

isc Silicon NPN Power Transistor

2SC5148

DESCRIPTION

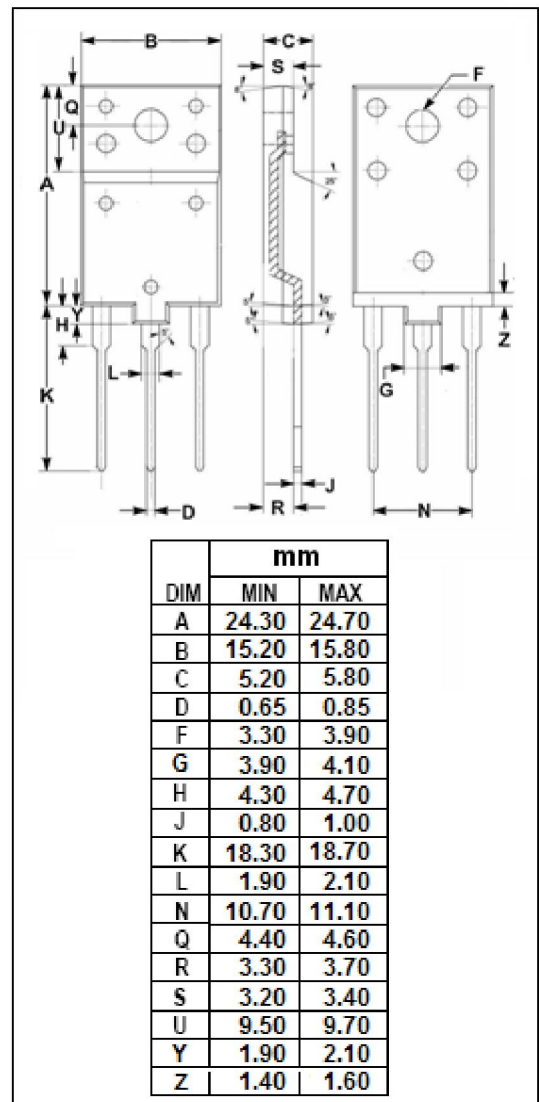
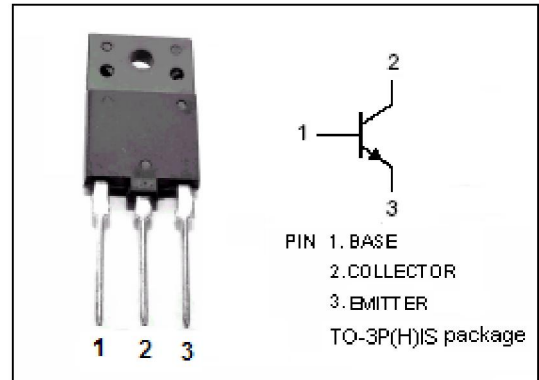
- High Breakdown Voltage-
: $V_{CBO} = 1500V$ (Min)
- High Switching Speed
- Low Saturation Voltage

APPLICATIONS

- Horizontal deflection output for high resolution display, color TV
- High speed switching applications

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---------------------------------------------------|---------|------------|
| V_{CBO} | Collector-Base Voltage | 1500 | V |
| V_{CEO} | Collector-Emitter Voltage | 600 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current- Continuous | 8 | A |
| I_{CP} | Collector Current-Pulse | 16 | A |
| I_B | Base Current- Continuous | 4 | A |
| P_C | Collector Power Dissipation @ $T_c=25^\circ C$ | 50 | W |
| T_J | Junction Temperature | 150 | $^\circ C$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ C$ |



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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 | $I_C=10\text{mA}; I_B=0$ | 600 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=5\text{A}; I_B=1.3\text{A}$ | | | 5.0 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C=5\text{A}; I_B=1.3\text{A}$ | | | 1.3 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB}=1500\text{V}; I_E=0$ | | | 1.0 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}=5\text{V}; I_C=0$ | | | 10 | μA |
| h_{FE-1} | DC Current Gain | $I_C=1\text{A}; V_{CE}=5\text{V}$ | 8 | | 25 | |
| h_{FE-2} | DC Current Gain | $I_C=5\text{A}; V_{CE}=5\text{V}$ | 3.8 | | 8.0 | |
| f_T | Current-Gain—Bandwidth Product | $I_C=0.1\text{A}; V_{CE}=10\text{V}$ | | 2 | | MHz |
| C_{OB} | Output Capacitance | $I_E=0; V_{CB}=10\text{V}; f_{test}=1.0\text{MHz}$ | | 110 | | pF |

Switching times

| | | | | | | |
|-----------|--------------|----------------------------------------------------------|--|--|-----|---------------|
| t_{stg} | Storage Time | $I_{CP}=4\text{A}, I_{B1}=0.8\text{A}; f_H=64\text{kHz}$ | | | 4.0 | μs |
| t_f | Fall Time | | | | 0.3 | μs |

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