

isc Silicon NPN Darlington Power Transistor

2SD1141

DESCRIPTION

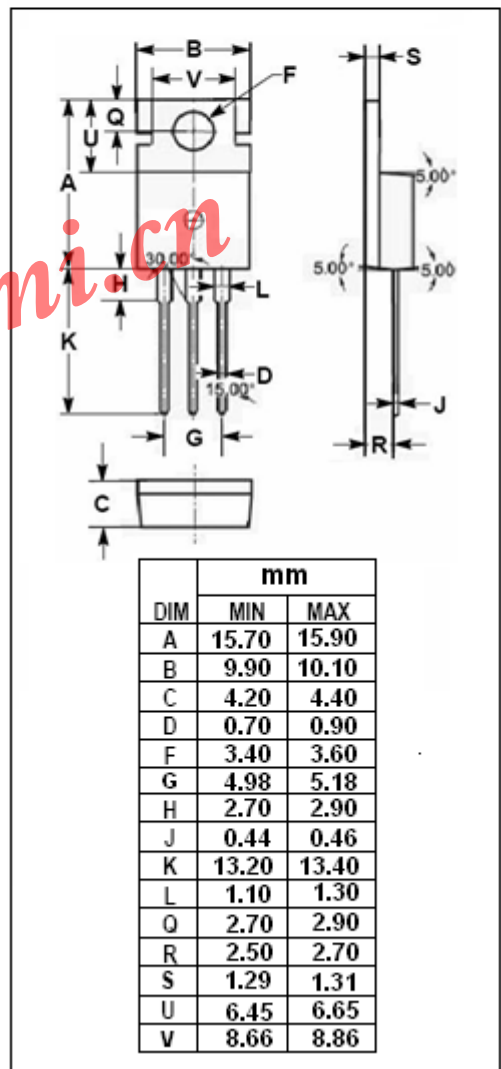
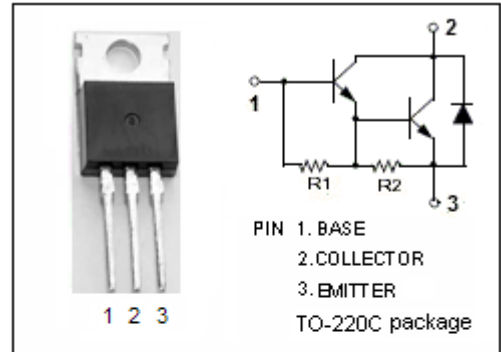
- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 300V(\text{Min})$
- High DC Current Gain
: $h_{FE} = 500(\text{Min}) @ I_C = 4A$

APPLICATIONS

- Designed for high voltage switching, igniter applications.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 400 | V |
| V_{CEO} | Collector-Emitter Voltage | 300 | V |
| V_{EBO} | Emitter-Base Voltage | 7 | V |
| I_C | Collector Current-Continuous | 6 | A |
| I_{CM} | Collector Current-Peak | 10 | A |
| P_C | Collector Power Dissipation @ $T_C=25^\circ\text{C}$ | 40 | W |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ\text{C}$ |



isc Silicon NPN Darlington Power Transistor**2SD1141****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---------------|--------------------------------------|---|-----|------|-----|---------------|
| $V_{CE(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=3\text{A}$; $L=10\text{mH}$, $PW=50\mu\text{s}$; $f=50\text{Hz}$ | 300 | | | V |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C=0.1\text{mA}$; $I_E=0$ | 400 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_E=50\text{mA}$; $I_C=0$ | 7 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C=4\text{A}$; $I_B=40\text{mA}$ | | | 1.5 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C=4\text{A}$; $I_B=40\text{mA}$ | | | 2.0 | V |
| I_{CEO} | Collector Cutoff Current | $V_{CE}=300\text{V}$; $R_{BE}=\infty$ | | | 100 | μA |
| h_{FE} | DC Current Gain | $I_C=4\text{A}$; $V_{CE}=2\text{V}$ | 500 | | | |

Switching times

| | | | | | | |
|-----------|---------------|--|--|-----|--|---------------|
| t_{on} | Turn-on Time | $I_C=4\text{A}$, $I_{B1}=-I_{B2}=40\text{mA}$ | | 2.0 | | μs |
| t_{off} | Turn-Off Time | | | 23 | | μs |