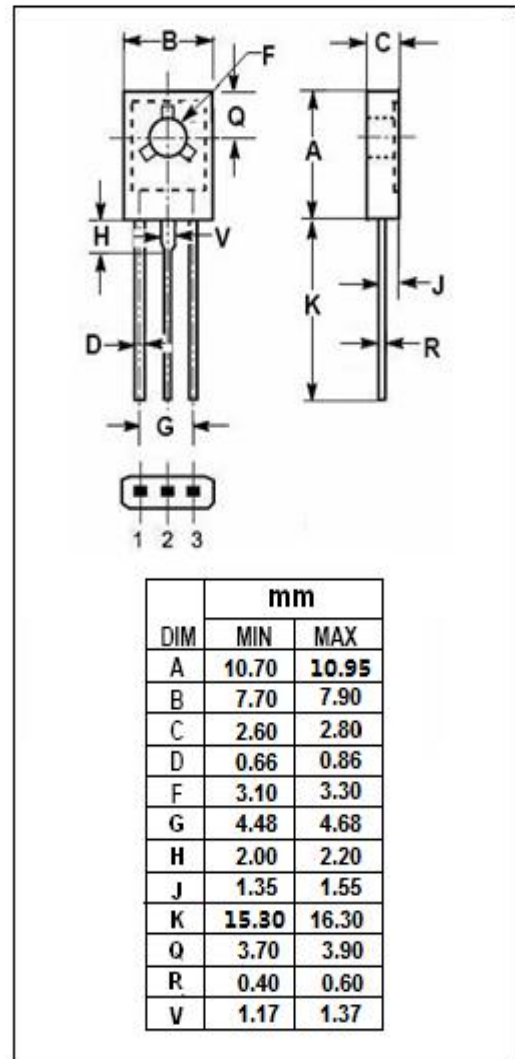
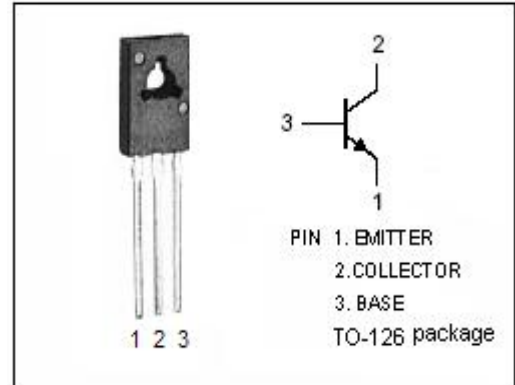
- High Collector Current - $I_C = 5A$
- Low Collector Saturation Voltage
: $V_{CE(sat)} = 0.3V(\text{Max.}) @ I_C = 2A$
- Complement to Type 2SB1151
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for use in DC-DC converter, or driver of solenoid or motor.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------|
| V_{CBO} | Collector-Base Voltage | 60 | V |
| V_{CEO} | Collector-Emitter Voltage | 60 | V |
| V_{EBO} | Emitter-Base Voltage | 7 | V |
| I_C | Collector Current-Continuous | 5 | A |
| I_{CP} | Collector Current-Pulse | 8 | A |
| I_B | Base Current-Continuous | 1 | A |
| P_C | Collector Power Dissipation @ $T_C = 25^\circ C$ | 20 | W |
| | Collector Power Dissipation @ $T_a = 25^\circ C$ | 1.3 | |
| T_J | Junction Temperature | 150 | $^\circ C$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ C$ |



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ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------------|--------------------------------------|--|-----|------|-----|------|
| V _{CE(sat)} | Collector-Emitter Saturation Voltage | I _C = 2A; I _B = 0.2A | | | 0.3 | V |
| V _{BE(sat)} | Base-Emitter Saturation Voltage | I _C = 2A; I _B = 0.2A | | | 1.2 | V |
| I _{CB0} | Collector Cutoff Current | V _{CB} = 50V; I _E = 0 | | | 10 | μ A |
| I _{EB0} | Emitter Cutoff Current | V _{EB} = 7V; I _C = 0 | | | 10 | μ A |
| h _{FE-1} | DC Current Gain | I _C = 0.1A; V _{CE} = 1V | 60 | | | |
| h _{FE-2} | DC Current Gain | I _C = 2A; V _{CE} = 1V | 100 | | 400 | |
| h _{FE-3} | DC Current Gain | I _C = 5A; V _{CE} = 1V | 50 | | | |
| Switching Times | | | | | | |
| t _{on} | Turn-on Time | I _C = 2A, I _{B1} = I _{B2} = 0.2A; R _L = 5Ω; V _{CC} ≈ 10V | | | 1.0 | μ s |
| t _{stg} | Storage Time | | | | 2.5 | μ s |
| t _f | Fall Time | | | | 1.0 | μ s |

◆ h_{FE-2} Classifications

| M | L | K |
|---------|---------|---------|
| 100-200 | 160-320 | 200-400 |

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