

SPTECH Silicon NPN Power Transistor

2SD998

DESCRIPTION

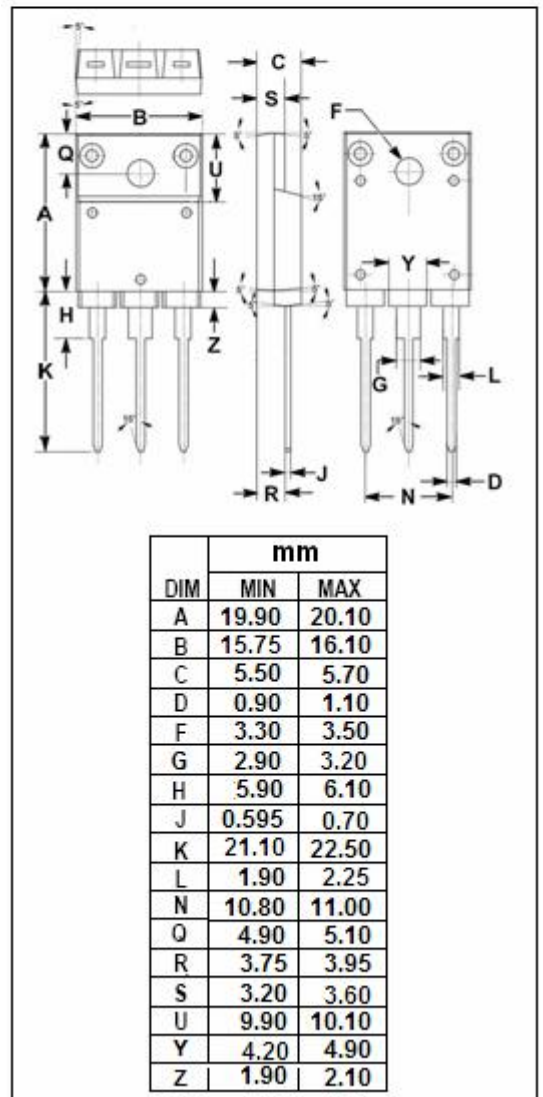
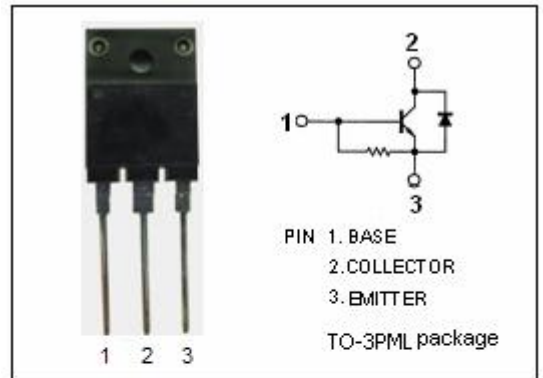
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 50V(\text{Min})$
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 0.5V(\text{Max}) @ I_C = 5A$

APPLICATIONS

- Designed for DC-DC converter, emergency lighting inverter and general purpose applications

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 100 | V |
| V_{CEO} | Collector-Emitter Voltage | 120 | V |
| V_{EBO} | Emitter-Base Voltage | 15 | V |
| I_C | Collector Current-Continuous | 10 | A |
| I_{CP} | Collector Current-Peak | 25 | A |
| I_B | Base Current-Continuous | 4 | A |
| P_C | Collector Power Dissipation @ $T_C = 25^\circ\text{C}$ | 80 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ\text{C}$ |



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 | $I_C= 25\text{mA}; I_B= 0$ | 50 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C= 5\text{A}; I_B= 80\text{mA}$ | | | 0.5 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C= 5\text{A}; I_B= 80\text{mA}$ | | | 1.2 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB}= 100\text{V}; I_E= 0$ | | | 10 | μA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}= 15\text{V}; I_C= 0$ | | | 10 | μA |
| h_{FE} | DC current gain | $I_C= 5\text{A}; V_{CE}= 1\text{V}$ | 60 | | 360 | |
| f_T | Current-Gain—Bandwidth Product | $I_E= -1\text{A}; V_{CE}= 12\text{V}$ | | 18 | | MHz |
| C_{OB} | Output Capacitance | $I_E=0; V_{CB}= 10\text{V}; f_{test}= 1.0\text{MHz}$ | | 210 | | pF |

Switching times

| | | | | | | |
|-----------|--------------|--|--|-----|--|---------------|
| t_{on} | Turn-on Time | $I_C= 5\text{A}, I_{B1}= 80\text{mA}; I_{B2}= 80\text{mA}$ $R_L= 4\Omega; V_{CC}= 20\text{V}$ | | 0.5 | | μs |
| t_{stg} | Storage Time | | | 2.0 | | μs |
| t_f | Fall Time | | | 0.4 | | μs |

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