



PRODUCT NAME : 2N4410 NPN General Purpose Transistor

PRICE : Rs 20.00

SKU : RM2068



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

DESCRIPTION

Features

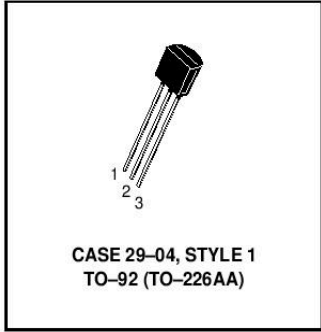
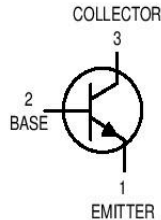
- Collector-Emitter Volt (V_{ce0}): 80V
- Collector-Base Volt (V_{cb0}): 120V
- Collector Current (I_c): 0.25A
- h_{fe} : 60-400 @ 10mA
- Power Dissipation (P_{tot}): 625mW
- Current-Gain-Bandwidth (f_{total}): 300MHz
- Type: PNP

MOTOROLA
SEMICONDUCTOR TECHNICAL DATA

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Amplifier Transistor
NPN Silicon

2N4410



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	80	Vdc
Collector–Base Voltage	V_{CBO}	120	Vdc
Emitter–Base Voltage	V_{EBO}	5.0	Vdc
Collector Current — Continuous	I_C	250	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	625 5.0	mW mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.5 12	Watts mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–55 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

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

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⁾ ($I_C = 1.0 \text{ mAdc}, I_B = 0$)	$V_{(BR)CEO}$	80	—	Vdc
Collector–Emitter Breakdown Voltage ($I_C = 500 \mu\text{Adc}, V_{BE} = 5.0 \text{ Vdc}, R_{BE} = 8.2 \text{ k ohms}$)	$V_{(BR)CEX}$	120	—	Vdc
Collector–Base Breakdown Voltage ($I_C = 10 \mu\text{Adc}, I_E = 0$)	$V_{(BR)CBO}$	120	—	Vdc
Emitter–Base Breakdown Voltage ($I_E = 10 \mu\text{Adc}, I_C = 0$)	$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 100 \text{ Vdc}, I_E = 0$) ($V_{CB} = 100 \text{ Vdc}, I_E = 0, T_A = 100^\circ\text{C}$)	I_{CBO}	— —	0.01 1.0	μAdc
Emitter Cutoff Current ($V_{EB} = 4.0 \text{ Vdc}, I_C = 0$)	I_{EBO}	—	0.1	μAdc

1. Pulse Test: Pulse Width $\leq 300 \mu\text{s}$, Duty Cycle $\leq 2.0\%$.

REV 1

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2N4410

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

Characteristic	Symbol	Min	Max	Unit
ON CHARACTERISTICS				
DC Current Gain ($I_C = 1.0\text{ mAdc}$, $V_{CE} = 1.0\text{ Vdc}$) ($I_C = 10\text{ mAdc}$, $V_{CE} = 1.0\text{ Vdc}$)	h_{FE}	60 60	— 400	—
Collector–Emitter Saturation Voltage ($I_C = 1.0\text{ mAdc}$, $I_B = 0.1\text{ mAdc}$)	$V_{CE(sat)}$	—	0.2	Vdc
Base–Emitter Saturation Voltage ($I_C = 1.0\text{ mAdc}$, $I_B = 0.1\text{ mAdc}$)	$V_{BE(sat)}$	—	0.8	Vdc
Base–Emitter On Voltage ($I_C = 1.0\text{ mAdc}$, $V_{CE} = 5.0\text{ Vdc}$)	$V_{BE(on)}$	—	0.8	Vdc

SMALL–SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product ⁽²⁾ ($I_C = 10\text{ mAdc}$, $V_{CE} = 10\text{ Vdc}$, $f = 20\text{ MHz}$)	f_T	60	300	MHz
Collector–Base Capacitance ($V_{CB} = 10\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$, emitter guarded)	C_{cb}	—	12	pF
Emitter–Base Capacitance ($V_{EB} = 0.5\text{ Vdc}$, $I_C = 0$, $f = 1.0\text{ MHz}$, collector guarded)	C_{eb}	—	50	pF

2. $f_T = |h_{fe}| \cdot f_{test}$.

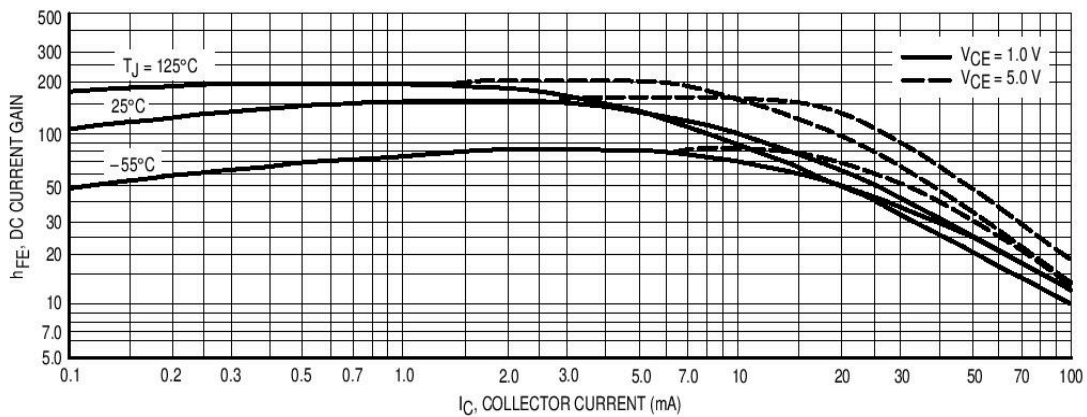


Figure 1. DC Current Gain

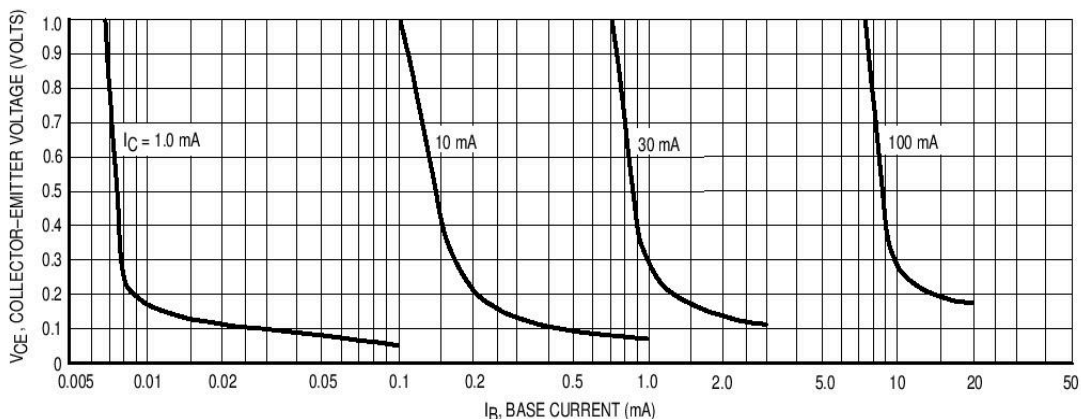


Figure 2. Collector Saturation Region

