

CentralTM Semiconductor Corp.

145 Adams Avenue, Hauppauge, NY 11788 USA
Tel: (631) 435-1110 • Fax: (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

2N4928
2N4929
2N4930
2N4931

PNP SILICON TRANSISTOR

JEDEC TO-39 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N4928 series types are PNP Silicon Transistors designed for general purpose applications.

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

	SYMBOL	2N4928	2N4929	2N4930	2N4931	UNITS
Collector-Base Voltage	V_{CB0}		100	150	200	250 V
Collector-Emitter Voltage	V_{CE0}	100	150	200	250	V
Emitter-Base Voltage	V_{EB0}			4.0		V
Collector Current	I_C			500		mA
Power Dissipation	P_D			1.0		W
Power Dissipation ($T_C = 25^\circ\text{C}$)	P_D			5.0		W
Operating and Storage						
Junction Temperature	T_J, T_{stg}		-65 to +200			$^\circ\text{C}$
Thermal Resistance	Q_{JA}			175		$^\circ\text{C/W}$
Thermal Resistance	Q_{JC}			35		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CB0}	$V_{CB} = 50\text{V}$ (2N4928)		0.5	μA
I_{CB0}	$V_{CB} = 75\text{V}$ (2N4929)		0.5	μA
I_{CB0}	$V_{CB} = 150\text{V}$ (2N4930, 2N4931)		1.0	μA
I_{EB0}	$V_{BE} = 3.0\text{V}$ (2N4928, 2N4929)		0.5	μA
I_{EB0}	$V_{BE} = 3.0\text{V}$ (2N4930, 2N4931)		1.0	μA
BV_{CB0}	$I_C = 100\mu\text{A}$ (2N4928)	100		V
BV_{CB0}	$I_C = 100\mu\text{A}$ (2N4929)	150		V
BV_{CB0}	$I_C = 100\mu\text{A}$ (2N4930)	200		V
BV_{CB0}	$I_C = 100\mu\text{A}$ (2N4931)	250		V
BV_{CE0}	$I_C = 10\text{mA}$ (2N4928)	100		V
BV_{CE0}	$I_C = 10\text{mA}$ (2N4929)	150		V
BV_{CE0}	$I_C = 10\text{mA}$ (2N4930)	200		V
BV_{CE0}	$I_C = 10\text{mA}$ (2N4931)	250		V
BV_{EB0}	$I_C = 100\mu\text{A}$	4.0		V
$V_{CE(SAT)}$	$I_C = 10\text{mA}, I_B = 1.0\text{mA}$ (2N4928, 2N4929)		0.5	V
$V_{CE(SAT)}$	$I_C = 10\text{mA}, I_B = 1.0\text{mA}$ (2N4930, 2N4931)		5.0	V
$V_{BE(ON)}$	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$		1.0	V

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

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>UNITS</u>
h_{FE}	$V_{CE} = 10\text{V}, I_C = 1.0\text{mA}$	20		
h_{FE}	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$ (2N4928, 2N4929)	25	200	
h_{FE}	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$ (2N4930, 2N4931)	20	200	
h_{FE}	$V_{CE} = 10\text{V}, I_C = 50\text{mA}$ (2N4928, 2N4929)	20		
h_{FE}	$V_{CE} = 10\text{V}, I_C = 30\text{mA}$ (2N4930, 2N4931)	20		
f_T	$V_{CE} = 20\text{V}, I_C = 20\text{mA}, f = 100\text{MHz}$ (2N4928, 2N4929)	100	1000	MHz
f_T	$V_{CE} = 20\text{V}, I_C = 20\text{mA}, f = 20\text{MHz}$ (2N4930, 2N4931)	20	200	MHz
C_{cb}	$V_{CB} = 20\text{V}, I_E = 0, f = 140\text{kHz}$ (2N4928)		6.0	pF
C_{cb}	$V_{CB} = 20\text{V}, I_E = 0, f = 140\text{kHz}$ (2N4929)		10	pF
C_{cb}	$V_{CB} = 20\text{V}, I_E = 0, f = 140\text{kHz}$ (2N4930, 2N4931)		20	pF
C_{eb}	$V_{BE} = 2.0\text{V}, I_C = 0, f = 140\text{kHz}$ (2N4928)		40	pF
C_{eb}	$V_{BE} = 1.0\text{V}, I_C = 0, f = 140\text{kHz}$ (2N4929)		80	pF
C_{eb}	$V_{BE} = 0.5\text{V}, I_C = 0, f = 140\text{kHz}$ (2N4930, 2N4931)		400	pF