

2N3798 2N3798A
2N3799 2N3799A

**SILICON
PNP TRANSISTORS**



TO-18 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N3798, 2N3799 series devices are silicon PNP epitaxial planar transistors designed for low noise amplifier applications.

MARKING: FULL PART NUMBER

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

	SYMBOL	2N3798 2N3799	2N3798A 2N3799A	UNITS
Collector-Base Voltage	V_{CBO}	60	90	V
Collector-Emitter Voltage	V_{CEO}	60	90	V
Emitter-Base Voltage	V_{EBO}		5.0	V
Continuous Collector Current	I_C		50	mA
Power Dissipation	P_D		360	mW
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D		1.2	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$
Thermal Resistance	θ_{JA}		0.49	$^\circ\text{C}/\text{mW}$
Thermal Resistance	θ_{JC}		150	$^\circ\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=50\text{V}$		10	nA
I_{CBO}	$V_{CB}=50\text{V}, T_A=150^\circ\text{C}$		10	μA
I_{EBO}	$V_{EB}=4.0\text{V}$		20	nA
BV_{CBO}	$I_C=10\mu\text{A}$ (2N3798, 2N3799)	60		V
BV_{CBO}	$I_C=10\mu\text{A}$ (2N3798A, 2N3799A)	90		V
BV_{CEO}	$I_C=10\text{mA}$ (2N3798, 2N3799)	60		V
BV_{CEO}	$I_C=10\text{mA}$ (2N3798A, 2N3799A)	90		V
BV_{EBO}	$I_E=10\mu\text{A}$	5.0		V
$V_{CE(SAT)}$	$I_C=100\mu\text{A}, I_B=10\mu\text{A}$		0.20	V
$V_{CE(SAT)}$	$I_C=1.0\text{mA}, I_B=100\mu\text{A}$		0.25	V
$V_{BE(SAT)}$	$I_C=100\mu\text{A}, I_B=10\mu\text{A}$		0.70	V
$V_{BE(SAT)}$	$I_C=1.0\text{mA}, I_B=100\mu\text{A}$		0.80	V
$V_{BE(ON)}$	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$		0.70	V

		2N3798 2N3798A		2N3799 2N3799A	
		MIN	MAX	MIN	MAX
h_{FE}	$V_{CE}=5.0\text{V}, I_C=1.0\mu\text{A}$	-	-	75	-
h_{FE}	$V_{CE}=5.0\text{V}, I_C=10\mu\text{A}$	100	-	225	-
h_{FE}	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$	150	-	300	-
h_{FE}	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}, T_A=-55^\circ\text{C}$	75	-	150	-
h_{FE}	$V_{CE}=5.0\text{V}, I_C=500\mu\text{A}$	150	450	300	900
h_{FE}	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$	150	-	300	-
h_{FE}	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$	125	-	250	-

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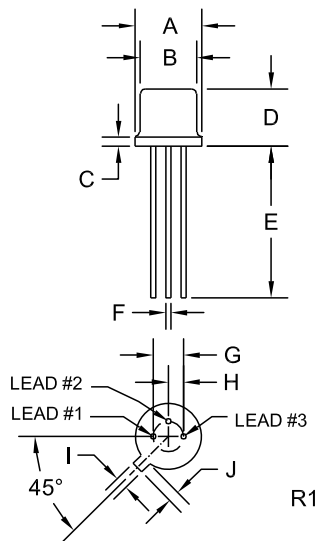


ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	2N3798 2N3798A			2N3799 2N3799A			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	
f_T	$V_{CE}=5.0\text{V}$, $I_C=500\mu\text{A}$, $f=30\text{MHz}$	30	-	-	30	-	-	MHz
f_T^*	$V_{CE}=5.0\text{V}$, $I_C=1.0\text{mA}$, $f=100\text{MHz}$	-	80	-	-	80	-	MHz
C_{ob}^*	$V_{CB}=5.0\text{V}$, $I_E=0$, $f=100\text{kHz}$	-	-	5.0	-	-	5.0	pF
C_{ib}^*	$V_{EB}=0.5\text{V}$, $I_C=0$, $f=100\text{kHz}$	-	-	15	-	-	15	pF
h_{ie}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	3.0	-	15	10	-	40	k Ω
h_{re}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	-	-	25	-	-	25	$\times 10^{-4}$
h_{fe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	150	-	600	300	-	900	
h_{oe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	5.0	-	60	5.0	-	60	μS
NF	$V_{CE}=10\text{V}$, $I_C=100\mu\text{A}$, $R_G=3.0\text{k}\Omega$, $f=100\text{Hz}$, $\text{BW}=20\text{Hz}$	-	4.0	7.0	-	2.5	4.0	dB
NF	$V_{CE}=10\text{V}$, $I_C=100\mu\text{A}$, $R_G=3.0\text{k}\Omega$, $f=1.0\text{kHz}$, $\text{BW}=200\text{Hz}$	-	1.5	3.0	-	0.8	1.5	dB
NF	$V_{CE}=10\text{V}$, $I_C=100\mu\text{A}$, $R_G=3.0\text{k}\Omega$, $f=10\text{kHz}$, $\text{BW}=2.0\text{kHz}$	-	1.0	2.5	-	0.8	1.5	dB
NF	$V_{CE}=10\text{V}$, $I_C=100\mu\text{A}$, $R_G=3.0\text{k}\Omega$, Broadband $\text{BW}=10\text{Hz}$ to 15.7kHz	-	2.5	3.5	-	1.5	2.5	dB

* Limits not in accordance with JEDEC registered values.

TO-18 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.209	0.230	5.31	5.84
B (DIA)	0.178	0.195	4.52	4.95
C	-	0.030	-	0.76
D	0.170	0.210	4.32	5.33
E	0.500	-	12.70	-
F (DIA)	0.016	0.019	0.41	0.48
G (DIA)	0.100		2.54	
H	0.050		1.27	
I	0.036	0.046	0.91	1.17
J	0.028	0.048	0.71	1.22

TO-18 (REV: R1)

LEAD CODE:

- 1) Emitter
- 2) Base
- 3) Collector

MARKING:

FULL PART NUMBER

R1 (22-September 2014)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centalsemi.com

Worldwide Field Representatives:
www.centalsemi.com/wwreps

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