**2N6576**
**2N6577**
**2N6578**

**SILICON**
**NPN DARLINGTON**
**POWER TRANSISTORS**




**TO-3 CASE**

Central Semiconductor Corp.

www.centralsemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N6576, 2N6577, and 2N6578 are silicon NPN Darlington power transistors designed for general purpose switching applications.

**MARKING: FULL PART NUMBER**

| **MAXIMUM RATINGS:** ($T_C$=25°C) | **SYMBOL** | **2N6576** | **2N6577** | **2N6578** | **UNITS** |
|---|---|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 60 | 90 | 120 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 60 | 90 | 120 | V |
| Emitter-Base Voltage | $V_{EBO}$ | | 7.0 | | V |
| Continuous Collector Current | $I_C$ | | 15 | | A |
| Peak Collector Current | $I_{CM}$ | | 30 | | A |
| Continuous Base Current | $I_B$ | | 250 | | mA |
| Peak Base Current | $I_{BM}$ | | 500 | | mA |
| Continuous Emitter Current | $I_E$ | | 15.25 | | A |
| Peak Emitter Current | $I_{EM}$ | | 30.50 | | A |
| Power Dissipation | $P_D$ | | 120 | | W |
| Operating and Storage Junction Temperature | $T_J$, $T_{stg}$ | | -65 to +200 | | °C |
| Thermal Resistance | $\Theta_{JC}$ | | 1.46 | | °C/W |

**ELECTRICAL CHARACTERISTICS:** ($T_C$=25°C unless otherwise noted)

| **SYMBOL** | **TEST CONDITIONS** | **MIN** | **MAX** | **UNITS** |
|---|---|---|---|---|
| $I_{CBO}$ | $V_{CB}$=Rated $V_{CBO}$ | | 500 | μA |
| $I_{CEV}$ | $V_{CE}$=Rated $V_{CEO}$, $V_{EB}$=1.5V | | 5.0 | mA |
| $I_{CER}$ | $V_{CE}$=Rated $V_{CEO}$, $R_{BE}$=10kΩ, $T_C$=150°C | | 5.0 | mA |
| $I_{CEO}$ | $V_{CE}$=Rated $V_{CEO}$ | | 1.0 | mA |
| $I_{EBO}$ | $V_{EB}$=7.0V | | 7.5 | mA |
| $BV_{CEO}$ | $I_C$=200mA (2N6576) | 60 | | V |
| $BV_{CEO}$ | $I_C$=200mA (2N6577) | 90 | | V |
| $BV_{CEO}$ | $I_C$=200mA (2N6578) | 120 | | V |
| $V_{CE(SAT)}$ | $I_C$=10A, $I_B$=100mA | | 2.8 | V |
| $V_{CE(SAT)}$ | $I_C$=15A, $I_B$=150mA | | 4.0 | V |
| $V_{BE(SAT)}$ | $I_C$=10A, $I_B$=100mA | | 3.5 | V |
| $V_{BE(SAT)}$ | $I_C$=15A, $I_B$=150mA | | 4.5 | V |
| $h_{FE}$ | $V_{CE}$=3.0V, $I_C$=400mA | 200 | | |
| $h_{FE}$ | $V_{CE}$=3.0V, $I_C$=4.0A | 2.0K | 20K | |
| $h_{FE}$ | $V_{CE}$=3.0V, $I_C$=10A | 500 | 5.0K | |
| $h_{FE}$ | $V_{CE}$=4.0V, $I_C$=15A | 100 | | |

R1 (4-April 2014)

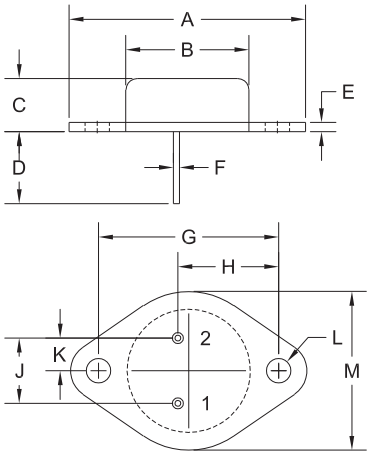
**2N6576**
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**ELECTRICAL CHARACTERISTICS:** ($T_C$=25°C unless otherwise noted)

| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
|---|---|---|---|---|
| $V_F$ | $I_{EC}$=15A | | 4.5 | V |
| $f_T$ | $V_{CE}$=3.0V, $I_C$=3.0A, f=1.0MHz | 10 | 200 | MHz |
| $t_d$ | $V_{CC}$=30V, $I_C$=10A, $I_{B1}$=100mA | | 0.15 | μs |
| $t_r$ | $V_{CC}$=30V, $I_C$=10A, $I_{B1}$=100mA | | 1.0 | μs |
| $t_s$ | $V_{CC}$=30V, $I_C$=10A, $I_{B1}$=$I_{B2}$=100mA | | 2.0 | μs |
| $t_f$ | $V_{CC}$=30V, $I_C$=10A, $I_{B1}$=$I_{B2}$=100mA | | 7.0 | μs |

## TO-3 CASE - MECHANICAL OUTLINE




| DIMENSIONS | | | | |
|---|---|---|---|---|
| | INCHES | | MILLIMETERS | |
| SYMBOL | MIN | MAX | MIN | MAX |
| A | 1.516 | 1.573 | 38.50 | 39.96 |
| B (DIA) | 0.748 | 0.875 | 19.00 | 22.23 |
| C | 0.250 | 0.450 | 6.35 | 11.43 |
| D | 0.433 | 0.516 | 11.00 | 13.10 |
| E | 0.054 | 0.065 | 1.38 | 1.65 |
| F | 0.035 | 0.045 | 0.90 | 1.15 |
| G | 1.177 | 1.197 | 29.90 | 30.40 |
| H | 0.650 | 0.681 | 16.50 | 17.30 |
| J | 0.420 | 0.440 | 10.67 | 11.18 |
| K | 0.205 | 0.225 | 5.21 | 5.72 |
| L (DIA) | 0.151 | 0.172 | 3.84 | 4.36 |
| M | 0.984 | 1.050 | 25.00 | 26.67 |

TO-3 (REV: R2)

R2

**LEAD CODE:**
1) Base
2) Emitter
Case) Collector

**MARKING:**
**FULL PART NUMBER**

R1 (4-April 2014)