

2N4031

PNP SILICON TRANSISTOR



TO-39 CASE



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DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N4031 is a silicon PNP transistor, mounted in a hermetically sealed package, designed for general purpose amplifier applications.

MARKING: FULL PART NUMBER

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

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	1.0	A
Power Dissipation	P_D	1.25	W
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D	7.0	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$
Thermal Resistance	θ_{JC}	20	$^\circ\text{C/W}$
Thermal Resistance	θ_{JA}	140	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=60\text{V}$		50	nA
I_{CBO}	$V_{CB}=60\text{V}, T_A=150^\circ\text{C}$		50	μA
I_{EBO}	$V_{EB}=5.0\text{V}$		10	μA
BV_{CBO}	$I_C=10\mu\text{A}$	80		V
BV_{CEO}	$I_C=10\text{mA}$	80		V
BV_{EBO}	$I_E=10\mu\text{A}$	5.0		V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.15	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.5	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.9	V
$V_{BE(ON)}$	$V_{CE}=0.5\text{V}, I_C=500\text{mA}$		1.1	V
h_{FE}	$V_{CE}=5.0\text{V}, I_C=0.1\text{mA}$	30		
h_{FE}	$V_{CE}=5.0\text{V}, I_C=100\text{mA}$	40	120	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=100\text{mA}, T_A=-55^\circ\text{C}$	15		
h_{FE}	$V_{CE}=5.0\text{V}, I_C=500\text{mA}$	25		
h_{FE}	$V_{CE}=5.0\text{V}, I_C=1.0\text{A}$	10		

R0 (10-January 2020)

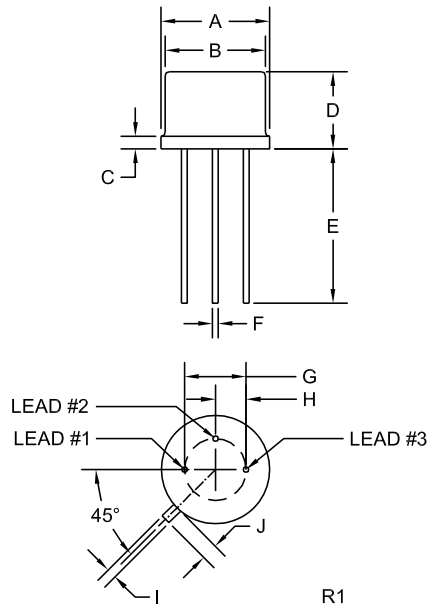
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{fe}	$V_{CE}=10\text{V}$, $I_C=50\text{mA}$, $f=100\text{MHz}$	1.0	4.0	
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$		20	pF
C_{ib}	$V_{EB}=0.5\text{V}$, $I_C=0$, $f=1.0\text{MHz}$		110	pF
t_{on}	$V_{CC}=30\text{V}$, $I_C=500\text{mA}$, $I_{B1}=50\text{mA}$		100	ns
t_s	$V_{CC}=30\text{V}$, $I_C=500\text{mA}$, $I_{B1}=I_{B2}=50\text{mA}$		350	ns
t_f	$V_{CC}=30\text{V}$, $I_C=500\text{mA}$, $I_{B1}=I_{B2}=50\text{mA}$		50	ns

TO-39 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.335	0.370	8.51	9.40
B (DIA)	0.315	0.335	8.00	8.51
C	-	0.040	-	1.02
D	0.240	0.260	6.10	6.60
E	0.500	-	12.70	-
F (DIA)	0.016	0.021	0.41	0.53
G (DIA)	0.200		5.08	
H	0.100		2.54	
I	0.028	0.034	0.71	0.86
J	0.029	0.045	0.74	1.14

TO-39 (REV: R1)

LEAD CODE:

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

MARKING: FULL PART NUMBER

R0 (10-January 2020)

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.centrasemi.com

Worldwide Field Representatives:
www.centrasemi.com/wwreps

Worldwide Distributors:
www.centrasemi.com/wwdistributors

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