



## NPN 2N3773

### HIGH POWER TRANSISTOR

The 2N3773 is silicon planar NPN transistor in Jedec TO-3 metal case. They are intended for linear amplifiers and inductive switching applications. Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

| Symbol    | Ratings                   |                    | Value       | Unit       |
|-----------|---------------------------|--------------------|-------------|------------|
| $V_{CEO}$ | Collector-Emitter Voltage | $I_B = 0$          | 140         | V          |
| $V_{CBO}$ | Collector-Base Voltage    | $I_E = 0$          | 160         | V          |
| $V_{EBO}$ | Emitter-Base Voltage      | $I_C = 0$          | 7           | V          |
| $V_{CEX}$ | Collector-Emitter Voltage | $V_{BE} = -1.5V$   | 160         | V          |
| $I_C$     | Collector Current         |                    | 16          | A          |
| $I_{CM}$  | Collector Peak Current    |                    | 30          | A          |
| $I_B$     | Base Current              |                    | 4           | A          |
| $I_{BM}$  | Base Peak Current         |                    | 15          | A          |
| $P_t$     | Total Power Dissipation   | @ $T_C = 25^\circ$ | 150         | W          |
| $T_J$     | Junction Temperature      |                    | 150         | $^\circ C$ |
| $T_{Stg}$ | Storage Temperature       |                    | -65 to +200 | $^\circ C$ |

#### ELECTRICAL CHARACTERISTICS

$T_C = 25^\circ C$  unless otherwise noted

| Symbol         | Ratings                                  | Test Condition(s)                                                    | Min | Typ | Max | Unit |
|----------------|------------------------------------------|----------------------------------------------------------------------|-----|-----|-----|------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage (*) | $I_C = 200 \text{ mA}, I_B = 0$                                      | 140 | -   | -   | V    |
| $I_{CEO}$      | Collector Cutoff Current                 | $V_{CE} = 140 \text{ V}, I_B = 0$                                    | -   | -   | 2   | mA   |
| $I_{CEX}$      | Collector Cutoff Current                 | $V_{CE} = 140 \text{ V}, V_{BE} = -1.5V$                             | -   | -   | 2   | mA   |
|                |                                          | $V_{CE} = 140 \text{ V}, V_{BE} = -1.5V$<br>$T_{case} = 150^\circ C$ | -   | -   | 10  |      |
| $I_{EBO}$      | Emitter Cutoff Current                   | $V_{EB} = 7 \text{ V}, I_C = 0$                                      | -   | -   | 5   | mA   |
| $h_{FE}$       | DC Current Gain (*)                      | $I_C = 8 \text{ A}, V_{CE} = 4 \text{ V}$                            | 15  | -   | 60  | -    |
|                |                                          | $I_C = 16 \text{ A}, V_{CE} = 4 \text{ V}$                           | 5   | -   | -   |      |
| $V_{CE(SAT)}$  | Collector-Emitter saturation Voltage (*) | $I_C = 8 \text{ A}, I_B = 800 \text{ mA}$                            | -   | -   | 1.4 | V    |
|                |                                          | $I_C = 16 \text{ A}, I_B = 3.2 \text{ A}$                            | -   | -   | 4   |      |
| $V_{BE}$       | Base-Emitter Voltage (*)                 | $I_C = 8 \text{ A}, V_{CE} = 4 \text{ V}$                            | -   | -   | 2.2 | V    |
| $I_{S/B}$      | Second breakdown collector current       | $V_{CE} = 100 \text{ V}, t_s = 1s$                                   | 1.5 | -   | -   | A    |

(\*) Pulse Duration = 300  $\mu s$ , Duty Cycle  $\leq 2\%$



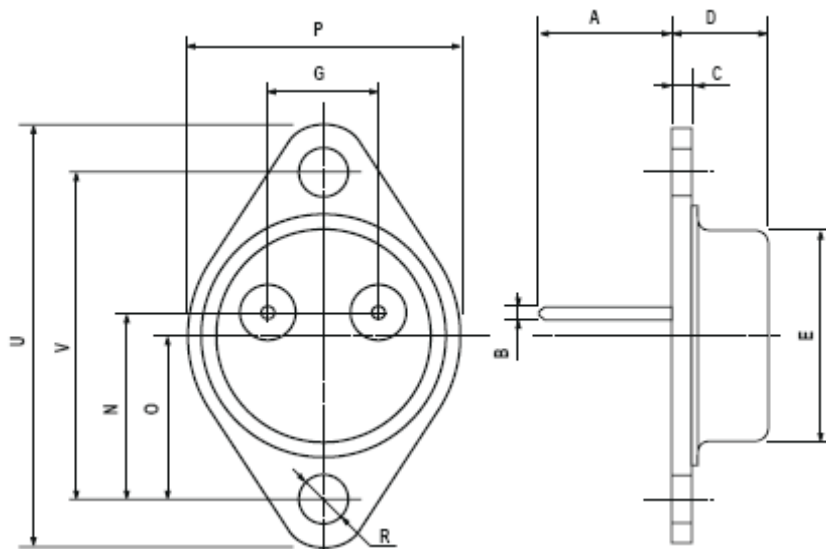
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### THERMAL CHARACTERISTICS

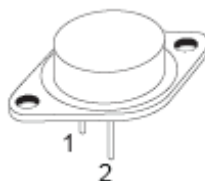
| Symbol     | Ratings                              | Value | Unit                 |
|------------|--------------------------------------|-------|----------------------|
| $R_{thJC}$ | Thermal Resistance, Junction to Case | 1.17  | $^{\circ}\text{C/W}$ |

### MECHANICAL DATA CASE TO-3

| DIMENSIONS (mm) |       |       |
|-----------------|-------|-------|
|                 | min   | max   |
| A               | 11    | 13.10 |
| B               | 0.97  | 1.15  |
| C               | 1.5   | 1.65  |
| D               | 8.32  | 8.92  |
| F               | 19    | 20    |
| G               | 10.70 | 11.1  |
| N               | 16.50 | 17.20 |
| P               | 25    | 26    |
| R               | 4     | 4.09  |
| U               | 38.50 | 39.30 |
| V               | 30    | 30.30 |



|         |           |
|---------|-----------|
| Pin 1 : | Base      |
| Pin 2 : | Emitter   |
| Case :  | Collector |



Revised August 2012

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