

DESCRIPTION

- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 0.5V(\text{Max.}) @ I_C = 1A$
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 150V(\text{Min})$
- Wide Area of Safe Operation

APPLICATIONS

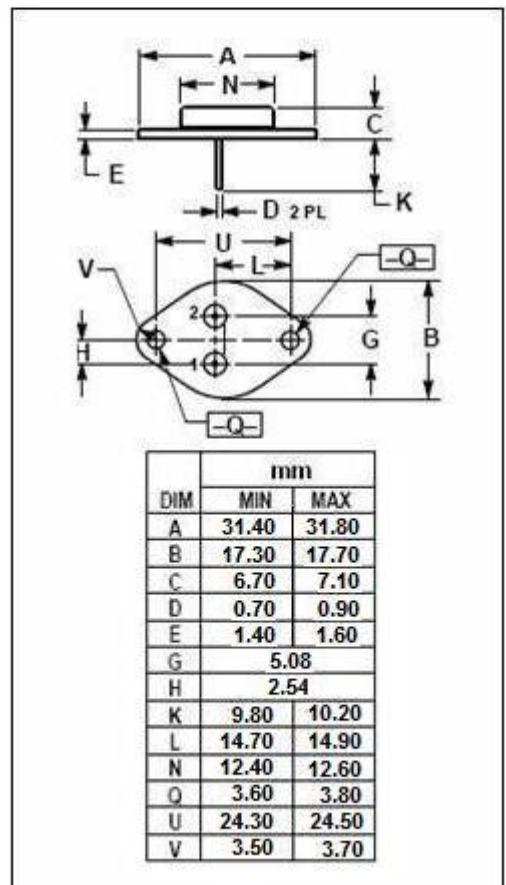
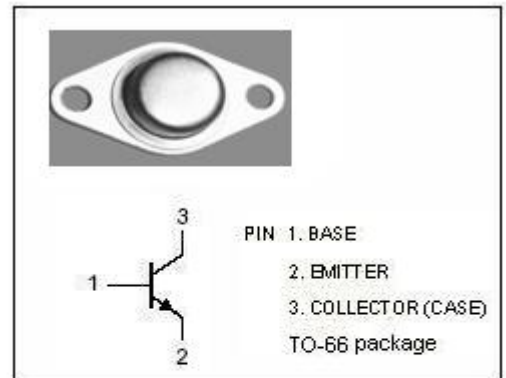
- Series and shunt regulators
- High-fidelity amplifiers
- Power switching circuits
- Solenoid drivers

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------|
| V_{CBO} | Collector-Base Voltage | 170 | V |
| V_{CEO} | Collector-Emitter Voltage | 150 | V |
| V_{CER} | Collector-Emitter Voltage $R_{BE} = 100 \Omega$ | 160 | V |
| V_{CEV} | Collector-Emitter Voltage $V_{BE} = -1.5V$ | 170 | V |
| V_{EBO} | Emitter-Base Voltage | 7 | V |
| I_C | Collector Current-Continuous | 3 | A |
| I_{CM} | Collector Current-Peak | 4 | A |
| I_B | Base Current-Continuous | 2 | A |
| P_C | Collector Power Dissipation@ $T_C = 25^\circ C$ | 50 | W |
| T_J | Junction Temperature | 150 | $^\circ C$ |
| T_{stg} | Storage Temperature | -65~150 | $^\circ C$ |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|--------------|--------------------------------------|-----|--------------|
| $R_{th j-c}$ | Thermal Resistance, Junction to Case | 3.5 | $^\circ C/W$ |



ELECTRICAL CHARACTERISTICS

T_C=25°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|-----------------------|---|---|-------|-------------|------|
| V _{CEO(SUS)} | Collector-Emitter Sustaining Voltage | I _C = 50mA; I _B = 0 | 150 | | V |
| V _{CER(SUS)} | Collector-Emitter Sustaining Voltage | I _C = 100mA; R _{BE} = 100 Ω | 160 | | V |
| V _{CEV(SUS)} | Collector-Emitter Sustaining Voltage | I _C = 100mA; V _{BE} = -1.5V | 170 | | V |
| V _{CE(sat)} | Collector-Emitter Saturation Voltage | I _C = 1A; I _B = 0.1A | | 0.5 | V |
| V _{BE(on)} | Base-Emitter On Voltage | I _C = 1A; V _{CE} = 2V | | 1.5 | V |
| I _{CEO} | Collector Cutoff Current | V _{CE} = 130V; I _B = 0 | | 1.0 | mA |
| I _{CEX} | Collector Cutoff Current | V _{CE} = 150V; V _{BE} = -1.5V V _{CE} = 150V; V _{BE} = -1.5V, T _C =150°C | | 0.05 1.0 | mA |
| I _{EBO} | Emitter Cutoff Current | V _{EB} = 7V; I _C = 0 | | 0.2 | mA |
| h _{FE-1} | DC Current Gain | I _C = 1A ; V _{CE} = 2V | 20 | 60 | |
| h _{FE-2} | DC Current Gain | I _C = 3A; V _{CE} = 2V | 5 | | |
| f _T | Current Gain-Bandwidth Product | I _C = 0.2A ; V _{CE} = 4V | 0.2 | | MHz |
| I _{s/b} | Second Breakdown Collector Current with Base Forward Biased | V _{CE} = 120V,t= 1.0s,Nonrepetitive | 0.417 | | A |