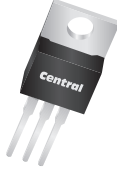


2N5294
2N5296
2N5298

NPN SILICON TRANSISTOR



TO-220 CASE



www.centra-semi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N5294, 2N5296, and 2N5298 types are NPN silicon transistors manufactured by the epitaxial base process, and designed for applications that require power amplifier and medium speed switching capabilities.

MARKING: FULL PART NUMBER

MAXIMUM RATINGS: ($T_C=25^\circ\text{C}$)

Collector-Base Voltage
Collector-Emitter Voltage
Collector-Emitter Voltage ($R_{BE}=100\Omega$)
Collector-Emitter Voltage
Continuous Collector Current
Continuous Base Current
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance
Thermal Resistance

SYMBOL	2N5294	2N5296	2N5298	UNITS
V_{CBO}	80	60	80	V
V_{CEV}	80	60	80	V
V_{CER}	75	50	70	V
V_{CEO}	70	40	60	V
I_C		4.0		A
I_B		2.0		A
P_D		36		W
T_J, T_{stg}		-65 to +150		$^\circ\text{C}$
θ_{JA}		70		$^\circ\text{C/W}$
θ_{JC}		3.47		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	2N5294		2N5296		2N5298		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
I_{CEV}	$V_{CE}=35\text{V}, V_{EB}=1.5\text{V}$	-	-	-	2.0	-	-	mA
I_{CEV}	$V_{CE}=35\text{V}, V_{EB}=1.5\text{V}, T_C=150^\circ\text{C}$	-	-	-	5.0	-	-	mA
I_{CEV}	$V_{CE}=65\text{V}, V_{EB}=1.5\text{V}$	-	0.5	-	-	-	0.5	mA
I_{CEV}	$V_{CE}=65\text{V}, V_{EB}=1.5\text{V}, T_C=150^\circ\text{C}$	-	3.0	-	-	-	3.0	mA
I_{CER}	$V_{CE}=50\text{V}, R_{BE}=100\Omega$	-	0.5	-	-	-	0.5	mA
I_{CER}	$V_{CE}=50\text{V}, R_{BE}=100\Omega, T_C=150^\circ\text{C}$	-	2.0	-	-	-	2.0	mA
I_{EBO}	$V_{EB}=7.0\text{V}$	-	1.0	-	-	-	-	mA
I_{EBO}	$V_{EB}=5.0\text{V}$	-	-	-	1.0	-	1.0	mA
BV_{CEV}	$V_{BE}=1.5\text{V}, I_C=100\text{mA}$	80	-	60	-	80	-	V
BV_{CER}	$I_C=100\text{mA}, R_{BE}=100\Omega$	75	-	50	-	70	-	V
BV_{CEO}	$I_C=100\text{mA}$	70	-	40	-	60	-	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$	-	1.0	-	-	-	-	V
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=100\text{mA}$	-	-	-	1.0	-	-	V
$V_{CE(SAT)}$	$I_C=1.5\text{A}, I_B=150\text{mA}$	-	-	-	-	-	1.0	V
$V_{BE(ON)}$	$V_{CE}=4.0\text{V}, I_C=500\text{mA}$	-	1.1	-	-	-	-	V
$V_{BE(ON)}$	$V_{CE}=4.0\text{V}, I_C=1.0\text{A}$	-	-	-	1.3	-	-	V
$V_{BE(ON)}$	$V_{CE}=4.0\text{V}, I_C=1.5\text{A}$	-	-	-	-	-	1.5	V

R1 (26-September 2012)

2N5294
2N5296
2N5298

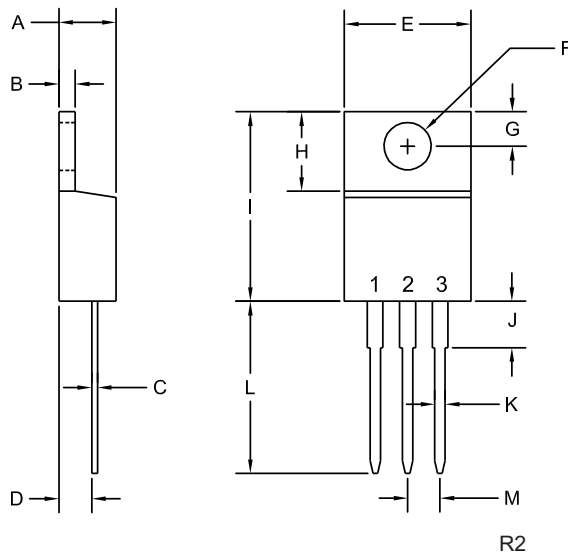
NPN SILICON TRANSISTOR



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

SYMBOL	TEST CONDITIONS	2N5294		2N5296		2N5298		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
h_{FE}	$V_{CE}=4.0\text{V}$, $I_C=500\text{mA}$	30	120	-	-	-	-	
h_{FE}	$V_{CE}=4.0\text{V}$, $I_C=1.0\text{A}$	-	-	30	120	-	-	
h_{FE}	$V_{CE}=4.0\text{V}$, $I_C=1.5\text{A}$	-	-	-	-	20	80	
f_T	$V_{CE}=4.0\text{V}$, $I_C=200\text{mA}$	0.8	-	0.8	-	0.8	-	MHz
t_{on}	$V_{CC}=30\text{V}$, $I_C=500\text{mA}$, $I_B=50\text{mA}$	-	5.0	-	-	-	-	μs
t_{on}	$V_{CC}=30\text{V}$, $I_C=1.0\text{A}$, $I_B=100\text{mA}$	-	-	-	5.0	-	-	μs
t_{on}	$V_{CC}=30\text{V}$, $I_C=1.5\text{A}$, $I_B=150\text{mA}$	-	-	-	-	-	5.0	μs
t_{off}	$V_{CC}=30\text{V}$, $I_C=500\text{mA}$, $I_B=50\text{mA}$	-	15	-	-	-	-	μs
t_{off}	$V_{CC}=30\text{V}$, $I_C=1.0\text{A}$, $I_B=100\text{mA}$	-	-	-	15	-	-	μs
t_{off}	$V_{CC}=30\text{V}$, $I_C=1.5\text{A}$, $I_B=150\text{mA}$	-	-	-	-	-	15	μs

TO-220 CASE - MECHANICAL OUTLINE



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.170	0.190	4.31	4.82
B	0.045	0.055	1.15	1.39
C	0.013	0.026	0.33	0.65
D	0.083	0.107	2.10	2.72
E	0.394	0.417	10.01	10.60
F (DIA)	0.140	0.157	3.55	4.00
G	0.100	0.118	2.54	3.00
H	0.230	0.270	5.85	6.85
I	0.560	0.625	14.23	15.87
J	-	0.250	-	6.35
K	0.025	0.038	0.64	0.96
L	0.500	0.579	12.70	14.70
M	0.090	0.110	2.29	2.79

TO-220 (REV: R2)

LEAD CODE:

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

MARKING: FULL PART NUMBER

R1 (26-September 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).

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