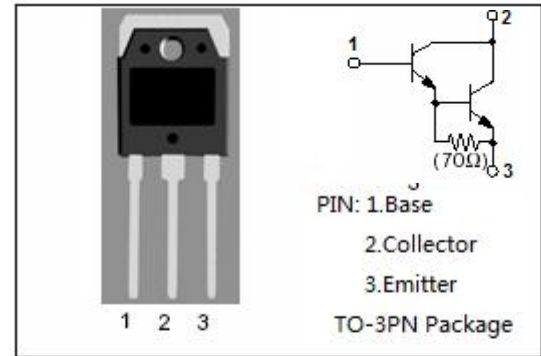


isc Silicon NPN Darlington Power Transistor
2SD2389
DESCRIPTION

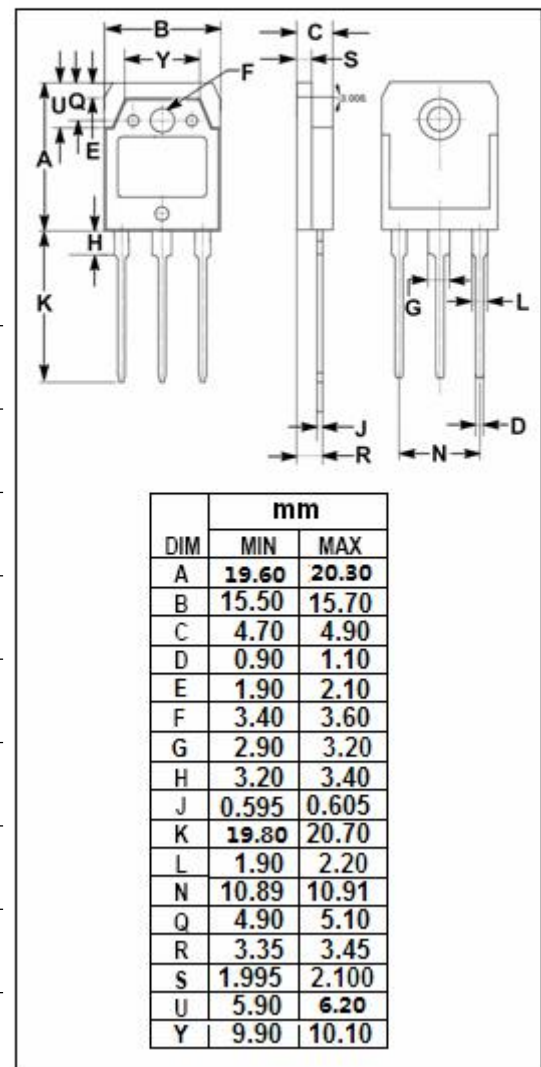
- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 150V(\text{Min})$
- High DC Current Gain-
: $h_{FE} = 5000(\text{Min.}) @ (I_C = 6A, V_{CE} = 4V)$
- Low Collector Saturation Voltage-
: $V_{CE(sat)} = 2.5V(\text{Max}) @ (I_C = 6A, I_B = 6mA)$
- Complement to Type 2SB1559
- Minimum Lot-to-Lot variations for robust device performance and reliable operation


APPLICATIONS

- Designed for audio, series regulator and general purpose applications.

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|---|---------|------------------|
| V_{CBO} | Collector-Base Voltage | 160 | V |
| V_{CEO} | Collector-Emitter Voltage | 150 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current-Continuous | 8 | A |
| I_B | Base Current-Continuous | 1 | 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 | -55~150 | $^\circ\text{C}$ |



isc Silicon NPN Darlington Power Transistor

2SD2389

ELECTRICAL CHARACTERISTICS

T_j=25°C unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|----------------------|--------------------------------------|---|------|------|-----|------|
| V _{(BR)CEO} | Collector-Emitter Breakdown Voltage | I _C = 30mA ; I _B = 0 | 150 | | | V |
| V _{CE(sat)} | Collector-Emitter Saturation Voltage | I _C = 6A; I _B = 6mA | | | 2.5 | V |
| V _{BE(sat)} | Base-Emitter Saturation Voltage | I _C = 6A; I _B = 6mA | | | 3.0 | V |
| I _{CBO} | Collector Cutoff Current | V _{CB} = 160V; I _E = 0 | | | 100 | μ A |
| I _{EBO} | Emitter Cutoff Current | V _{EB} = 5V; I _C = 0 | | | 100 | μ A |
| h _{FE} | DC Current Gain | I _C = 6A; V _{CE} = 4V | 5000 | | | |
| C _{OB} | Output Capacitance | I _E = 0; V _{CB} = 10V; f _{test} = 1MHz | | 85 | | pF |
| f _T | Current-Gain—Bandwidth Product | I _E = -1A; V _{CE} = 12V | | 80 | | MHz |

◆ h_{FE} Classifications

| O | P | Y |
|------------|------------|-------------|
| 5000-12000 | 6500-20000 | 15000-30000 |

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