

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N6040 2N6041 2N6042 PNP
2N6043 2N6044 2N6045 NPN

COMPLEMENTARY SILICON POWER
DARLINGTON TRANSISTOR

JEDEC TO-220AB CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N6040, 2N6043 series types are Silicon Complementary Plastic Power Transistors manufactured by the epitaxial base process designed for general purpose amplifier applications.

MAXIMUM RATINGS (T_C=25°C unless otherwise noted)

| | SYMBOL | 2N6040 2N6043 | 2N6041 2N6044 | 2N6042 2N6045 | UNIT |
|---|-----------------------------------|------------------|------------------|------------------|------|
| Collector-Base Voltage | V _{CB0} | 60 | 80 | 100 | V |
| Collector-Emitter Voltage | V _{CE0} | 60 | 80 | 100 | V |
| Emitter-Base Voltage | V _{EBO} | 5.0 | 5.0 | 5.0 | V |
| Collector Current | I _C | 10 | 10 | 10 | A |
| Collector Current (Peak) | I _{CM} | 16 | 16 | 16 | A |
| Base Current | I _B | 250 | 250 | 250 | mA |
| Power Dissipation | P _D | 75 | 75 | 75 | W |
| Operating and Storage Junction Temperature | T _J , T _{stg} | | -65 TO +150 | | °C |
| Thermal Resistance | θ _{JC} | | 1.67 | | °C/W |

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

| SYMBOL | TEST CONDITIONS | MIN | MAX | UNIT |
|-----------------------|---|-------|--------|------|
| I _{CB0} | V _{CB} =Rated V _{CB0} | | 20 | μA |
| I _{CEV} | V _{CE} =Rated V _{CE0} , V _{BE} (OFF)=1.5V | | 20 | μA |
| I _{CEV} | V _{CE} =Rated V _{CE0} , V _{BE} (OFF)=1.5V, T _C =150°C | | 200 | μA |
| I _{CEO} | V _{CE} =Rated V _{CE0} | | 20 | μA |
| I _{EBO} | V _{BE} =5.0V | | 2.0 | mA |
| BV _{CE0} | I _C =100mA (2N6040, 2N6043) | 60 | | V |
| BV _{CE0} | I _C =100mA (2N6041, 2N6044) | 80 | | V |
| BV _{CE0} | I _C =100mA (2N6042, 2N6045) | 100 | | V |
| V _{CE} (SAT) | I _C =4.0A, I _B =16mA (2N6040, 2N6043) | | 2.0 | V |
| V _{CE} (SAT) | I _C =4.0A, I _B =16mA (2N6041, 2N6044) | | 2.0 | V |
| V _{CE} (SAT) | I _C =3.0A, I _B =12mA (2N6042, 2N6045) | | 2.0 | V |
| V _{CE} (SAT) | I _C =8.0A, I _B =80mA | | 4.0 | V |
| V _{BE} (SAT) | I _C =8.0A, I _B =80mA | | 4.5 | V |
| V _{BE} (ON) | V _{CE} =4.0V, I _C =4.0A | | 2.8 | V |
| h _{FE} | V _{CE} =4.0V, I _C =4.0A (2N6040, 2N6043) | 1,000 | 10,000 | |
| h _{FE} | V _{CE} =4.0V, I _C =4.0A (2N6041, 2N6044) | 1,000 | 10,000 | |
| h _{FE} | V _{CE} =4.0V, I _C =3.0A (2N6042, 2N6045) | 1,000 | 10,000 | |
| h _{FE} | V _{CE} =4.0V, I _C =8.0A | 100 | - | |
| h _{fe} | V _{CE} =4.0V, I _C =3.0A, f=1.0kHz | 300 | - | |
| f _T | V _{CE} =4.0V, I _C =3.0A, f=1.0MHz | 4.0 | | MHz |
| C _{ob} | V _{CB} =10V, I _E =0, f=100kHz, (NPN Types) | | 200 | pF |
| C _{ob} | V _{CB} =10V, I _E =0, f=100kHz, (PNP Types) | | 300 | pF |