

CentralTM Semiconductor Corp.

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

Manufacturers of World Class Discrete Semiconductors

MJE240 THRU MJE244 NPN
MJE250 THRU MJE254 PNP

COMPLEMENTARY SILICON
POWER TRANSISTORS

JEDEC TO-126 GASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR MJE240, MJE250 series types are complementary silicon power transistors designed for audio amplifier and switching applications.

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

| | MJE240, MJE241 MJE242, MJE250 MJE251, MJE252 | MJE243, MJE244 MJE253, MJE254 | UNIT |
|---|--|----------------------------------|------|
| Collector-Base Voltage | V _{CB0} 80 | 100 | V |
| Collector-Emitter Voltage | V _{CEO} 80 | 100 | V |
| Emitter-Base Voltage | V _{EBO} | 7.0 | V |
| Collector Current | I _C | 4.0 | A |
| Collector Current (PEAK) | I _{CM} | 8.0 | A |
| Base Current | I _B | 1.0 | A |
| Power Dissipation | P _D | 1.5 | W |
| Power Dissipation ($T_C=25^\circ\text{C}$) | P _D | 15 | W |
| Operating and Storage Junction Temperature | T _J , T _{STG} | -65 to +150 | °C |
| Thermal Resistance | θ _{JA} | 83.4 | °C/W |
| Thermal Resistance | θ _{JC} | 8.34 | °C/W |

ELECTRICAL CHARACTERISTICS

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

| SYMBOL | TEST CONDITIONS | MIN | MAX | UNIT |
|----------------------|---|-----|-----|------|
| I _{CB0} | V _{CB} =80V, (MJE240, 241, 242, 250, 251, 252) | | 0.1 | μA |
| I _{CB0} | V _{CB} =100V, (MJE243, 244, 253, 254) | | 0.1 | μA |
| I _{CB0} | V _{CB} =80V, T _C =125°C (MJE240, 241, 242, 250, 251, 252) | | 0.1 | mA |
| I _{CB0} | V _{CB} =100V, T _C =125°C (MJE243, 244, 253, 254) | | 0.1 | mA |
| I _{EBO} | V _{BE} =7.0V | | 0.1 | μA |
| BV _{CEO} | I _C =10mA, (MJE240, 241, 242, 250, 251, 252) | 80 | | V |
| BV _{CEO} | I _C =10mA, (MJE243, 244, 253, 254) | 100 | | V |
| V _{CE(SAT)} | I _C =500mA, I _B =50mA | | 0.3 | V |
| V _{CE(SAT)} | I _C =1.0A, I _B =100mA, (MJE241, 243, 251, 253) | | 0.6 | V |
| V _{CE(SAT)} | I _C =2.0A, I _B =200mA, (MJE240, 250) | | 0.8 | V |
| V _{BE(SAT)} | I _C =2.0A, I _B =200mA | | 1.8 | V |
| V _{BE(ON)} | V _{CE} =1.0V, I _C =500mA | | 1.5 | V |
| h _{FE} | V _{CE} =1.0V, I _C =200mA, (MJE240, 250) | 40 | 200 | |
| h _{FE} | V _{CE} =1.0V, I _C =200mA, (MJE241, 251) | 40 | 180 | |
| h _{FE} | V _{CE} =1.0V, I _C =200mA, (MJE243, 253) | 40 | 180 | |
| h _{FE} | V _{CE} =1.0V, I _C =200mA, (MJE242, 244, 252, 254) | 25 | - | |
| h _{FE} | V _{CE} =1.0V, I _C =1.0A, (MJE241, 251) | 20 | - | |
| h _{FE} | V _{CE} =1.0V, I _C =1.0A, (MJE243, 253) | 15 | - | |
| h _{FE} | V _{CE} =1.0V, I _C =1.0A, (MJE242, 244, 252, 254) | 10 | - | |
| h _{FE} | V _{CE} =1.0V, I _C =2.0A, (MJE240, 250) | 15 | - | |
| f _T | V _{CE} =10V, I _C =1.0A f=1.0MHz | 2.0 | | MHz |
| | V _{CB} =10V, I _E =0, f=0.1MHz, (NPN types) | | 50 | pF |
| | V _{CB} =10V, I _E =0, f=0.1MHz, (PNP types) | | 70 | pF |

