

CentralTM Semiconductor Corp.

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

Manufacturers of World Class Discrete Semiconductors

2N3798
2N3799

PNP SILICON TRANSISTOR

JEDEC TO-18 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N3798, 2N3799 types are Silicon PNP Epitaxial Planar Transistors designed for low noise amplifier applications.

MAXIMUM RATINGS (T_A = 25°C)

| | SYMBOL | | UNITS |
|---|-----------------------------------|-------------|-------|
| Collector-Base Voltage | V _{CBO} | 60 | V |
| Collector-Emitter Voltage | V _{CEO} | 60 | V |
| Emitter-Base Voltage | V _{EBO} | 5.0 | V |
| Collector Current | I _C | 50 | mA |
| Power Dissipation | P _D | 360 | mW |
| Power Dissipation (T _C = 25°C) | P _D | 1.2 | W |
| Operating and Storage | | | |
| Junction Temperature | T _J , T _{stg} | -65 to +200 | °C |
| Thermal Resistance | θ _{JA} | 0.49 | °C/mW |
| Thermal Resistance | θ _{JC} | 150 | °C/W |

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

| SYMBOL | TEST CONDITIONS | 2N3798 | | 2N3799 | | UNITS |
|----------------------|--|--------|------|--------|------|-------|
| | | MIN | MAX | MIN | MAX | |
| I _{CBO} | V _{CB} = 50V | | 10 | | 10 | nA |
| I _{CBO} | V _{CB} = 50V, T _A = 150°C | | 10 | | 10 | μA |
| I _{EBO} | V _{BE} = 4.0V | | 20 | | 20 | nA |
| BV _{CBO} | I _C = 10μA | 60 | | 60 | | V |
| BV _{CEO} | I _C = 10mA | 60 | | 60 | | V |
| BV _{EBO} | I _E = 10μA | 5.0 | | 5.0 | | V |
| V _{CE(SAT)} | I _C = 100μA, I _B = 10μA | | 0.20 | | 0.20 | V |
| V _{CE(SAT)} | I _C = 1.0mA, I _B = 100μA | | 0.25 | | 0.25 | V |
| V _{BE(SAT)} | I _C = 100μA, I _B = 10μA | | 0.70 | | 0.70 | V |
| V _{BE(SAT)} | I _C = 1.0mA, I _B = 100μA | | 0.80 | | 0.80 | V |
| V _{BE(ON)} | V _{CE} = 5.0V, I _C = 100μA | | 0.70 | | 0.70 | V |
| h _{FE} | V _{CE} = 5.0V, I _C = 1.0mA | | - | 75 | | |
| h _{FE} | V _{CE} = 5.0V, I _C = 10μA | 100 | | 225 | | |
| h _{FE} | V _{CE} = 5.0V, I _C = 100μA | 150 | | 300 | | |
| h _{FE} | V _{CE} = 5.0V, I _C = 100μA, T _A = -55°C | 75 | | 150 | | |

ELECTRICAL CHARACTERISTICS (Continued)

| SYMBOL | TEST CONDITIONS | 2N3798 | | | 2N3799 | | | UNITS |
|------------|--|--------|-----|-----|--------|-----|-----|------------------|
| | | MIN | TYP | MAX | MIN | TYP | MAX | |
| h_{FE} | $V_{CE}=5.0V, I_C=500\mu A$ | 150 | | 450 | 300 | | 900 | |
| h_{FE} | $V_{CE}=5.0V, I_C=1.0mA$ | 150 | | | 300 | | | |
| h_{FE} | $V_{CE}=5.0V, I_C=10mA$ | 125 | | | 250 | | | |
| f_T | $V_{CE}=5.0V, I_C=500\mu A, f=30MHz$ | 30 | | | 30 | | | MHz |
| * f_T | $V_{CE}=5.0V, I_C=1.0mA, f=100MHz$ | | 80 | | | 80 | | MHz |
| * C_{ob} | $V_{CB}=5.0V, I_E=0, f=100kHz$ | | | 5.0 | | | 5.0 | pF |
| * C_{ib} | $V_{BE}=0.5V, I_C=0, f=100kHz$ | | | 15 | | | 15 | pF |
| h_{ie} | $V_{CE}=10V, I_C=1.0mA, f=1.0kHz$ | 3.0 | | 15 | 10 | | 40 | $k\Omega$ |
| h_{re} | $V_{CE}=10V, I_C=1.0mA, f=1.0kHz$ | | | 25 | | | 25 | $\times 10^{-4}$ |
| h_{fe} | $V_{CE}=10V, I_C=1.0mA, f=1.0kHz$ | 150 | | 600 | 300 | | 900 | |
| h_{oe} | $V_{CE}=10V, I_C=1.0mA, f=1.0kHz$ | 5.0 | | 60 | 5.0 | | 60 | μmho |
| NF | $V_{CE}=10V, I_C=100\mu A, R_G=3.0k\Omega$ $f=100Hz, B.W.=20Hz$ | | 4.0 | 7.0 | | 2.5 | 4.0 | dB |
| NF | $V_{CE}=10V, I_C=100\mu A, R_G=3.0k\Omega$ $f=1kHz, B.W.=200Hz$ | | 1.5 | 3.0 | | 0.8 | 1.5 | dB |
| NF | $V_{CE}=10V, I_C=100\mu A, R_G=3.0k\Omega$ $f=10kHz, B.W.=2kHz$ | | 2.5 | 2.5 | | 1.5 | 1.5 | dB |
| NF | $V_{CE}=10V, I_C=100\mu A, R_G=3.0k\Omega$ Broadband B.W. = 10Hz to 15.7kHz | | | 3.5 | | | 2.5 | dB |

* Limits Not in Accordance with JEDEC Registered Values.

CentralTM
Semiconductor Corp.

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