2N4398
2N4399
2N5745

PNP SILICON
POWER TRANSISTOR

TO-3 CASE

Central Semiconductor Corp.

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N4398 series types are PNP silicon power transistors designed for power amplifier and switching applications.

MARKING: FULL PART NUMBER

MAXIMUM RATINGS: (T_C=25°C)	**SYMBOL**	**2N4398**	**2N4399**	**2N5745**	**UNITS**
Collector-Base Voltage	V_{CBO}	40	60	80	V
Collector-Emitter Voltage	V_{CEO}	40	60	80	V
Emitter-Base Voltage	V_{EBO}	5.0	5.0	5.0	V
Continuous Collector Current	I_C	30	30	20	A
Peak Collector Current	I_{CM}		50		A
Continuous Base Current	I_B		7.5		A
Peak Base Current	I_{BM}		15		A
Power Dissipation	P_D		200		W
Power Dissipation (T_A=25°C)	P_D		5.0		W
Operating and Storage Junction Temperature	T_J, T_{stg}		-65 to +200		°C
Thermal Resistance	Θ_{JA}		35		°C/W
Thermal Resistance	Θ_{JC}		0.875		°C/W

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

		2N4398		**2N4399**		**2N5745**		
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=Rated V_{CBO}	-	1.0	-	1.0	-	1.0	mA
I_{CEX}	V_{CE}=Rated V_{CEO}, V_{EB}=1.5V	-	5.0	-	5.0	-	5.0	mA
I_{CEX}	V_{CE}=30V, V_{EB}=1.5V, T_C=150°C	-	10	-	10	-	-	mA
I_{CEX}	V_{CE}=80V, V_{EB}=1.5V, T_C=150°C	-	-	-	-	-	10	mA
I_{CEO}	V_{CE}=Rated V_{CEO}	-	5.0	-	5.0	-	5.0	mA
I_{EBO}	V_{EB}=5.0V	-	5.0	-	5.0	-	5.0	mA
BV_{CEO}	I_C=200mA	40	-	60	-	80	-	V
$V_{CE(SAT)}$	I_C=10A, I_B=1.0A	-	0.75	-	0.75	-	1.0	V
$V_{CE(SAT)}$	I_C=15A, I_B=1.5A	-	1.0	-	1.0	-	1.5	V
$V_{CE(SAT)}$	I_C=20A, I_B=2.0A	-	2.0	-	2.0	-	-	V
$V_{CE(SAT)}$	I_C=20A, I_B=4.0A	-	-	-	-	-	2.0	V
$V_{CE(SAT)}$	I_C=30A, I_B=6.0A	-	4.0	-	4.0	-	-	V
$V_{BE(SAT)}$	I_C=10A, I_B=1.0A	-	1.6	-	1.6	-	1.7	V
$V_{BE(SAT)}$	I_C=15A, I_B=1.5A	-	1.85	-	1.85	-	2.0	V
$V_{BE(SAT)}$	I_C=20A, I_B=2.0A	-	2.5	-	2.5	-	-	V
$V_{BE(SAT)}$	I_C=20A, I_B=4.0A	-	-	-	-	-	2.5	V
$V_{BE(ON)}$	V_{CE}=2.0V, I_C=10A	-	-	-	-	-	1.5	V
$V_{BE(ON)}$	V_{CE}=2.0V, I_C=15A	-	1.7	-	1.7	-	-	V
$V_{BE(ON)}$	V_{CE}=4.0V, I_C=20A	-	-	-	-	-	2.5	V
$V_{BE(ON)}$	V_{CE}=4.0V, I_C=30A	-	3.0	-	3.0	-	-	V

R0 (30-July 2012)

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

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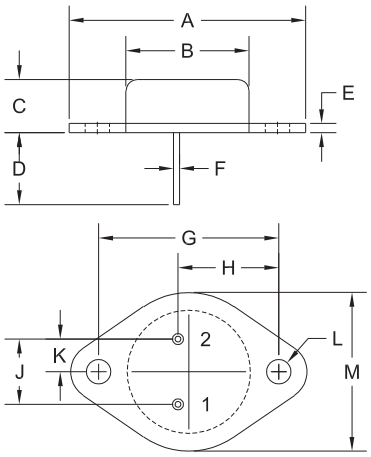
SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**MIN**	**MAX**	**MIN**	**MAX**	**UNITS**
h_{FE}	V_{CE}=2.0V, I_C=1.0A	40	-	40	-	40	-	
h_{FE}	V_{CE}=2.0V, I_C=10A	-	-	-	-	15	60	
h_{FE}	V_{CE}=2.0V, I_C=15A	15	60	15	60	-	-	
h_{FE}	V_{CE}=2.0V, I_C=20A	-	-	-	-	5.0	-	
h_{FE}	V_{CE}=4.0V, I_C=30A	5.0	-	5.0	-	-	-	
h_{fe}	V_{CE}=10V, I_C=1.0A, f=1.0kHz	40	-	40	-	40	-	
f_T	V_{CE}=10V, I_C=1.0A, f=1.0MHz	4.0	-	4.0	-	2.0	-	MHz
t_r	V_{CC}=30V, I_C=10A, I_{B1}=I_{B2}=1.0A	-	0.4	-	0.4	-	1.0	μs
t_s	V_{CC}=30V, I_C=10A, I_{B1}=I_{B2}=1.0A	-	1.5	-	1.5	-	2.0	μs
t_f	V_{CC}=30V, I_C=10A, I_{B1}=I_{B2}=1.0A	-	0.6	-	0.6	-	1.0	μs

TO-3 CASE - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	1.516	1.573	38.50	39.96
B (DIA)	0.748	0.875	19.00	22.23
C	0.250	0.450	6.35	11.43
D	0.433	0.516	11.00	13.10
E	0.054	0.065	1.38	1.65
F	0.035	0.045	0.90	1.15
G	1.177	1.197	29.90	30.40
H	0.650	0.681	16.50	17.30
J	0.420	0.440	10.67	11.18
K	0.205	0.225	5.21	5.72
L (DIA)	0.151	0.172	3.84	4.36
M	0.984	1.050	25.00	26.67

TO-3 (REV: R2)

R2

LEAD CODE:
1) Base
2) Emitter
Case) Collector

MARKING:
FULL PART NUMBER

R0 (30-July 2012)

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

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