Data Sheet

Central™
Semiconductor Corp.
145 Adams Avenue, Hauppauge, NY 11788 USA
Tel: (631) 435-1110 • Fax: (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

# MJE700 THRU MJE703 PNP
# MJE800 THRU MJE803 NPN

## SILICON POWER DARLINGTON COMPLEMENTARY TRANSISTORS

JEDEC TO-126 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR MJE700, MJE800 series types are medium power complementary silicon darlington transistors designed for audio amplifier applications as complementary output devices.

## MAXIMUM RATINGS ($T_C$=25°C)

| | SYMBOL | MJE700 MJE701 MJE800 MJE801 | MJE702 MJE703 MJE802 MJE803 | UNIT |
|---|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 60 | 80 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 60 | 80 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 5.0 | | V |
| Collector Current | $I_C$ | 4.0 | | A |
| Base Current | $I_B$ | 0.1 | | A |
| Power Dissipation | $P_D$ | 40 | | W |
| Operating and Storage Junction Temperature | $T_J$, $T_{STG}$ | -55 to +150 | | °C |
| Thermal Resistance | ΘJC | 3.13 | | °C/W |

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

| SYMBOL | TEST CONDITIONS | MJE700 MJE701 MJE800 MJE801 MIN | MJE700 MJE701 MJE800 MJE801 MAX | MJE702 MJE703 MJE802 MJE803 MIN | MJE702 MJE703 MJE802 MJE803 MAX | UNIT |
|---|---|---|---|---|---|---|
| $I_{CBO}$ | $V_{CB}$=Rated $BV_{CBO}$ | | 100 | | 100 | μA |
| $I_{CBO}$ | $V_{CB}$=Rated $BV_{CBO}$, $T_C$=100°C | | 500 | | 500 | μA |
| $I_{CEO}$ | $V_{CE}$=Rated $V_{CEO}$ | | 100 | | 100 | μA |
| $I_{EBO}$ | $V_{BE}$=5.0V | | 2.0 | | 2.0 | mA |
| $BV_{CEO}$ | $I_C$=50mA | 60 | | 80 | | V |
| $V_{CE(SAT)}$ | $I_C$=1.5A, $I_B$=30mA (MJE700, MJE702, MJE800, MJE802) | | 2.5 | | 2.5 | V |
| $V_{CE(SAT)}$ | $I_C$=2.0A, $I_B$=40mA (MJE701, MJE703, MJE801, MJE803) | | 2.8 | | 2.8 | V |
| $V_{CE(SAT)}$ | $I_C$=4.0A, $I_B$=40mA | | 3.0 | | 3.0 | V |
| $V_{BE(ON)}$ | $V_{CE}$=3.0V, $I_C$=1.5A (MJE700, MJE702, MJE800, MJE802) | | 2.5 | | 2.5 | V |
| $V_{BE(ON)}$ | $V_{CE}$=3.0V, $I_C$=2.0A (MJE701, MJE703, MJE801, MJE803) | | 2.5 | | 2.5 | V |
| $V_{BE(ON)}$ | $V_{CE}$=3.0V, $I_C$=4.0A | | 3.0 | | 3.0 | V |
| $h_{FE}$ | $V_{CE}$=3.0V, $I_C$=1.5A (MJE700, MJE702, MJE800, MJE802) | 750 | | 750 | | |
| $h_{FE}$ | $V_{CE}$=3.0V, $I_C$=2.0A (MJE701, MJE703, MJE801, MJE803) | 750 | | 750 | | |
| $h_{FE}$ | $V_{CE}$=3.0V, $I_C$=4.0A | 100 | | 100 | | |
| $f_T$ | $V_{CE}$=3.0V, $I_C$=1.5A, f=1.0MHz | 1.0 | | 1.0 | | MHz |