DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

2N4930

PNP HIGH VOLTAGE SILICON TRANSISTOR

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Rating	Symbol	2N4930	Unit
Collector Emitter Voltage	V_{CEO}	200	V
Collector Base Voltage	V_{CBO}	200	V
Emitter Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	200	mA
Total Power Dissipation @ T_A = 25°C (1)	P_D	1.0	W
Total Power Dissipation @ T_c = 25°C (2)	P_D	5.0	W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-65 to +200	°C

Note 1: Derate linearly 5.71 mW/°C for T_A = 25°C
Note 2: Derate linearly 28.6mW/°C for T_C = 25°C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Maximum	Unit
Thermal Resistance Junction-to -Case	$R_{\theta JC}$	35	°C/W

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise specified)

Characteristic	Symbol	Min	Max	Unit
Collector Emitter Breakdown Voltage I_C = 1.0mA	$V_{(BR)CEO}$	200	-	V
Collector Emitter Breakdown voltage I_C = 100µA	$V_{(BR)CBO}$	200	-	V
Emitter Base Breakdown Voltage I_E = 100µA	$V_{(BR)EBO}$	-	5.0	V
Collector Base Cutoff Current V_{CB} = 150V	I_{CBO}	-	250	ŋA
Emitter Base Cutoff Current V_{EB} = 4.0V	I_{EBO}	-	150	ŋA
ON CHARACTERISTICS (3)				
Forward Current Transfer Ratio I_C = 0.1mA, V_{CE} = 10V I_C = 1.0mA, V_{CE} = 10V I_C = 10mA, V_{CE} = 10V I_C = 30mA, V_{CE} = 10V I_C = 50mA, V_{CE} = 20V	h_{FE}	 30 40 40 50 30	 - - - 200 -	-
Collector Emitter Saturation Voltage I_C = 10mA, I_B = 1.0mA I_C = 30mA, I_B = 3.0mA	$V_{CE(sat)}$	 - -	 1.2 1.0	V

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ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise specified)

Characteristic	Symbol	Min	Max	Unit
Base Emitter Saturation Voltage I_C = 10mA, I_B = 1.0mA I_C = 30mA, I_B = 3.0mA	$V_{BE(sat)}$	- -	1.0 1.2	V
DYNAMIC CHARACTERISTICS				
Magnitude of Common Emitter Small Signal Short Circuit Forward Current Transfer Ratio I_C = 10mA, V_{CE} = 20V, f = 20MHz	$\lvert h_{fe} \rvert$	2.0	8.0	-
Small Signal Short Circuit Forward Current Transfer Ratio I_C = 10mA, V_{CE} = 10V, f = 1.0kHz	h_{fe}	30	300	-
Output Capacitance V_{CB} = 20V, I_E = 0, f = ≤ 0.1MHz	C_{obo}	-	15	pF
Input Capacitance V_{EB} = 1.0V, I_C = 0, f = ≤ 0.1MHz	C_{ibo}	-	400	pF
SAFE OPERATING AREA				
DC Tests T_C = +25°C, 1 Cycle, t ≥ 1.0s **Test 1** V_{CE} = 20V, I_C = 50mA **Test 2** V_{CE} = 100V, I_C = 10mA **Test 3** V_{CE} = 200V, I_C = 5.0mA				

Note 3: Pulse width = 30µsec, duty cycle ≤ 2%..

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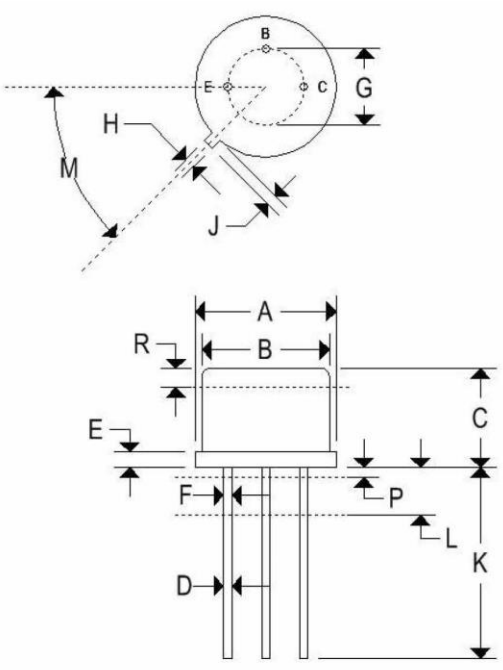
MECHANICAL CHARACTERISTICS

Case	TO-39
Marking	Alpha-numeric
Pin out	See below



	TO-39			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.350	0.370	8.890	9.400
B	0.315	0.335	8.000	8.510
C	0.240	0.260	6.10	6.60
D	0.016	0.021	0.406	0.533
E	0.009	0.125	0.2269	3.180
F	0.016	0.019	0.406	0.533
G	0.190	0.210	4.830	5.33
H	0.028	0.034	0.711	0.864
J	0.029	0.040	0.737	1.020
K	0.500	-	12.700	-
L	0.250	-	6.350	-
M	45° NOM		45° NOM	
P	-	0.050	-	1.270
Q	90° NOM		90° NOM	
R	0.100	-	2.540	-