

isc Silicon NPN Darlington Power Transistor

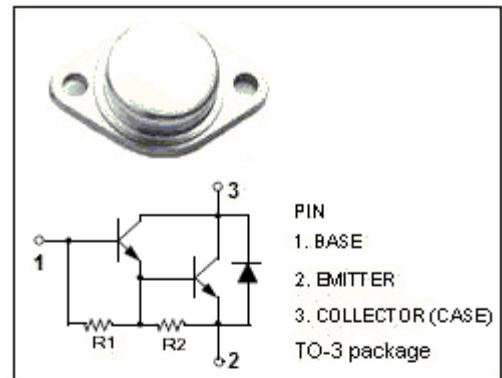
MJ11032

DESCRIPTION

- Collector-Emitter Breakdown Voltage
: $V_{(BR)CEO} = 120V(\text{Min.})$
- High DC Current Gain-
: $h_{FE} = 1000(\text{Min.}) @ I_C = 25A$
: $h_{FE} = 400(\text{Min.}) @ I_C = 50A$
- Complement to Type MJ11033

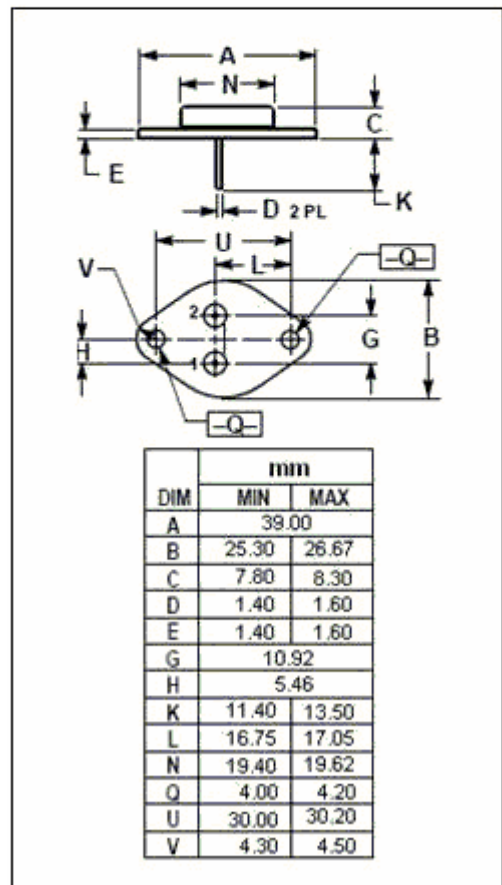
APPLICATIONS

- Designed for use as output devices in complementary general purpose amplifier applications.



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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--|----------|------------|
| V_{CBO} | Collector-Base Voltage | 120 | V |
| V_{CEO} | Collector-Emitter Voltage | 120 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current-Continuous | 50 | A |
| I_{CM} | Collector Current-Peak | 100 | A |
| I_B | Base Current-Continuous | 2 | A |
| P_C | Collector Power Dissipation @ $T_C = 25^\circ C$ | 300 | W |
| T_j | Junction Temperature | 200 | $^\circ C$ |
| T_{stg} | Storage Temperature Range | -55~+200 | $^\circ C$ |



THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|--------------|--------------------------------------|-------|--------------|
| $R_{th j-c}$ | Thermal Resistance, Junction to Case | 0.584 | $^\circ C/W$ |

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ELECTRICAL CHARACTERISTICS

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

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|-----------------|--------------------------------------|---|------|------|------------|------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C=0.1\text{A}; I_B=0$ | 120 | | | V |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C=25\text{A}; I_B=250\text{mA}$ | | | 2.5 | V |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C=50\text{A}; I_B=500\text{mA}$ | | | 3.5 | V |
| $V_{BE(sat)-1}$ | Base-Emitter Saturation Voltage | $I_C=25\text{A}; I_B=250\text{mA}$ | | | 3.0 | V |
| $V_{BE(sat)-2}$ | Base-Emitter Saturation Voltage | $I_C=50\text{A}; I_B=500\text{mA}$ | | | 4.5 | V |
| I_{CER} | Collector Cutoff Current | $V_{CE}=120\text{V}; R_{BE}=1\text{k}\Omega$ $V_{CE}=120\text{V}; R_{BE}=1\text{k}\Omega; T_C=150^{\circ}\text{C}$ | | | 2.0 5.0 | mA |
| I_{CEO} | Collector Cutoff Current | $V_{CE}=50\text{V}; I_B=0$ | | | 2.0 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}=5\text{V}; I_C=0$ | | | 5.0 | mA |
| h_{FE-1} | DC Current Gain | $I_C=25\text{A}, V_{CE}=5\text{V}$ | 1000 | | 18000 | |
| h_{FE-2} | DC Current Gain | $I_C=50\text{A}, V_{CE}=5\text{V}$ | 400 | | | |