

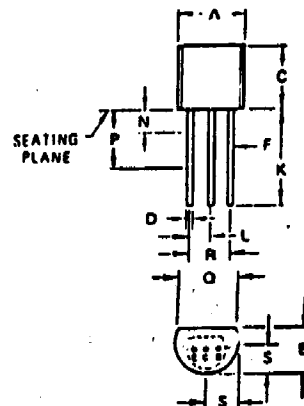
20 STERN AVE.  
 SPRINGFIELD, NEW JERSEY 07081  
 U.S.A.

TELEPHONE: (201) 376-2922  
 (212) 227-8005  
 FAX: (201) 376-8960

# Silicon Transistors 2N4424,5

**FEATURES:**  
 Low Saturation Voltage  
 High Beta  
 900 mW @ 25°C Case ... 2N4424  
 360 mW @ 25°C Free Air 2N4425

absolute maximum ratings: (25°C) (unless otherwise specified)



	2N4424	2N4425	
<b>Voltages</b>			
Collector to Emitter	V <sub>CEO</sub>	40	40 V
Emitter to Base	V <sub>EB0</sub>	5	5 V
Collector to Base	V <sub>CB0</sub>	60	60 V
<b>Current</b>			
Collector (Steady State)*	I <sub>C</sub>	500	500 mA
<b>Dissipation</b>			
Total Power (Free Air at 25°C)**	P <sub>T</sub>	360	560 mW
Total Power (Free Air at 65°C)**	P <sub>T</sub>	250	380 mW
Total Power (Heatsink at 25°C)***	P <sub>T</sub>	—	900 mW
<b>Temperature</b>			
Storage	T <sub>stg</sub>	-55 to +150	°C
Operating	T <sub>J</sub>	+150	°C
Lead soldering, 1/16" ± 1/32" from case for 10 sec. max.	T <sub>L</sub>	+260	°C

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.450	5.200	0.175	0.205
B	3.180	4.150	0.125	0.165
C	4.320	5.330	0.170	0.210
D	0.407	0.533	0.016	0.021
F	0.407	0.482	0.016	0.019
K	17.700	—	0.500	—
L	1.150	1.390	0.045	0.055
N	—	1.270	—	0.050
P	6.350	—	0.250	—
O	3.430	—	0.135	—
R	2.410	2.670	0.095	0.105
S	2.030	2.670	0.080	0.105

\*Determined from power limitations due to saturation voltage at this current.  
 \*\*Derate 2.88mW/°C increase in ambient temperature above 25°C.  
 \*\*\*Derate 7.2 mW/°C for rise in heatsink temperature above 25°C.

## electrical characteristics: (25°C) (unless otherwise specified)

### DC CHARACTERISTICS

		Min.	Max.	
Collector Cutoff Current (V <sub>CB</sub> = 40V) (V <sub>CB</sub> = 40V, T <sub>A</sub> = 100°C) (V <sub>CB</sub> = 40V)	I <sub>CB0</sub>		30	nA
	I <sub>CB0</sub>		10	μA
	I <sub>CS</sub>		30	nA
Emitter Cutoff Current (V <sub>EB</sub> = 5V)	I <sub>EB0</sub>		100	nA
Forward Current Transfer Ratio (V <sub>CB</sub> = 4.5V, I <sub>C</sub> = 2 mA)	h <sub>FE</sub>	180	540	
Collector Emitter Breakdown Voltage (I <sub>C</sub> = 10 mA)	V <sub>(BR)CEO</sub>	40		V
Collector Base Breakdown Voltage (I <sub>C</sub> = 10 μA)	V <sub>(BR)CBO</sub>	60		V
Emitter Base Breakdown Voltage (I <sub>E</sub> = 0.1 μA)	V <sub>(BR)EBO</sub>	5		V
Collector Saturation Voltage (I <sub>B</sub> = 3 mA, I <sub>C</sub> = 50 mA)	V <sub>CE(sat)</sub>		.30	V
Base Saturation Voltage (I <sub>B</sub> = 3 mA, I <sub>C</sub> = 50 mA)	V <sub>BE(sat)</sub>		.85	V

### SMALL SIGNAL CHARACTERISTICS

		Min.	Typical	
Forward Current Transfer Ratio Collector Voltage (V <sub>C</sub> = 4.5V, I <sub>C</sub> = 2 mA, f = 1 kHz)	h <sub>fc</sub>	180		
Forward Current Transfer Ratio Input Impedance Output Admittance Voltage Feedback Ratio (V <sub>CE</sub> = 10V, I <sub>C</sub> = 1 mA, f = 1 kHz, T <sub>A</sub> = 25°C)	h <sub>fc</sub>		180	
	h <sub>ie</sub>		5100	ohms
	h <sub>oe</sub>		14	μmhos
	h <sub>re</sub>		.27	×10 <sup>-3</sup>