Micro Commercial Components
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CA 91311
Phone: (818) 701-4933
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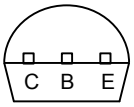
2N4123
2N4124

NPN Silicon General Purpose Transistor
625mW

Features

- Through Hole TO-92 Package
- Capable of 625mWatts of Power Dissipatio

Pin Configuration
Bottom View



Mechanical Data

- Case: TO-92, Molded Plastic
- Marking:

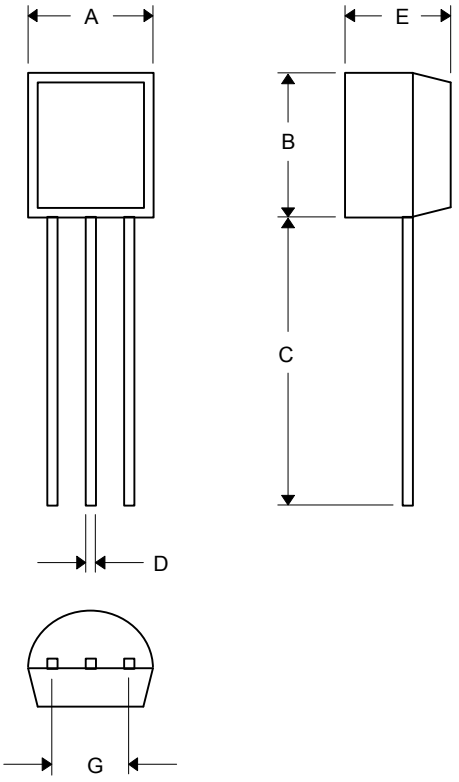
  2N4123 --------- 2N4123

  2N4124 --------- 2N4124

Maximum Ratings @ 25°C Unless Otherwise Specified

Charateristic		Symbol	Value	Unit
Collector-Emitter Voltage	2N4123 2N4124	V_{CEO}	30 25	V
Collector-Base Voltage	2N4123 2N4124	V_{CBO}	40 30	V
Emitter-Base Voltage	2N4123 2N4124	V_{EBO}	5	V
Collector Current(DC)		I_C	200	mA
Power Dissipation@T_A=25°C		P_d	625 5.0	mW mW/°C
Power Dissipation@T_C=25°C		P_d	1.5 12	W mW/°C
Thermal Resistance, Junction to Ambient Air		$R_{\Theta JA}$	200	°C/W
Thermal Resistance, Junction to Case		$R_{\Theta JC}$	83.3	°C/W
Operating & Storage Temperature		T_j, T_{STG}	-55~150	°C

TO-92



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.175	.185	4.45	4.70	
B	.175	.185	4.46	4.70	
C	.500	---	12.7	---	
D	.016	.020	0.41	0.63	
E	.135	.145	3.43	3.68	
G	.095	.105	2.42	2.67	

2N4123

2N4124

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

Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector–Emitter Breakdown Voltage(1) (I_C = 1.0 mAdc, I_E= 0)	2N4123 2N4124	$V_{(BR)CEO}$	 30 25	 — —	Vdc
Collector–Base Breakdown Voltage (I_C = 10 μAdc, I_E = 0)	2N4123 2N4124	$V_{(BR)CBO}$	 40 30	 — —	Vdc
Emitter–Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)		$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current (V_{CB} = 20 Vdc, I_E = 0)		I_{CBO}	—	50	nAdc
Emitter Cutoff Current (V_{EB} = 3.0 Vdc, I_C = 0)		I_{EBO}	—	50	nAdc
ON CHARACTERISTICS(1)					
DC Current Gain (I_C =2.0 mAdc, VCE = 1.0 Vdc) (I_C = 50 mAdc, V_{CE} = 1.0 Vdc)	2N4123 2N4124 2N4123 2N4124	h_{FE}	50 120 25 60	— —	
Collector–Emitter Saturation Voltage (I_C = 50mAdc, IB = 5.0 mAdc)		$V_{CE(sat)}$	—	0.3	Vdc
Base–Emitter Saturation Voltage (I_C = 50mAdc, IB = 5.0 mAdc)		$V_{BE(sat)}$	—	0.95	Vdc
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain-Bandwidth Product (I_C=10mAdc, V_{CE}=20Vdc, f=100MHz)	2N4123 2N4124	f_T	250 300	--- ---	MHz
Input Capacitance (V_{EB}=0.5Vdc, I_C=0, f=1.0MHz)		C_{ibo}	–	8.0	pF
Collector-Base Capacitance (V_{CB}=5.0Vdc, I_E=0, f=1.0MHz)		C_{cb}	–	4.0	pF
Small-Signal Current Gain (I_C=2.0mAdc,V_{CE}=10Vdc, R_S=10kohm,f=1.0kHz)	2N4123 2N4124	h_{fe}	50 120	200 480	---
Current Gain-High Frequency (I_C=10mAdc,V_{CE}=20Vdc, f=100kHz) (I_C=2.0mAdc,V_{CE}=10Vdc, f=1.0kHz)	2N4123 2N4124 2N4123 2N4124	Ihfel	2.5 3.0 50 120	--- --- 200 480	---
Noise Figure (I_C=100uAdc,V_{CE}=5.0Vdc, R_S=1.0kohm,f=1.0kHz)	2N4123 2N4124	NF	--- ---	6.0 5.0	dB

1 Pulse Test:Pulse Width = 300μs, Duty Cycle = 2.0%

2N4123
2N4124

Figure 1. Capacitance

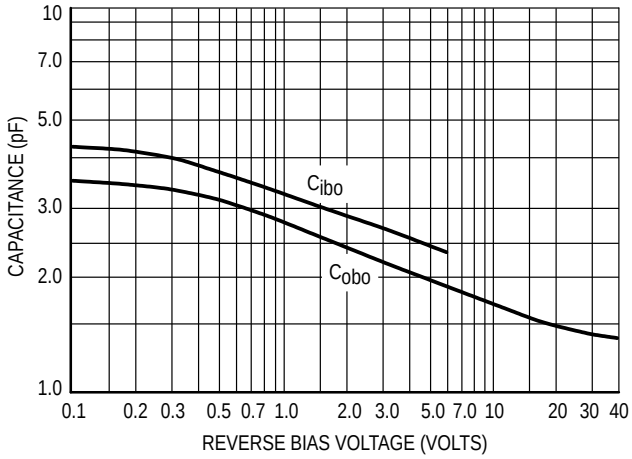


Figure 2. Switching Times

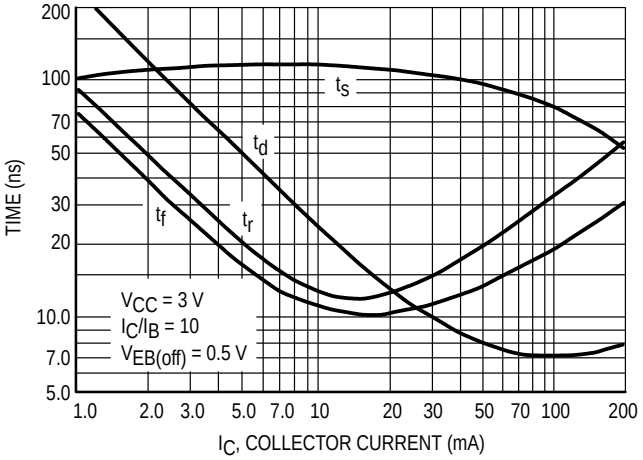


Figure 3. Frequency Variations

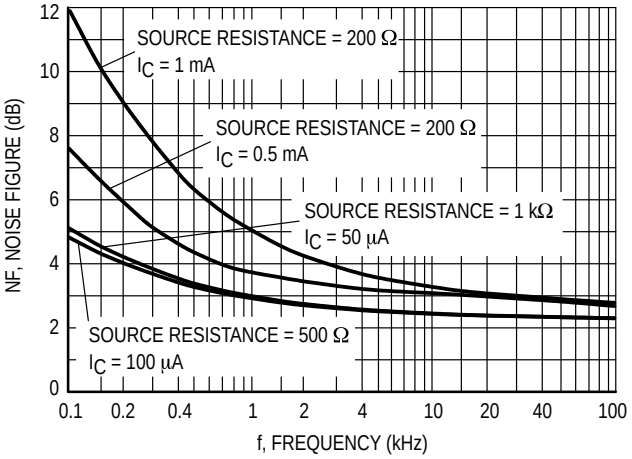


Figure 4. Source Resistance

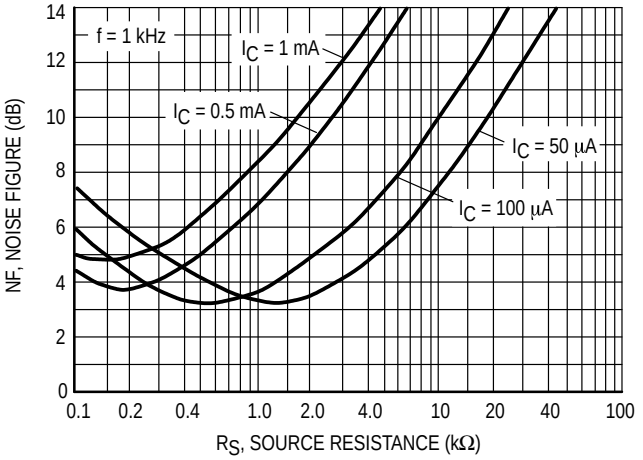


Figure 5. Current Gain

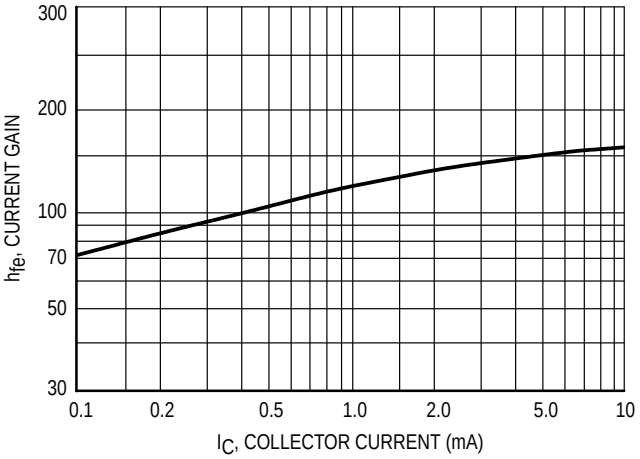


Figure 6. Qutput Admittance

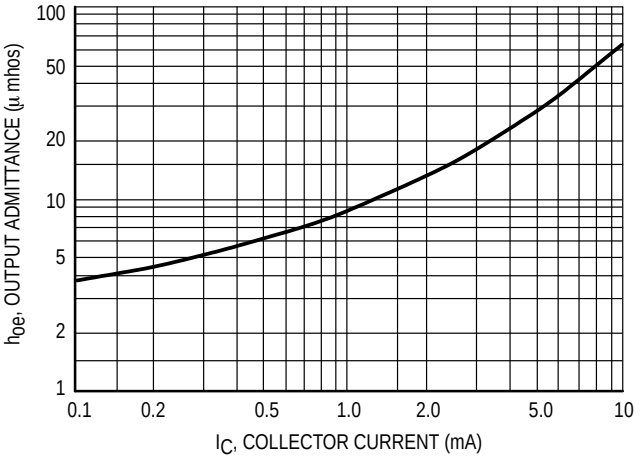


Figure 7. Input Impedance

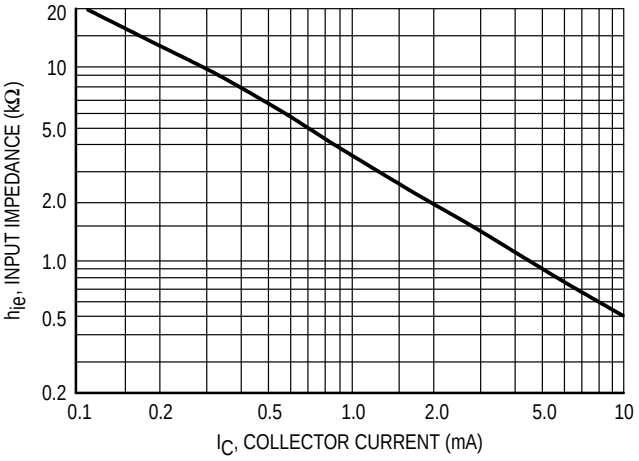


Figure 8. Voltage Feedback Ratio

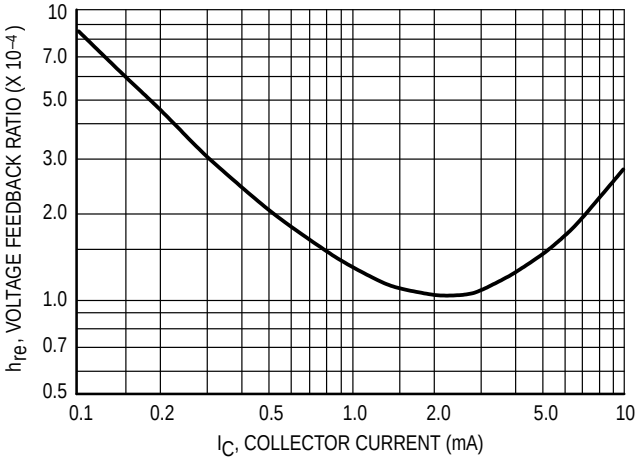


Figure 9. DC Current Gain

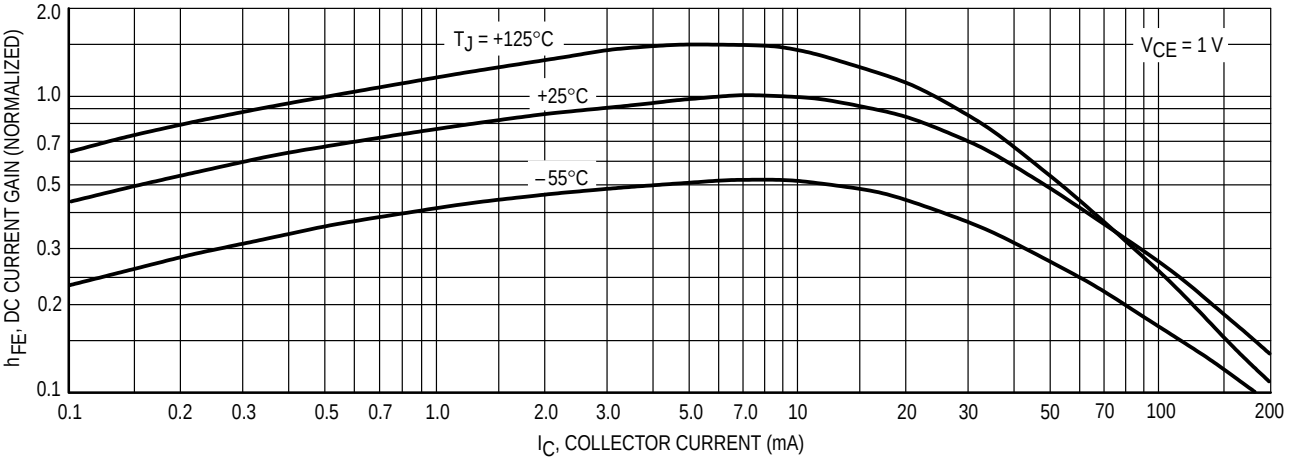


Figure 10. Collector Saturation Region

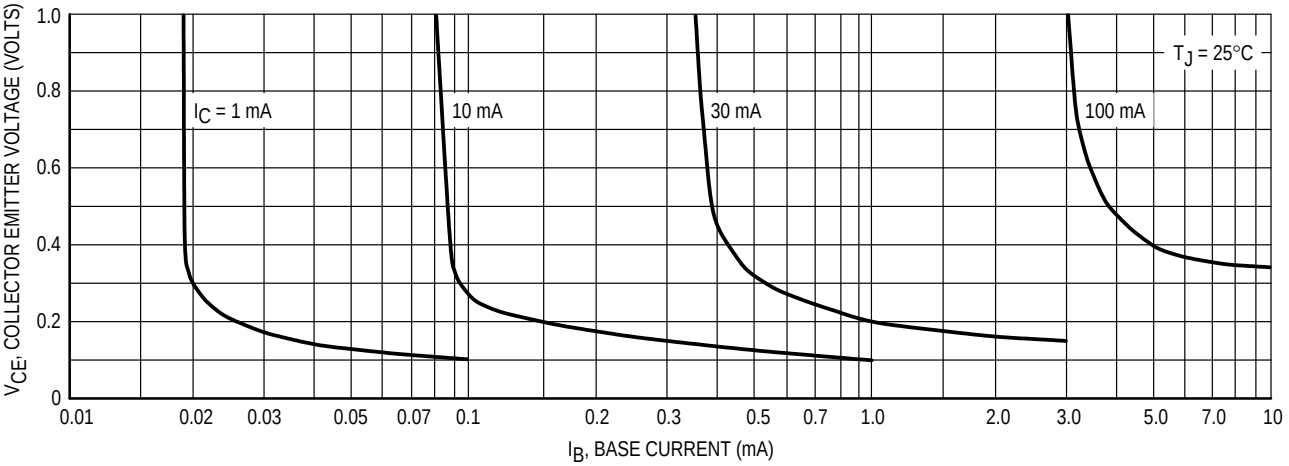


Figure 11. "ON" Voltages

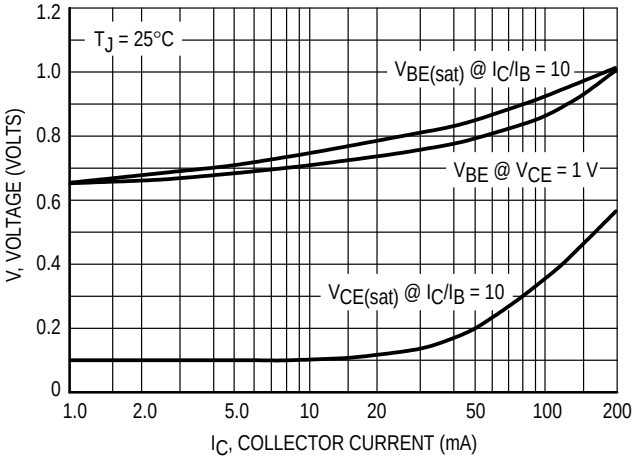


Figure 12. Temperature Coefficients