



THE DATASHEET OF
2N5878



CentralTM Semiconductor Corp.

145 Adams Avenue, Hauppauge, NY 11788 USA
Tel: (631) 435-1110 • Fax: (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

2N5875 2N5876 PNP

2N5877 2N5878 NPN

COMPLEMENTARY SILICON
POWER TRANSISTORS

JEDEC TO-3 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5875, 2N5877 series types are Complementary Silicon Power Transistors manufactured by the epitaxial base process mounted in a hermetically sealed metal case designed for general purpose switching and amplifier applications.

MAXIMUM RATINGS ($T_C=25^\circ\text{C}$ unless otherwise noted)

| | SYMBOL | 2N5875 2N5877 | 2N5876 2N5878 | UNIT |
|---|----------------|------------------|------------------|---------------------------|
| Collector-Base Voltage | V_{CB0} | 60 | 80 | V |
| Collector-Emitter Voltage | V_{CEO} | 60 | 80 | V |
| Emitter-Base Voltage | V_{EBO} | 5.0 | | V |
| Collector Current | I_C | 10 | | A |
| Collector Current (PEAK) | I_C | 20 | | A |
| Base Current | I_B | 4.0 | | A |
| Power Dissipation | P_D | 150 | | W |
| Operating and Storage Junction Temperature | T_J, T_{stg} | -65 TO +200 | | $^\circ\text{C}$ |
| Thermal Resistance | θ_{JC} | 1.17 | | $^\circ\text{C}/\text{W}$ |

ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$ unless otherwise noted)

| SYMBOL | TEST CONDITIONS | 2N5875 | | 2N5876 | | UNIT |
|----------------------|---|--------|--------|--------|--------|---------------|
| | | 2N5877 | 2N5877 | 2N5878 | 2N5878 | |
| I_{CEV} | $V_{CE}=\text{Rated } V_{CE0}, V_{BE}(\text{OFF}) 1.5\text{V}$ | | 0.5 | | 0.5 | mA |
| I_{CEV} | $V_{CE}=\text{Rated } V_{CE0}, V_{BE}(\text{OFF})=1.5\text{V}, T_C=150^\circ\text{C}$ | | 5.0 | | 5.0 | mA |
| I_{CEO} | $V_{CE}=\frac{1}{2}\text{Rated } V_{CE0}$ | | 1.0 | | 1.0 | mA |
| I_{CBO} | $V_{CB}=\text{Rated } V_{CBO}$ | | 0.5 | | 0.5 | mA |
| I_{EBO} | $V_{EB}=5.0\text{V}$ | | 1.0 | | 1.0 | mA |
| BV_{CEO} | $I_C=200\text{mA}$ | 60 | | 80 | | V |
| $V_{CE}(\text{SAT})$ | $I_C=5.0\text{A}, I_B=0.5\text{A}$ | | 1.0 | | 1.0 | V |
| $V_{CE}(\text{SAT})$ | $I_C=10\text{A}, I_B=2.5\text{A}$ | | 3.0 | | 3.0 | V |
| $V_{BE}(\text{SAT})$ | $I_C=10\text{A}, I_B=2.5\text{A}$ | | 2.5 | | 2.5 | V |
| $V_{BE}(\text{ON})$ | $V_{CE}=4.0\text{V}, I_C=4.0\text{A}$ | | 1.5 | | 1.5 | V |
| h_{FE} | $V_{CE}=4.0\text{V}, I_C=1.0\text{A}$ | 35 | | 35 | | |
| h_{FE} | $V_{CE}=4.0\text{V}, I_C=4.0\text{A}$ | 20 | 100 | 20 | 100 | |
| h_{FE} | $V_{CE}=4.0\text{V}, I_C=10\text{A}$ | 4.0 | | 4.0 | | |
| h_{fe} | $V_{CE}=4.0\text{V}, I_C=1.0\text{A}, f=1.0\text{kHz}$ | 20 | | 20 | | |
| f_T | $V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1.0\text{MHz}$ | 4.0 | | 4.0 | | MHz |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ (PNP TYPES) | | 500 | | 500 | pF |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ (NPN TYPES) | | 300 | | 300 | pF |
| t_r | $V_{CC}=30\text{V}, I_C=4.0\text{A}, I_{B1}=I_{B2}=0.4\text{A}$ | | 0.7 | | 0.7 | μs |
| t_{off} | $V_{CC}=30\text{V}, I_C=4.0\text{A}, I_{B1}=I_{B2}=0.4\text{A}$ | | 1.8 | | 1.8 | μs |

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centrasemi.com



Worldwide Field Representatives:
www.centrasemi.com/wwreps

Worldwide Distributors:
www.centrasemi.com/wwdistributors

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: www.centrasemi.com/terms

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View 2N5878 on WIN SOURCE](#)
-  [Central Semiconductor Corp Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management