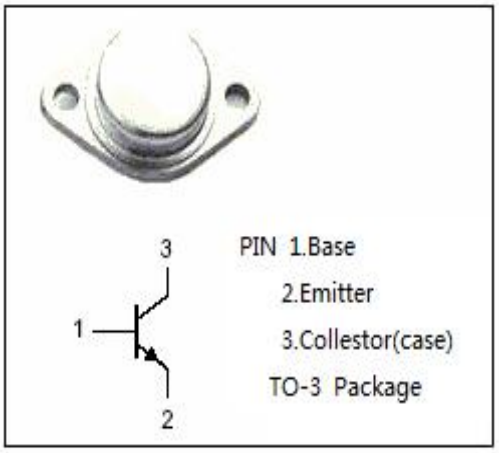
# *isc* Silicon NPN Power Transistor 2SD873

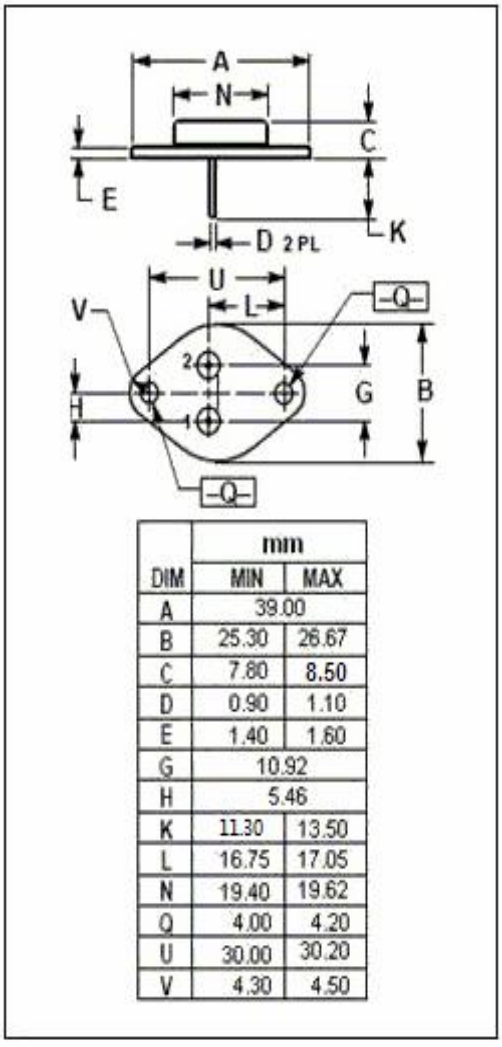
## DESCRIPTION

- Collector-Emitter Breakdown Voltage-
  : $V_{(BR)CEO}$= 140V (Min)
- High Power Dissipation
- High Current Capability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

- High power amplifier applications.
- High power switching applications.
- DC-DC converter applications.
- Regulator applications.




| DIM | mm MIN | MAX |
|---|---|---|
| A | 39.00 | |
| B | 25.30 | 26.67 |
| C | 7.80 | 8.50 |
| D | 0.90 | 1.10 |
| E | 1.40 | 1.60 |
| G | 10.92 | |
| H | 5.46 | |
| K | 11.30 | 13.50 |
| L | 16.75 | 17.05 |
| N | 19.40 | 19.62 |
| Q | 4.00 | 4.20 |
| U | 30.00 | 30.20 |
| V | 4.30 | 4.50 |

## ABSOLUTE MAXIMUM RATINGS($T_a$=25℃)

| SYMBOL | PARAMETER | MAX | UNIT |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 160 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 140 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 7 | V |
| $I_C$ | Collector Current-Continuous | 16 | A |
| $I_B$ | Base Current-Continuous | 4 | A |
| $P_C$ | Collector Power Dissipation @$T_C$=25℃ | 150 | W |
| $T_j$ | Junction Temperature | 175 | ℃ |
| $T_{stg}$ | Storage Temperature Range | -65~175 | ℃ |

# isc Silicon NPN Power Transistor 2SD873

## ELECTRICAL CHARACTERISTICS

**$T_C$=25℃ unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---|---|---|---|---|---|---|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$= 10mA; $I_B$= 0 | 140 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$= 8A; $I_B$= 0.8A | | 0.4 | 1.4 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C$= 8A; $V_{CE}$= 4V | | 1.2 | 2.2 | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$= 140V; $I_E$= 0 | | | 0.1 | mA |
| $I_{EBO}$ | Emitter Cutoff Current | $V_{EB}$= 7V; $I_C$= 0 | | | 0.1 | mA |
| $h_{FE-1}$ | DC Current Gain | $I_C$= 8A; $V_{CE}$= 4V | 15 | | 60 | |
| $h_{FE-2}$ | DC Current Gain | $I_C$= 16A; $V_{CE}$= 4V | 5 | | | |
| $C_{OB}$ | Output Capacitance | $I_E$= 0; $V_{CB}$= 10V; $f_{test}$= 1.0MHz | | 350 | | pF |
| $f_T$ | Current-Gain—Bandwidth Product | $I_C$= 1A; $V_{CE}$= 4V | | 1.5 | | MHz |
| Switching Times | | | | | | |
| $t_{on}$ | Turn-on Time | $V_{CC}$= 50V, $R_L$= 10Ω, $I_{B1}$= $I_{B2}$= 0.5A | | 2.5 | | μs |
| $t_{stg}$ | Storage Time | | | 4.5 | | |
| $t_f$ | Fall Time | | | 1.4 | | |

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