



PRODUCT NAME : 2N4123 NPN General Purpose Transistor (Pack of 5)

PRICE : Rs 20.00

SKU : RM2055



NOTE: THE PRODUCT MAY BE DIFFERENT FROM IMAGE SHOWN. Copyrights by Robomart.com

DESCRIPTION

Features

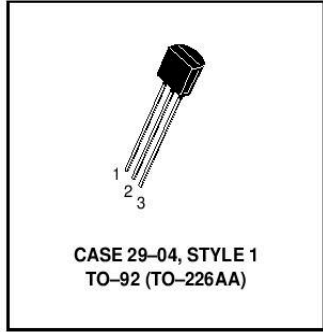
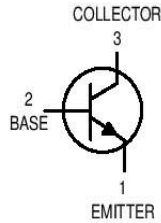
- Collector-Emitter Volt (V_{ce0}): 30V
- Collector-Base Volt (V_{cb0}): 40V
- Collector Current (I_c): 0.2A
- h_{fe} : 50-150 @ 2mA
- Power Dissipation (P_{tot}): 625mW
- Current-Gain-Bandwidth (f_{total}): 250MHz
- Type: PNP

MOTOROLA
SEMICONDUCTOR TECHNICAL DATA

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General Purpose Transistors
NPN Silicon

2N4123
2N4124



MAXIMUM RATINGS

Rating	Symbol	2N4123	2N4124	Unit
Collector–Emitter Voltage	V_{CE0}	30	25	Vdc
Collector–Base Voltage	V_{CB0}	40	30	Vdc
Emitter–Base Voltage	V_{EBO}	5.0		Vdc
Collector Current — Continuous	I_C	200		mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	625	5.0	mW mW/°C
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.5	12	Watts mW/°C
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–55 to +150		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	°C/W

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⁾ ($I_C = 1.0 \text{ mAdc}, I_E = 0$)	$V_{(BR)CEO}$	30 25	— —	Vdc
Collector–Base Breakdown Voltage ($I_C = 10 \mu\text{Adc}, I_E = 0$)	$V_{(BR)CBO}$	40 30	— —	Vdc
Emitter–Base Breakdown Voltage ($I_E = 10 \mu\text{Adc}, I_C = 0$)	$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 20 \text{ Vdc}, I_E = 0$)	I_{CBO}	—	50	nAdc
Emitter Cutoff Current ($V_{EB} = 3.0 \text{ Vdc}, I_C = 0$)	I_{EBO}	—	50	nAdc

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

2N4123 2N4124

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

Characteristic	Symbol	Min	Max	Unit
ON CHARACTERISTICS				
DC Current Gain ⁽¹⁾ ($I_C = 2.0\text{ mAdc}$, $V_{CE} = 1.0\text{ Vdc}$)	h_{FE}	50	150	—
2N4123		120	360	
2N4124				
($I_C = 50\text{ mAdc}$, $V_{CE} = 1.0\text{ Vdc}$)		25	—	—
2N4123		60	—	
2N4124				
Collector–Emitter Saturation Voltage ⁽¹⁾ ($I_C = 50\text{ mAdc}$, $I_B = 5.0\text{ mAdc}$)	$V_{CE(sat)}$	—	0.3	Vdc
Base–Emitter Saturation Voltage ⁽¹⁾ ($I_C = 50\text{ mAdc}$, $I_B = 5.0\text{ mAdc}$)	$V_{BE(sat)}$	—	0.95	Vdc

SMALL–SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product ($I_C = 10\text{ mAdc}$, $V_{CE} = 20\text{ Vdc}$, $f = 100\text{ MHz}$)	f_T	250	—	MHz
2N4123		300	—	
2N4124				
Input Capacitance ($V_{EB} = 0.5\text{ Vdc}$, $I_C = 0$, $f = 1.0\text{ MHz}$)	C_{ibo}	—	8.0	pF
Collector–Base Capacitance ($I_E = 0$, $V_{CB} = 5.0\text{ V}$, $f = 1.0\text{ MHz}$)	C_{cb}	—	4.0	pF
Small–Signal Current Gain ($I_C = 2.0\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$, $R_S = 10\text{ k ohm}$, $f = 1.0\text{ kHz}$)	h_{fe}	50	200	—
2N4123		120	480	
2N4124				
Current Gain — High Frequency ($I_C = 10\text{ mAdc}$, $V_{CE} = 20\text{ Vdc}$, $f = 100\text{ MHz}$)	$ h_{fe} $	2.5	—	—
2N4123		3.0	—	
2N4124				
($I_C = 2.0\text{ mAdc}$, $V_{CE} = 10\text{ V}$, $f = 1.0\text{ kHz}$)		50	200	
($I_C = 2.0\text{ mAdc}$, $V_{CE} = 10\text{ V}$, $f = 1.0\text{ kHz}$)		120	480	
2N4123				
2N4124				
Noise Figure ($I_C = 100\text{ }\mu\text{Adc}$, $V_{CE} = 5.0\text{ Vdc}$, $R_S = 1.0\text{ k ohm}$, $f = 1.0\text{ kHz}$)	NF	—	6.0	dB
2N4123		—	5.0	
2N4124				

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

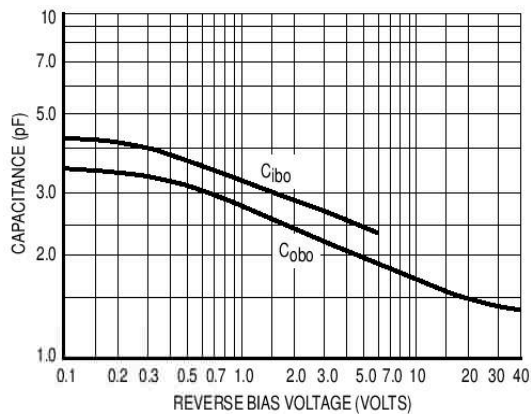


Figure 1. Capacitance

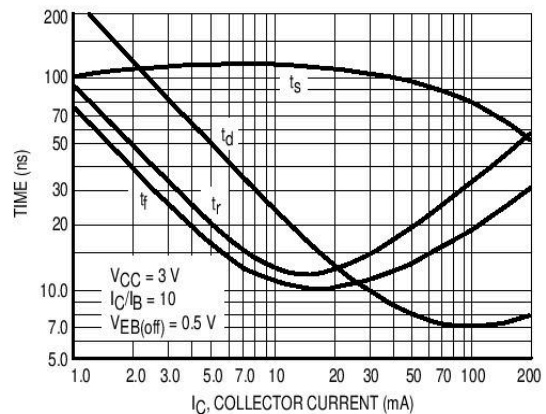


Figure 2. Switching Times

