



Micro Commercial Components

Micro Commercial Components
20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

2N5401

PNP Silicon Amplifier Transistor 625mW

Features

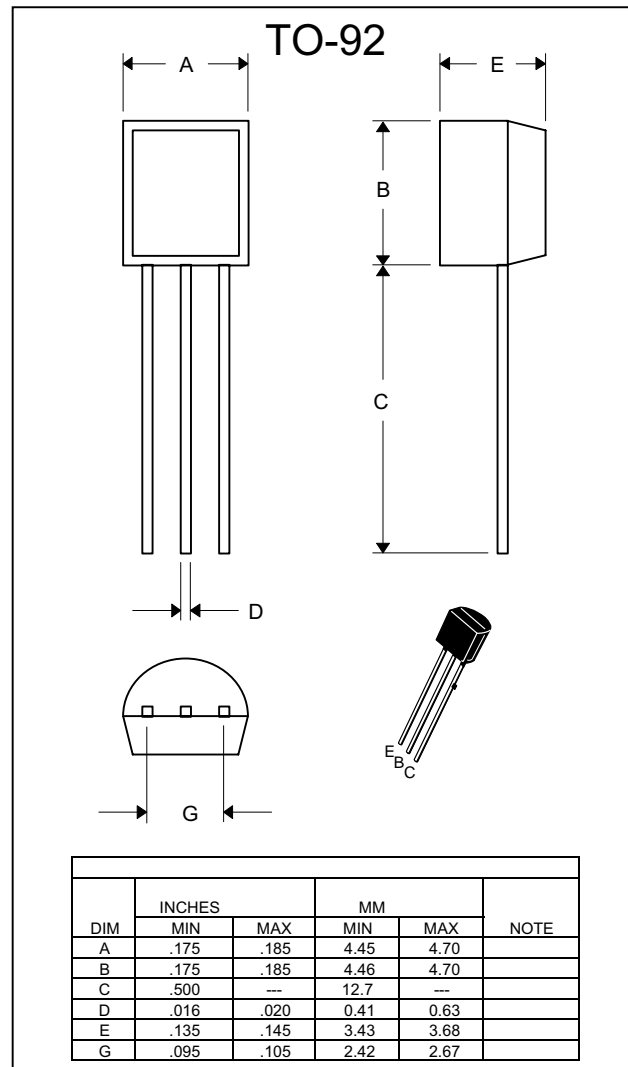
- Through Hole Package
- 150°C Junction Temperature
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL rating 1
- Lead Free Finish/Rohs Compliant ("P" Suffix designates Compliant. See ordering information)

Mechanical Data

- Case: TO-92, Molded Plastic
- Marking: 2N5401

Maximum Ratings @ 25°C Unless Otherwise Specified

Charateristic	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	150	V
Collector-Base Voltage	V_{CBO}	160	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current(DC)	I_C	600	mA
Power Dissipation@ $T_A=25^\circ\text{C}$ Derate above 25°C	P_d	625 5.0	mW mW/°C
Power Dissipation@ $T_C=25^\circ\text{C}$ Derate above 25°C	P_d	1.5 12	W mW/°C
Maximum Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	200	°C/mW
Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$	83.3	°C/mW
Operating & Storage Temperature	T_j, T_{STG}	-55~150	°C



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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector–Emitter Breakdown Voltage ⁽¹⁾ ($I_C = 1.0\text{ mA}$, $I_B = 0$)	$V_{(BR)CEO}$	150	—	Vdc
Collector–Base Breakdown Voltage ($I_C = 100\text{ }\mu\text{A}$, $I_E = 0$)	$V_{(BR)CBO}$	160	—	Vdc
Emitter–Base Breakdown Voltage ($I_E = 10\text{ }\mu\text{A}$, $I_C = 0$)	$V_{(BR)EBO}$	5.0	—	Vdc
Collector Cutoff Current ($V_{CB} = 120\text{ Vdc}$, $I_E = 0$) ($V_{CB} = 120\text{ Vdc}$, $I_E = 0$, $T_A = 100^\circ\text{C}$)	I_{CBO}	—	50	
Emitter Cutoff Current ($V_{EB} = 3.0\text{ Vdc}$, $I_C = 0$)	I_{EBO}	—	50	nAdc

ON CHARACTERISTICS(1)

DC Current Gain ($I_C = 1.0\text{ mA}$, $V_{CE} = 5.0\text{ Vdc}$) ($I_C = 10\text{ mA}$, $V_{CE} = 5.0\text{ Vdc}$) ($I_C = 50\text{ mA}$, $V_{CE} = 5.0\text{ Vdc}$)	h_{FE}	50 60 50	— 240 —	—
Collector–Emitter Saturation Voltage ($I_C = 10\text{ mA}$, $I_B = 1.0\text{ mA}$) ($I_C = 50\text{ mA}$, $I_B = 5.0\text{ mA}$)	$V_{CE(sat)}$	— —	0.2 0.5	Vdc
Base–Emitter Saturation Voltage ($I_C = 10\text{ mA}$, $I_B = 1.0\text{ mA}$) ($I_C = 50\text{ mA}$, $I_B = 5.0\text{ mA}$)	$V_{BE(sat)}$	— —	1.0 1.0	Vdc

SMALL–SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product ($I_C = 10\text{ mA}$, $V_{CE} = 10\text{ Vdc}$, $f = 100\text{ MHz}$)	f_T	100	300	MHz
Output Capacitance ($V_{CB} = 10\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{obo}	—	6.0	pF
Small–Signal Current Gain ($I_C = 1.0\text{ mA}$, $V_{CE} = 10\text{ Vdc}$, $f = 1.0\text{ kHz}$)	h_{fe}	40	200	—
Noise Figure ($I_C = 250\text{ }\mu\text{A}$, $V_{CE} = 5.0\text{ Vdc}$, $R_S = 1.0\text{ k}\Omega$, $f = 1.0\text{ kHz}$)	NF	—	8.0	dB

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

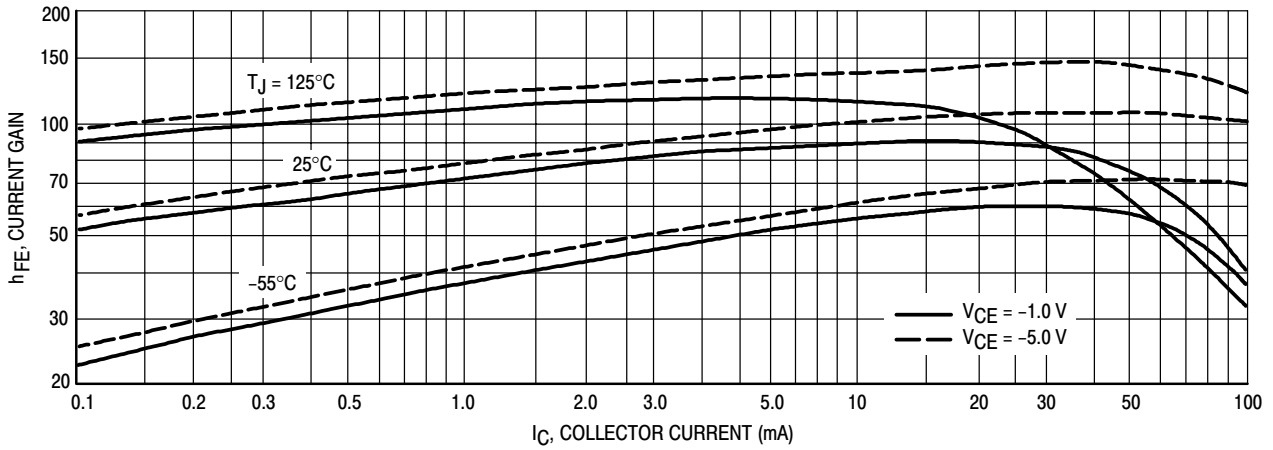


Figure 1. DC Current Gain

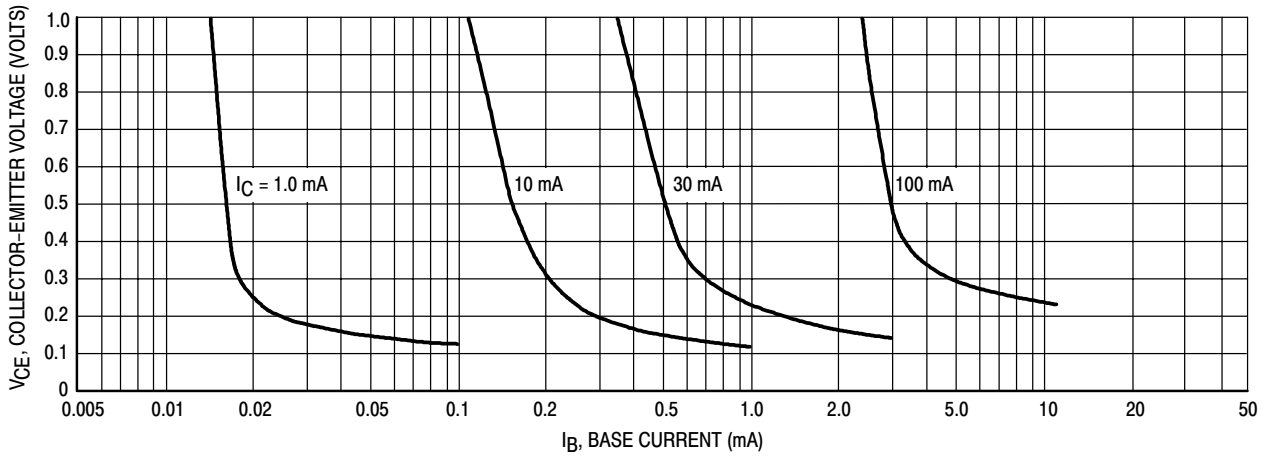


Figure 2. Collector Saturation Region

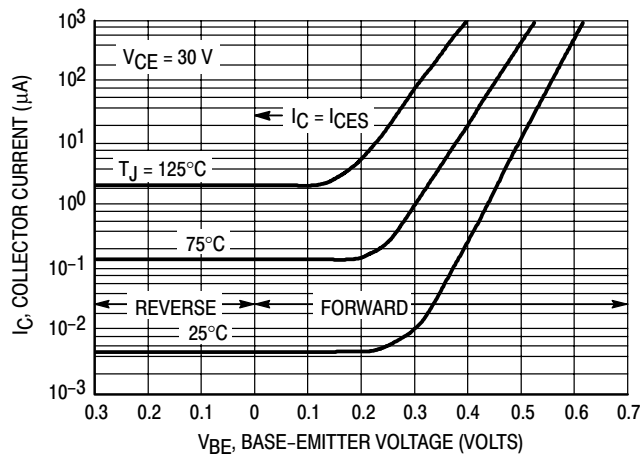


Figure 3. Collector Cut-Off Region

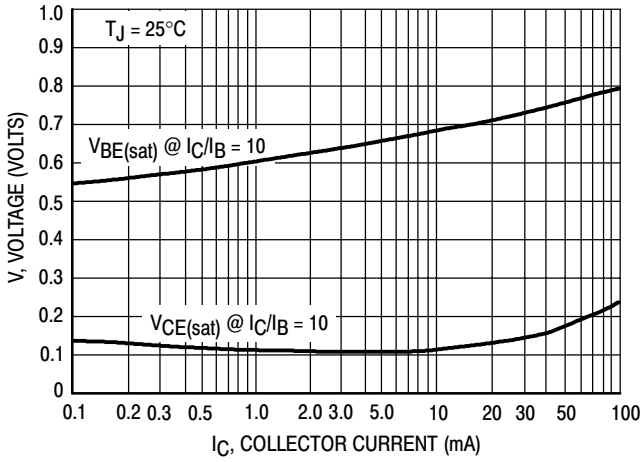


Figure 4. "On" Voltages

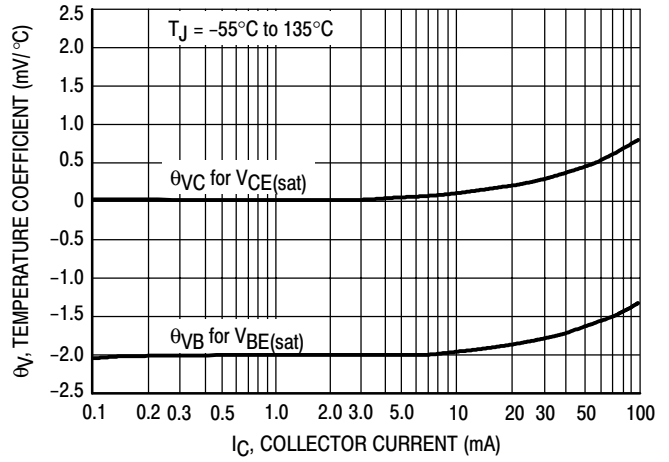


Figure 5. Temperature Coefficients

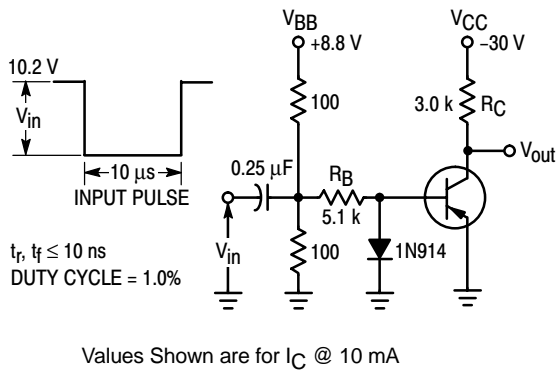


Figure 6. Switching Time Test Circuit

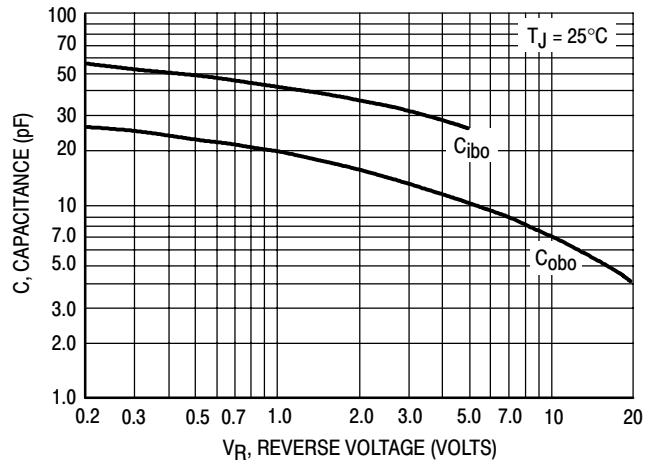


Figure 7. Capacitances

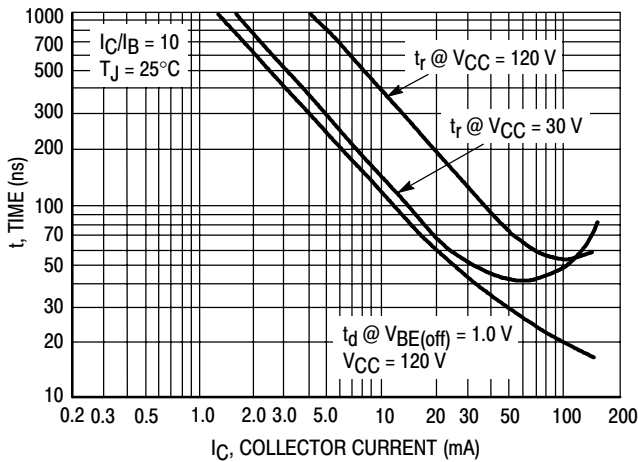


Figure 8. Turn-On Time

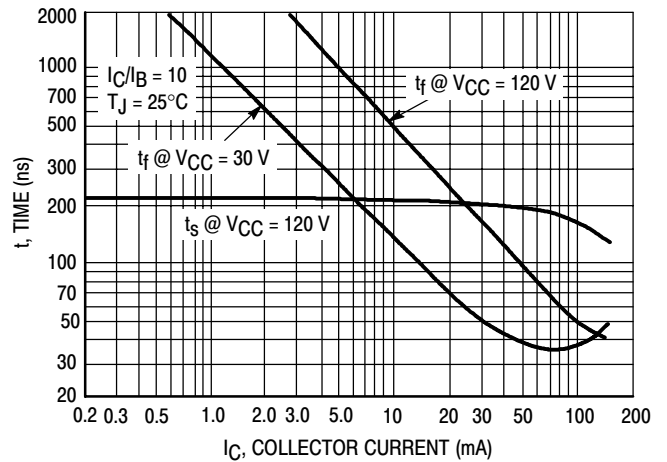


Figure 9. Turn-Off Time



Micro Commercial Components

Ordering Information

Device	Packing
(Part Number)-AP	Ammo Packing;2Kpcs/AmmoBox
(Part Number)-BP	Bulk;1Kpcs/Bag

IMPORTANT NOTICE

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. *Micro Commercial Components Corp.* does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold *Micro Commercial Components Corp.* and all the companies whose products are represented on our website, harmless against all damages.

APPLICATIONS DISCLAIMER

Products offer by *Micro Commercial Components Corp.* are not intended for use in Medical, Aerospace or Military Applications.