

2N4924 SILICON

2N4925



SOLID STATE INC.

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BLOOMFIELD, NEW JERSEY 07003

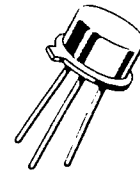
www.solidstateinc.com

NPN SILICON ANNULAR TRANSISTORS

...designed for high-voltage high-frequency amplifier applications

- High Collector-Emitter Breakdown Voltage
 $V_{CE0} = 100 \text{ Vdc (Min) @ } I_C = 10 \text{ mAdc} - 2N4924$
 $150 \text{ Vdc (Min) @ } I_C = 10 \text{ mAdc} - 2N4925$

NPN SILICON
AMPLIFIER
TRANSISTORS



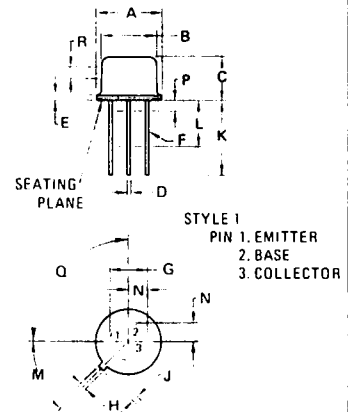
*MAXIMUM RATING

Rating	Symbol	2N4924	2N4925	Unit
Collector-Emitter Voltage	V_{CE0}	100	150	Vdc
Collector-Base Voltage	V_{CB}	100	150	Vdc
Emitter-Base Voltage	V_{EB}	5.0		Vdc
Collector Current - Continuous	I_C	200		mA dc
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	1.0	5.71	Watt mW/ $^\circ\text{C}$
Total Power Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	5.0	28.6	Watts mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$

*Indicates JEDEC Registered Data.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	175	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	35	$^\circ\text{C/W}$



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	8.89	9.40	0.350	0.370
B	8.00	8.51	0.315	0.335
C	6.10	6.60	0.240	0.260
D	0.406	0.533	0.016	0.021
E	0.229	3.18	0.009	0.125
F	0.406	0.483	0.016	0.019
G	4.83	5.33	0.190	0.210
H	0.711	0.864	0.028	0.034
J	0.737	1.02	0.029	0.040
K	12.70	-	0.500	-
L	6.35	-	0.250	-
M	45 $^\circ$ NOM		45 $^\circ$ NOM	
P	-	1.27	-	0.050
Q	90 $^\circ$ NOM		90 $^\circ$ NOM	
R	2.54	-	0.100	-

All JEDEC notes and dimensions apply.

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

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage (1) ($I_C = 10 \text{ mA dc}$, $I_B = 0$)	2N4924 2N4925	BV_{CEO}	100 150	— —	Vdc
Collector-Base Breakdown Voltage ($I_C = 10 \mu\text{A dc}$, $I_E = 0$)	2N4924 2N4925	BV_{CBO}	100 150	— —	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10 \mu\text{A dc}$, $I_C = 0$)		BV_{EBO}	5.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 50 \text{ Vdc}$, $I_E = 0$) ($V_{CB} = 75 \text{ Vdc}$, $I_E = 0$)		I_{CBO}	— —	0.1 0.1	$\mu\text{A dc}$
Emitter Cutoff Current ($V_{BE} = 3.0 \text{ Vdc}$)		I_{EBO}	—	0.1	$\mu\text{A dc}$

ON CHARACTERISTICS (1)

DC Current Gain ($I_C = 1.0 \text{ mA dc}$, $V_{CE} = 10 \text{ Vdc}$) ($I_C = 10 \text{ mA dc}$, $V_{CE} = 10 \text{ Vdc}$) ($I_C = 150 \text{ mA dc}$, $V_{CE} = 10 \text{ Vdc}$)		h_{FE}	25 35 40	— — 200	—
Collector-Emitter Saturation Voltage ($I_C = 10 \text{ mA dc}$, $I_B = 1.0 \text{ mA dc}$) ($I_C = 50 \text{ mA dc}$, $I_B = 5.0 \text{ mA dc}$)		$V_{CE(sat)}$	— —	0.25 0.4	Vdc
Base-Emitter On Voltage ($I_C = 50 \text{ mA dc}$, $V_{CE} = 10 \text{ Vdc}$)		$V_{BE(on)}$	—	0.95	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain-Bandwidth Product (2) ($I_C = 20 \text{ mA dc}$, $V_{CE} = 20 \text{ Vdc}$, $f = 100 \text{ MHz}$)		f_T	100	500	MHz
Collector-Base Capacitance ($V_{CB} = 20 \text{ Vdc}$, $I_E = 0$, $f = 140 \text{ kHz}$)		C_{cb}	—	10	pF
Emitter-Base Capacitance ($V_{EB} = 1.0 \text{ Vdc}$, $I_C = 0$, $f = 140 \text{ kHz}$)		C_{eb}	—	80	pF

*Indicates JEDEC Registered Data.

(1) Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.(2) $f_T = |h_{fe}| \cdot f_{\text{test}}$.