

isc Silicon NPN Power Transistor
2SD414
DESCRIPTION

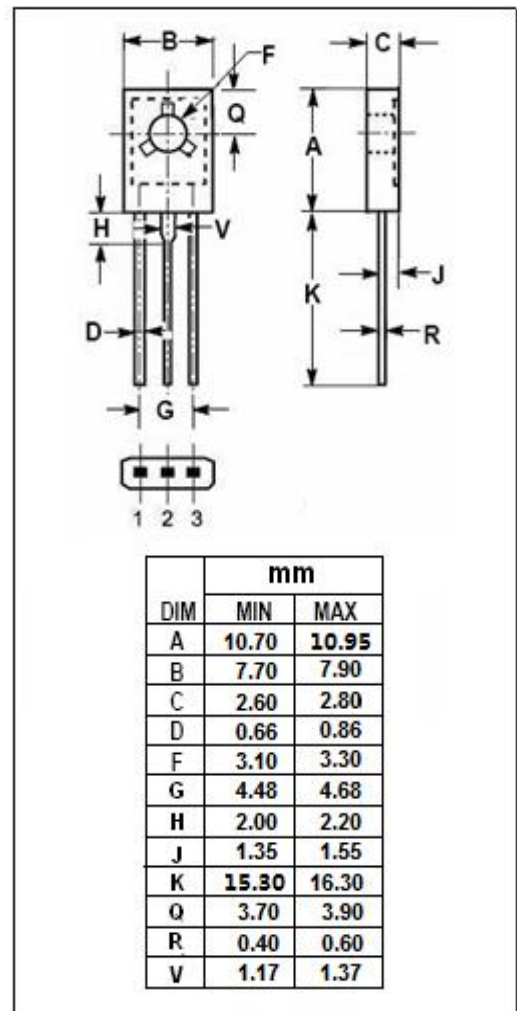
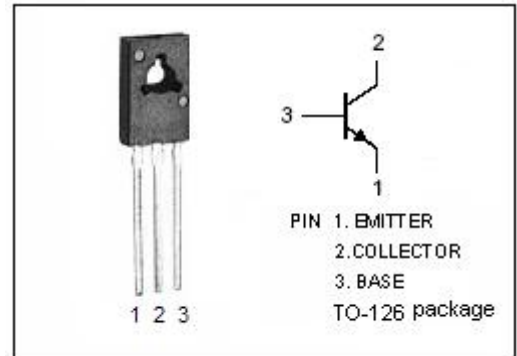
- With TO-126 packaging
- Excellent linearity of h_{FE}
- Low collector-to-emitter saturation voltage
- Fast switching speed
- Complementary to 2SB548
- Minimum Lot-to-Lot variations for robust device performance and reliable operation.

APPLICATIONS

- Relay drivers, high-speed inverters , converters and Other general high current switching applications

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|------------------------------|---------|--------------------|
| V_{CBO} | Collector-Base Voltage | 120 | V |
| V_{CEO} | Collector-Emitter Voltage | 80 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current-Continuous | 0.8 | A |
| I_{CP} | Collector Current-Pulse | 1.5 | A |
| P_C | Collector Power Dissipation | 1.0 | W |
| T_J | Junction Temperature | 150 | $^{\circ}\text{C}$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^{\circ}\text{C}$ |



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ELECTRICAL CHARACTERISTICS

 T_C=25°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------------|--------------------------------------|---|-----|------|-----|------|
| V _{CB0} | Collector-Base Voltage | I _C =0.1mA, I _E =0 | 120 | | | V |
| V _{CEO} | Collector-Emitter Voltage | I _C =1mA, I _B =0 | 80 | | | V |
| V _{EBO} | Emitter-Base Voltage | I _E =0.1mA, I _C =0 | 5 | | | V |
| V _{CE(sat)} | Collector-Emitter Saturation Voltage | I _C = 500mA; I _B =50mA | | 0.3 | 2.0 | V |
| V _{BE(sat)} | Base-Emitter Saturation Voltage | I _C = 500mA; I _B =50mA | | 0.9 | 1.5 | V |
| I _{CB0} | Collector Cutoff Current | V _{CB} = 80V; I _E = 0 | | | 1.0 | μ A |
| I _{EBO} | Emitter Cutoff Current | V _{EB} = 3V; I _C = 0 | | | 1.0 | μ A |
| h _{FE-1} | DC Current Gain | I _C = 2mA ; V _{CE} = 5V | 20 | | | |
| h _{FE-2} | DC Current Gain | I _C = 200mA ; V _{CE} = 5V | 40 | | 320 | |

◆ h_{FE-2} Classifications

| S | R | Q | P |
|-------|--------|---------|---------|
| 40-80 | 60-120 | 100-200 | 160-320 |

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