



Micro Commercial Components



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2SD1691-O

2SD1691-Y

2SD1691-G

Features

- Low Collector-Emitter Saturation Voltage
- Large Collector Current
- High Power Dissipation
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

Maximum Ratings

| Symbol | Rating | Rating | Unit |
|-----------|--|-------------|------------------|
| V_{CEO} | Collector-Emitter Voltage | 60 | V |
| V_{CBO} | Collector-Base Voltage | 60 | V |
| V_{EBO} | Emitter-Base Voltage | 7.0 | V |
| I_C | Collector Current | 5.0 | A |
| P_C | Collector Power Dissipation ($T_a = 25^\circ\text{C}$) | 1.3 | W |
| | Collector Power Dissipation ($T_C = 25^\circ\text{C}$) | 20 | W |
| T_J | Junction Temperature | -55 to +150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature | -55 to +150 | $^\circ\text{C}$ |

Electrical Characteristics @ 25°C Unless Otherwise Specified

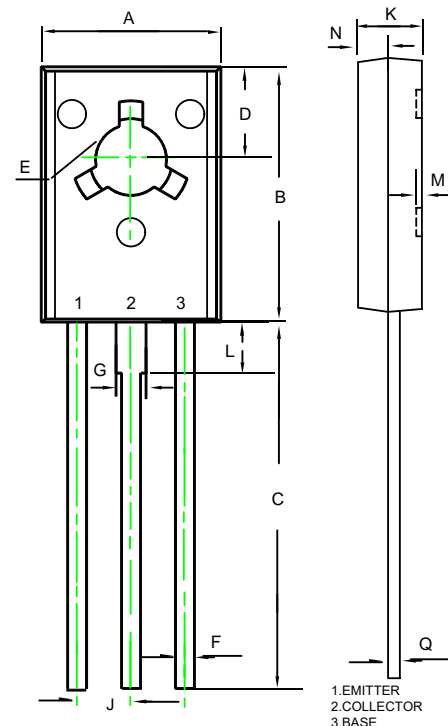
| Symbol | Parameter | Min | Max | Units |
|---------------|---|---|-----|-----------------|
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage ($I_C=100\text{mAdc}$, $I_E=0$) | 60 | --- | Vdc |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage ($I_C=1.0\text{mAdc}$, $I_B=0$) | 60 | --- | Vdc |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage ($I_E=100\text{mAdc}$, $I_C=0$) | 7 | --- | Vdc |
| I_{CBO} | Collector-Base Cutoff Current ($V_{CB}=50\text{Vdc}$, $I_E=0$) | --- | 10 | μAdc |
| I_{EBO} | Emitter-Base Cutoff Current ($V_{EB}=7.0\text{Vdc}$, $I_C=0$) | --- | 10 | μAdc |
| h_{FE-1} | DC Current Gain ($I_C=2.0\text{Adc}$, $V_{CE}=1.0\text{Vdc}$) | 100 | 400 | |
| h_{FE-2} | DC Current Gain ($I_C=0.1\text{Adc}$, $V_{CE}=1.0\text{Vdc}$) | 60 | --- | |
| h_{FE-3} | DC Current Gain ($I_C=5.0\text{Adc}$, $V_{CE}=1.0\text{Vdc}$) | 50 | --- | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage $I_C=2.0\text{Adc}$, $I_B=0.2\text{Adc}$ | --- | 0.3 | Vdc |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage $I_C=2.0\text{Adc}$, $I_B=0.2\text{Adc}$ | --- | 1.2 | Vdc |
| t_{on} | Turn ON Time | $V_{CC} = 10\text{V}$, $I_C = 2\text{A}$, $I_{B1} = -I_{B2} = 0.2\text{A}$, $R_L = 5\Omega$ | | |
| t_{stg} | Storage Time | | | |
| t_f | Fall Time | | | |

CLASSIFICATION OF $h_{FE(1)}$

| RANK | O | Y | G |
|-------|---------|---------|---------|
| RANGE | 100-200 | 160-320 | 200-400 |

NPN
Plastic-Encapsulate
Transistors

TO-126



| DIM | DIMENSIONS | | | | NOTE |
|-----|------------|-------|----------|-------|------|
| | INCHES | | MM | | |
| A | 0.291 | 0.307 | 7.40 | 7.80 | |
| B | 0.417 | 0.433 | 10.60 | 11.00 | |
| C | 0.602 | 0.618 | 15.30 | 15.70 | |
| D | 0.154 | 0.161 | 3.90 | 4.10 | |
| E | 0.118 | 0.126 | 3.00 | 3.20 | |
| F | 0.026 | 0.034 | 0.66 | 0.86 | |
| G | 0.046 | 0.054 | 1.17 | 1.37 | |
| J | 0.090TYP | | 2.290TYP | | |
| K | 0.098 | 0.114 | 2.50 | 2.90 | |
| L | 0.083 | 0.091 | 2.10 | 2.30 | |
| M | 0.000 | 0.012 | 0.00 | 0.30 | |
| N | 0.043 | 0.059 | 1.10 | 1.50 | |
| Q | 0.018 | 0.024 | 0.45 | 0.60 | |



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Ordering Information :

| Device | Packing |
|----------------|-----------------|
| Part Number-BP | Bulk; 1Kpcs/Box |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-BP-HF

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