

isc Silicon NPN Power Transistor

2SD878

DESCRIPTION

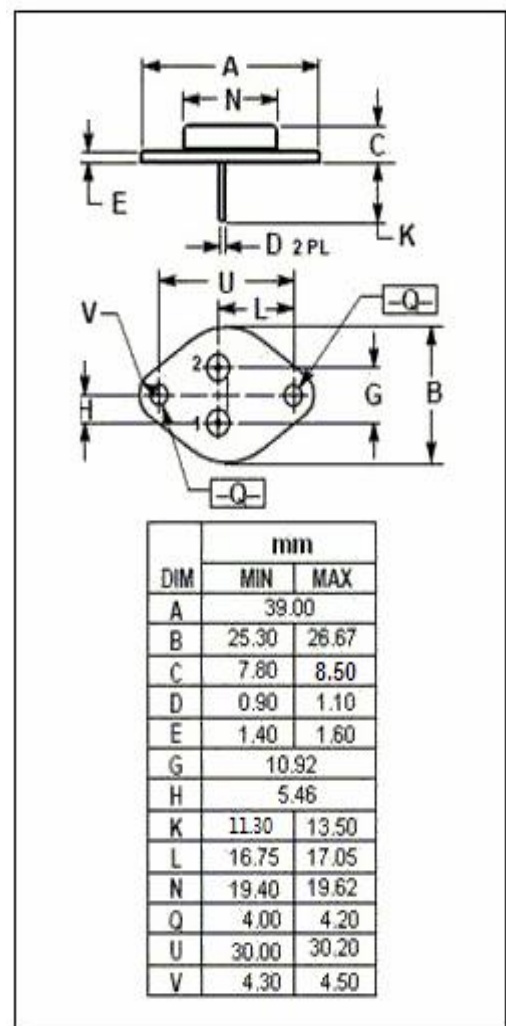
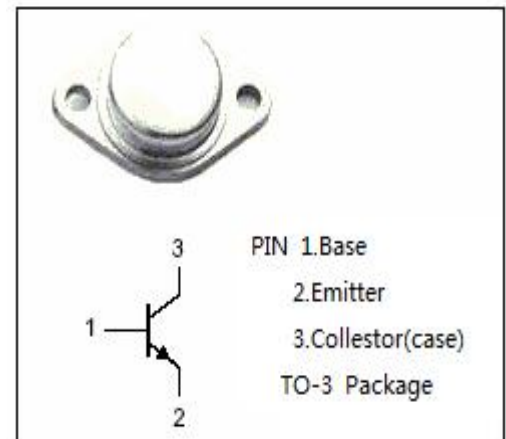
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 60V$ (Min)
- High Power Dissipation
- High Current Capability
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

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

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

| SYMBOL | PARAMETER | MAX | UNIT |
|-----------|--|---------|-------------|
| V_{CBO} | Collector-Base Voltage | 100 | V |
| V_{CEO} | Collector-Emitter Voltage | 60 | V |
| V_{EBO} | Emitter-Base Voltage | 7 | V |
| I_C | Collector Current-Continuous | 15 | A |
| I_B | Base Current-Continuous | 7 | A |
| P_C | Collector Power Dissipation @ $T_C=25^{\circ}C$ | 115 | W |
| T_j | Junction Temperature | 175 | $^{\circ}C$ |
| T_{stg} | Storage Temperature Range | -65~175 | $^{\circ}C$ |



isc Silicon NPN Power Transistor**2SD878****ELECTRICAL CHARACTERISTICS****T_C=25°C unless otherwise specified**

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------------|--------------------------------------|---|-----|------|-----|------|
| V _{(BR)CEO} | Collector-Emitter Breakdown Voltage | I _C = 10mA; I _B = 0 | 60 | | | V |
| V _{CE(sat)} | Collector-Emitter Saturation Voltage | I _C = 4A; I _B = 0.4A | | 0.3 | 1.1 | V |
| V _{BE(on)} | Base-Emitter On Voltage | I _C = 4A; V _{CE} = 4V | | 1.1 | 1.8 | V |
| I _{CBO} | Collector Cutoff Current | V _{CB} = 100V; 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 = 4A; V _{CE} = 4V | 20 | | 70 | |
| h _{FE-2} | DC Current Gain | I _C = 10A; V _{CE} = 4V | 5 | | | |
| C _{OB} | Output Capacitance | I _E = 0; V _{CB} = 10V; f _{test} = 1.0MHz | | 150 | | 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 = 10 Ω, I _{B1} = I _{B2} = 0.5A | | 2.5 | | μs |
| t _{stg} | Storage Time | | | 3.5 | | |
| t _f | Fall Time | | | 1.2 | | |

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