

2N4398
2N4399
2N5745

**PNP SILICON
POWER TRANSISTOR**



TO-3 CASE



www.centrasemi.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: ($T_C=25^\circ\text{C}$)

Collector-Base Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Peak Collector Current
Continuous Base Current
Peak Base Current
Power Dissipation
Power Dissipation ($T_A=25^\circ\text{C}$)
Operating and Storage Junction Temperature
Thermal Resistance
Thermal Resistance

SYMBOL	<u>2N4398</u>	<u>2N4399</u>	<u>2N5745</u>	UNITS
V_{CB0}	40	60	80	V
V_{CEO}	40	60	80	V
V_{EBO}	5.0	5.0	5.0	V
I_C	30	30	20	A
I_{CM}		50		A
I_B		7.5		A
I_{BM}		15		A
P_D		200		W
P_D		5.0		W
T_J, T_{stg}		-65 to +200		$^\circ\text{C}$
θ_{JA}		35		$^\circ\text{C/W}$
θ_{JC}		0.875		$^\circ\text{C/W}$

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

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

R0 (30-July 2012)

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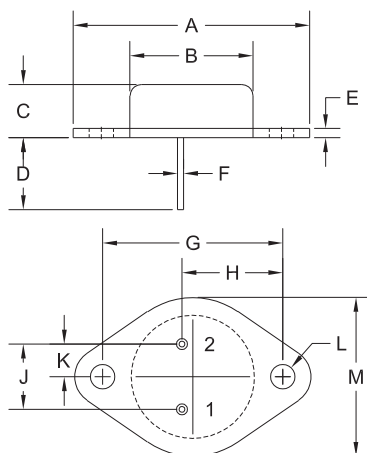
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ELECTRICAL CHARACTERISTICS - Continued: ($T_C=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	2N4398		2N4399		2N5745		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$	40	-	40	-	40	-	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=10\text{A}$	-	-	-	-	15	60	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=15\text{A}$	15	60	15	60	-	-	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=20\text{A}$	-	-	-	-	5.0	-	
h_{FE}	$V_{CE}=4.0\text{V}, I_C=30\text{A}$	5.0	-	5.0	-	-	-	
h_{fe}	$V_{CE}=10\text{V}, I_C=1.0\text{A}, f=1.0\text{kHz}$	40	-	40	-	40	-	
f_T	$V_{CE}=10\text{V}, I_C=1.0\text{A}, f=1.0\text{MHz}$	4.0	-	4.0	-	2.0	-	MHz
t_r	$V_{CC}=30\text{V}, I_C=10\text{A}, I_{B1}=I_{B2}=1.0\text{A}$	-	0.4	-	0.4	-	1.0	μs
t_s	$V_{CC}=30\text{V}, I_C=10\text{A}, I_{B1}=I_{B2}=1.0\text{A}$	-	1.5	-	1.5	-	2.0	μs
t_f	$V_{CC}=30\text{V}, I_C=10\text{A}, I_{B1}=I_{B2}=1.0\text{A}$	-	0.6	-	0.6	-	1.0	μs

TO-3 CASE - MECHANICAL OUTLINE



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	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)