

isc Silicon NPN Darlington Power Transistor

2SD1692

DESCRIPTION

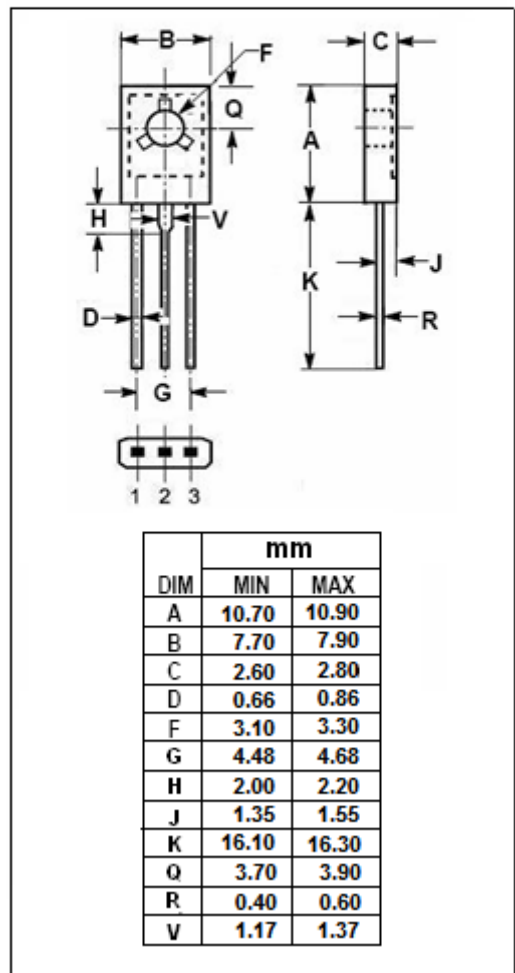
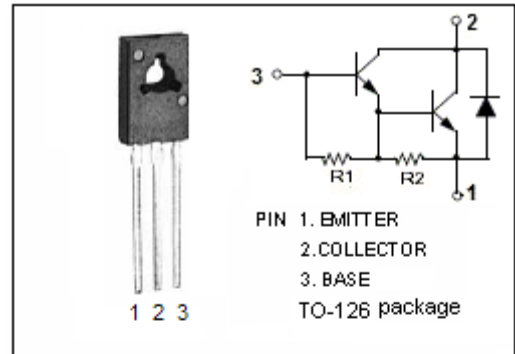
- Collector–Emitter Sustaining Voltage—
: $V_{CEO(SUS)} = 100V(\text{min.})$
- DC Current Gain—
: $h_{FE} = 2000(\text{Min.}) @ I_C = 1.5 A$
- Complement to Type 2SB1149

APPLICATIONS

- Designed for general-purpose amplifier applications.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------|
| V_{CBO} | Collector-Base Voltage | 150 | V |
| V_{CEO} | Collector-Emitter Voltage | 100 | V |
| V_{EBO} | Emitter-Base Voltage | 8 | V |
| I_C | Collector Current-Continuous | ± 3 | A |
| I_{CM} | Collector Current-Peak | ± 5 | A |
| P_C | Collector Power Dissipation $T_a=25^\circ C$ | 1.3 | W |
| | Collector Power Dissipation $T_C=25^\circ C$ | 15 | |
| T_j | Junction Temperature | 150 | $^\circ C$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ C$ |



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------|--------------------------------------|---|------|------|-------|---------------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=3\text{A}; I_B=3\text{mA}, L=1.0\text{mH}$ | 100 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=1.5\text{A}; I_B=1.5\text{mA}$ | | | 1.2 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C=1.5\text{A}; I_B=1.5\text{mA}$ | | | 2.0 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB}=100\text{V}; I_E=0$ | | | 10 | μA |
| I_{CEO} | Collector Cutoff Current | $V_{CE}=100\text{V}; R_{BE}=\infty$ | | | 1.0 | mA |
| h_{FE-1} | DC Current Gain | $I_C=1.5\text{A}; V_{CE}=2\text{V}$ | 2000 | | 20000 | |
| h_{FE-2} | DC Current Gain | $I_C=3\text{A}; V_{CE}=2\text{V}$ | 1000 | | | |

Switching Times

| | | | | | | |
|-----------|--------------|--|--|-----|--|---------------|
| t_{on} | Turn-on Time | $I_C=1.5\text{A}, I_{B1}=-I_{B2}=1.5\text{mA}; R_L=27\Omega; V_{CC}\approx 40\text{V}$ | | 0.5 | | μs |
| t_{stg} | Storage Time | | | 2.0 | | μs |
| t_f | Fall Time | | | 1.0 | | μs |

◆ h_{FE-1} Classifications

| M | L | K |
|-----------|------------|------------|
| 2000-5000 | 4000-12000 | 8000-20000 |