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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°C)

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

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

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

ELECTRICAL CHARACTERISTICS Continued (T_A = 25°C unless otherwise noted)

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