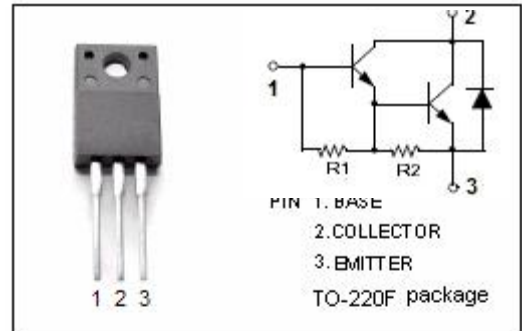


isc Silicon NPN Darlington Power Transistor

TTD1409B

DESCRIPTION

- Collector–Emitter Breakdown Voltage—
: $V_{(BR)CEO} = 400V(\text{Min})$
- High DC Current Gain—
: $h_{FE} = 600(\text{Min}) @ I_C = 2A$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

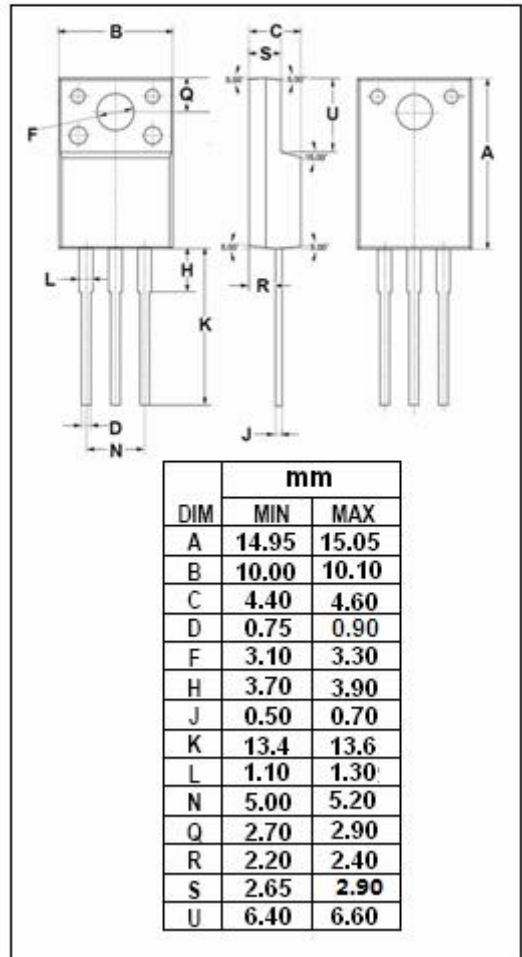


APPLICATIONS

- Designed for use high-voltage switching applications.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 600 | V |
| V_{CEO} | Collector-Emitter Voltage | 400 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current-Continuous | 6 | A |
| I_{CM} | Collector Current-Peak | 10 | A |
| I_B | Base Current-Continuous | 1 | A |
| P_C | Collector Power Dissipation $T_a=25^\circ\text{C}$ | 2 | W |
| | Collector Power Dissipation $T_C=25^\circ\text{C}$ | 25 | |
| T_j | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature Range | -55~150 | $^\circ\text{C}$ |



isc Silicon NPN Darlington Power Transistor
TTD1409B
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 | 400 | | | V |
| V _{(BR)EBO} | Emitter-Base Breakdown Voltage | I _E = 3mA; I _C = 0 | 5 | | | V |
| V _{CE(sat)} | Collector-Emitter Saturation Voltage | I _C = 4A; I _B = 40mA | | | 2.0 | V |
| V _{BE(sat)} | Base-Emitter Saturation Voltage | I _C = 4A; I _B = 40mA | | | 2.5 | V |
| I _{CB0} | Collector Cutoff Current | V _{CB} = 600V; I _E = 0 | | | 20 | uA |
| I _{EBO} | Emitter Cutoff Current | V _{EB} = 5V; I _C = 0 | | | 3.0 | mA |
| h _{FE-1} | DC Current Gain | I _C = 2A ; V _{CE} = 2V | 600 | | | |
| h _{FE-2} | DC Current Gain | I _C = 4A ; V _{CE} = 2V | 100 | | | |
| C _{OB} | Output Capacitance | I _E =0; V _{CB} = 50V, f _{test} = 1MHz | | 35 | | pF |

Switching times

| | | | | | | |
|------------------|--------------|---|--|---|--|-----|
| t _{on} | Turn-on Time | I _{B1} = I _{B2} = 0.04A; R _L = 25 Ω ; V _{CC} ≈ 100V Duty Cycle ≤ 1% | | 1 | | μ s |
| t _{stg} | Storage Time | | | 8 | | μ s |
| t _f | Fall Time | | | 5 | | μ s |

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