

MJE710 MJE711 MJE712 PNP
MJE720 MJE721 MJE722 NPN

**COMPLEMENTARY SILICON
POWER TRANSISTORS**



TO-126 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR MJE710, MJE720 series types are Complementary Silicon Power Transistors designed for low power amplifier and medium speed switching applications.

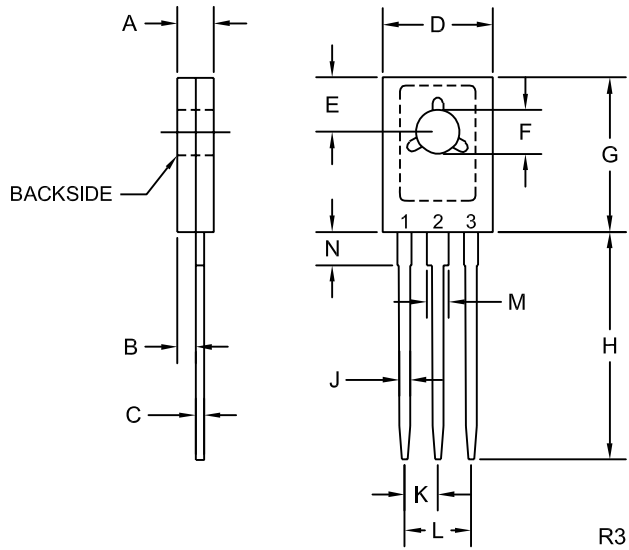
MARKING: FULL PART NUMBER

| MAXIMUM RATINGS: ($T_A=25^\circ\text{C}$ unless otherwise noted) | | MJE710 | MJE711 | MJE712 | |
|--|----------------|---------------|---------------|---------------|--------------------|
| | SYMBOL | MJE720 | MJE721 | MJE722 | UNITS |
| Collector-Base Voltage | V_{CBO} | 40 | 60 | 80 | V |
| Collector-Emitter Voltage | V_{CEO} | 40 | 60 | 80 | V |
| Emitter-Base Voltage | V_{EBO} | | 5.0 | | V |
| Continuous Collector Current | I_C | | 1.5 | | A |
| Base Current | I_B | | 0.5 | | A |
| Power Dissipation | P_D | | 1.25 | | W |
| Power Dissipation ($T_C=25^\circ\text{C}$) | P_D | | 20 | | W |
| Operating and Storage Junction Temperature | T_J, T_{stg} | | -65 to +150 | | $^\circ\text{C}$ |
| Thermal Resistance | θ_{JA} | | 100 | | $^\circ\text{C/W}$ |
| Thermal Resistance | θ_{JC} | | 6.25 | | $^\circ\text{C/W}$ |

| ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted) | | | | |
|---|---|------------|------------|---------------|
| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
| I_{CEV} | $V_{CE}=\text{Rated } V_{CEO}, V_{BE(\text{OFF})}=1.5\text{V}$ | | 100 | μA |
| I_{CEV} | $V_{CE}=\text{Rated } V_{CEO}, V_{BE(\text{OFF})}=1.5\text{V } (T_C=125^\circ\text{C})$ | | 500 | μA |
| I_{CEO} | $V_{CE}=1/2 \text{ Rated } V_{CEO}$ | | 500 | μA |
| I_{EBO} | $V_{EB}=5.0\text{V}$ | | 1.0 | mA |
| BV_{CEO} | $I_C=50\text{mA}$ (MJE710, MJE720) | 40 | | V |
| BV_{CEO} | $I_C=50\text{mA}$ (MJE711, MJE721) | 60 | | V |
| BV_{CEO} | $I_C=50\text{mA}$ (MJE712, MJE722) | 80 | | V |
| $V_{CE(\text{SAT})}$ | $I_C=150\text{mA}, I_B=15\text{mA}$ | | 0.15 | V |
| $V_{CE(\text{SAT})}$ | $I_C=500\text{mA}, I_B=50\text{mA}$ | | 0.4 | V |
| $V_{CE(\text{SAT})}$ | $I_C=1.5\text{A}, I_B=300\text{mA}$ | | 1.0 | V |
| $V_{BE(\text{SAT})}$ | $I_C=1.5\text{A}, I_B=300\text{mA}$ | | 1.3 | V |
| $V_{BE(\text{ON})}$ | $V_{CE}=1.0\text{V}, I_C=500\text{mA}$ | | 0.95 | V |
| h_{FE} | $V_{CE}=1.0\text{V}, I_C=150\text{mA}$ | 40 | | |
| h_{FE} | $V_{CE}=1.0\text{V}, I_C=500\text{mA}$ | 20 | | |
| h_{FE} | $V_{CE}=1.0\text{V}, I_C=1.0\text{A}$ | 8.0 | | |

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TO-126 CASE - MECHANICAL OUTLINE



| SYMBOL | INCHES | | MILLIMETERS | |
|--------|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.094 | 0.110 | 2.40 | 2.80 |
| B | 0.050 | | 1.27 | |
| C | 0.015 | 0.030 | 0.38 | 0.75 |
| D | 0.291 | 0.335 | 7.40 | 8.50 |
| E | 0.148 | | 3.75 | |
| F | 0.118 | 0.134 | 3.00 | 3.40 |
| G | 0.413 | 0.472 | 10.50 | 12.00 |
| H | 0.618 | | 15.70 | |
| J | 0.024 | 0.035 | 0.62 | 0.90 |
| K | 0.089 | | 2.25 | |
| L | 0.177 | | 4.50 | |
| M | 0.045 | 0.055 | 1.14 | 1.40 |
| N | 0.083 | | 2.10 | |

TO-126 (REV:R3)

LEAD CODE:

- 1) EMITTER
- 2) COLLECTOR
- 3) BASE

MARKING:

FULL PART NUMBER