

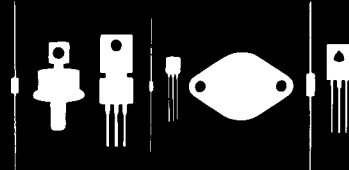
Central Semiconductor Corp.

Central Semiconductor Corp.

Central Semiconductor Corp.

Central Semiconductor Corp.

145 Adams Avenue
Hauppauge, New York 11788



2N1302
2N1304
2N1306
2N1308

NPN GERMANIUM TRANSISTOR

JEDEC TO 5 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N1302, 2N1304, 2N1306 and 2N1308 are Germanium NPN Transistors designed for computer and switching applications.

MAXIMUM RATINGS (TA = 25°C)

| | | |
|--------------------------------|------|--------------|
| Collector Base Voltage | VCBO | 25V |
| Emitter Base Voltage | VEBO | 25V |
| Collector Current | IC | 300 mA |
| Power Dissipation | PT | 150 mW |
| Operating Junction Temperature | TJ | 85°C |
| Storage Temperature | Tstg | -65 to 100°C |

ELECTRICAL CHARACTERISTICS (TA = 25°C)

| <u>Symbol</u> | <u>Test Conditions</u> | <u>Type</u> | <u>Min</u> | <u>Max</u> | <u>Unit</u> |
|---------------|--------------------------|-------------|------------|------------|-------------|
| ICBO | VCB = 25V | All | | 6.0 | uA |
| IEBO | VEB = 25V | All | | 6.0 | uA |
| VCBO | IC = 100 uA | All | 25 | | v |
| VEBO | IE = 100 uA | All | 25 | | v |
| hfe | VCE = 1V, IC = 10 mA | 2N1302 | 20 | | - |
| | | 2N1304 | 40 | 200 | - |
| | | 2N1306 | 60 | 300 | - |
| | | 2N1308 | 80 | | - |
| hFE | VCE = 0.35V, IC = 200 mA | 2N1302 | 10 | | - |
| | | 2N1304 | 15 | | - |
| | | 2N1306 | 20 | | - |
| | | 2N1308 | 20 | | - |
| VCE (s) | IC = 10 mA, IB = 0.5 mA | 2N1302 | | 0.2 | v |
| | IC = 10 mA, IB = 0.25 mA | 2N1304 | | 0.2 | v |
| | IC = 10 mA, IB = 0.17 mA | 2N1306 | | 0.2 | v |
| | IC = 10 mA, IB = 0.13 mA | 2N1308 | | 0.2 | v |
| VBE (s) | IC = 10 mA, IB = 0.5 mA | 2N1302 | 0.15 | 0.40 | v |
| | | 2N1304 | 0.15 | 0.35 | v |
| | | 2N1306 | 0.15 | 0.35 | v |
| | | 2N1308 | 0.15 | 0.35 | v |

CentralTM
Semiconductor Corp.

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

ELECTRICAL CHARACTERISTICS (T_A = 25° C) continued

| <u>Symbol</u> | <u>Test Conditions</u> | <u>Type</u> | <u>Min-</u> | <u>Max</u> | <u>Unit</u> |
|------------------|--|-------------|-------------|------------|-------------------|
| h _{ib} | V _{CB} = 5v | All | 28 typ. | | ohm |
| h _{rb} | I _E = 1 mA | All | 5 typ. | | X10 ⁻⁴ |
| h _{ob} | f = 1 KHz | All | 0.34 typ. | | u mho |
| h _{fe} | | All | 140 typ. | | - |
| NF | | All | 3 typ. | | db |
| C _{ob} | V _{CB} = 5V f = 1MHZ | All | 20 typ. | | pf |
| C _{ib} | V _{EB} = 5V f = 1 MHZ | All | 13 tyu. | | pf |
| t _d | I _c = 10 mA, I _{B1} = 1.3 mA | All | 0.07 typ. | | u sec |
| t _r | I _{Bz} = 0.7 mA | All | 0.2 typ. | | u sec |
| t _s | V _{BE} (off) = 0.8V | All | 0.7 typ. | | u sec |
| t _f | R _L = 1K ohm | All | 0.4 typ. | | u sec |
| f _{hfb} | V _{CB} = 5V, I _E = 1 mA | 2N1302 | 3 | | MHz |
| | | 2N1304 | 5 | | MHz |
| | | 2N1306 | 10 | | MHz |
| | | 2N1308 | 15 | | MHz |

Central[™]
Semiconductor Corp.

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