



Micro Commercial Components

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2N4401

NPN General Purpose Amplifier

Features

- Through Hole Package
- Capable of 600mWatts of Power Dissipation
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL rating 1
- Marking: Type number
- Lead Free Finish/Rohs Compliant ("P" Suffix designates Compliant. See ordering information)

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* ($I_C=1.0mA_{dc}$, $I_B=0$)	40		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=10mA_{dc}$, $I_E=0$)	60		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=0.1mA_{dc}$, $I_C=0$)	6.0		Vdc
I_{BL}	Base Cutoff Current ($V_{CE}=35V_{dc}$, $V_{BE}=0.4V_{dc}$)		0.1	μA_{dc}
I_{CEX}	Collector Cutoff Current ($V_{CE}=35V_{dc}$, $V_{BE}=0.4V_{dc}$)		0.1	μA_{dc}

ON CHARACTERISTICS

h_{FE}	DC Current Gain* ($I_C=0.1mA_{dc}$, $V_{CE}=1.0V_{dc}$) ($I_C=1.0mA_{dc}$, $V_{CE}=1.0V_{dc}$) ($I_C=10mA_{dc}$, $V_{CE}=1.0V_{dc}$) ($I_C=150mA_{dc}$, $V_{CE}=1.0V_{dc}$) ($I_C=500mA_{dc}$, $V_{CE}=1.0V_{dc}$)	20 40 80 100 40	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=150mA_{dc}$, $I_B=15mA_{dc}$) ($I_C=500mA_{dc}$, $I_B=50mA_{dc}$)		0.4 0.75	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=150mA_{dc}$, $I_B=15mA_{dc}$) ($I_C=500mA_{dc}$, $I_B=50mA_{dc}$)	0.75	0.95 1.2	Vdc

SMALL-SIGNAL CHARACTERISTICS

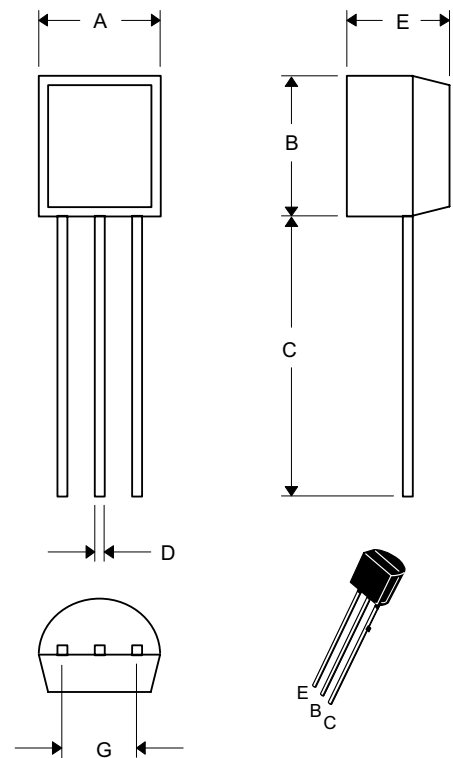
f_T	Current Gain-Bandwidth Product ($I_C=20mA_{dc}$, $V_{CE}=10V_{dc}$, $f=100MHz$)	250		MHz
C_{cb}	Collector-Base Capacitance ($V_{CB}=5.0V_{dc}$, $I_E=0$, $f=100kHz$)		6.5	pF
C_{eb}	Emitter-Base Capacitance ($V_{BE}=0.5V_{dc}$, $I_C=0$, $f=100kHz$)		30.0	pF

SWITCHING CHARACTERISTICS

t_d	Delay Time	($V_{CC}=30V_{dc}$, $V_{BE}=0.2V_{dc}$)	15	ns
t_r	Rise Time	($I_C=150mA_{dc}$, $I_{B1}=15mA_{dc}$)	20	ns
t_s	Storage Time	($V_{CC}=30V_{dc}$, $I_C=150mA_{dc}$)	225	ns
t_f	Fall Time	($I_{B1}=I_{B2}=15mA_{dc}$)	30	ns

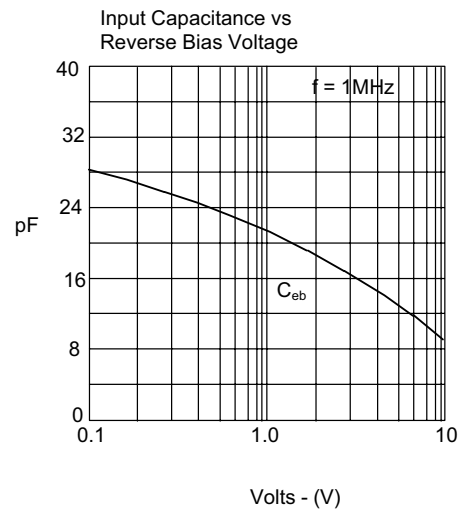
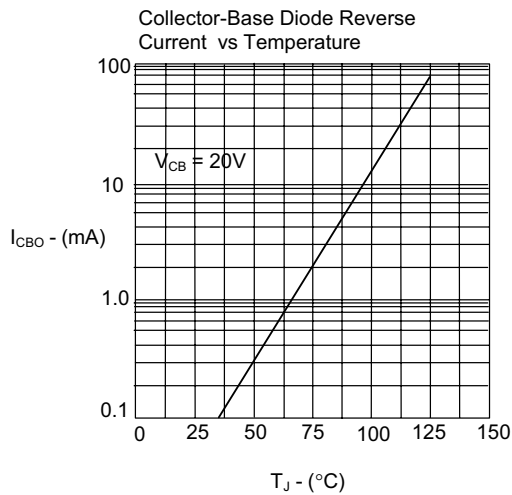
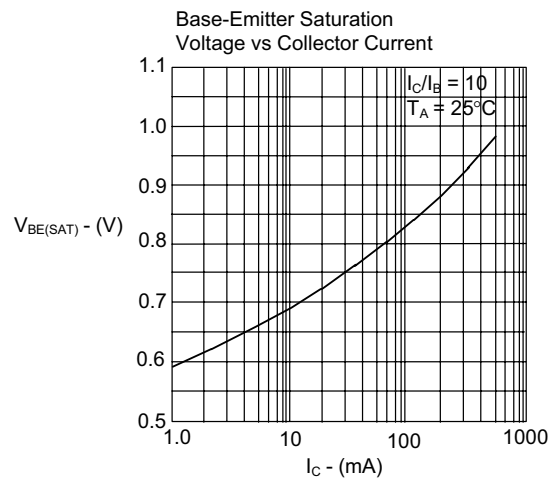
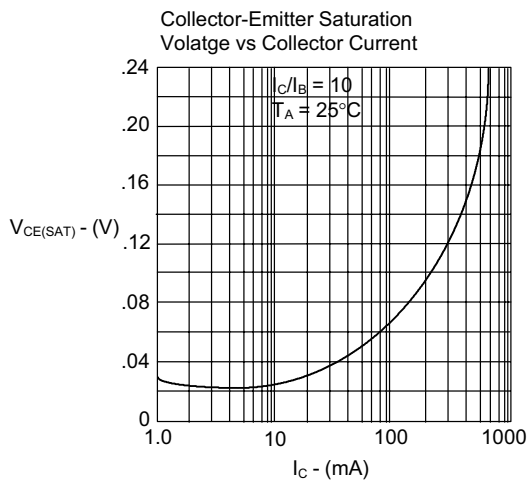
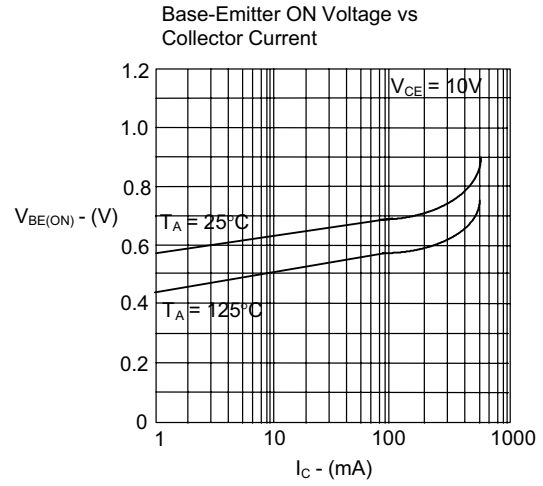
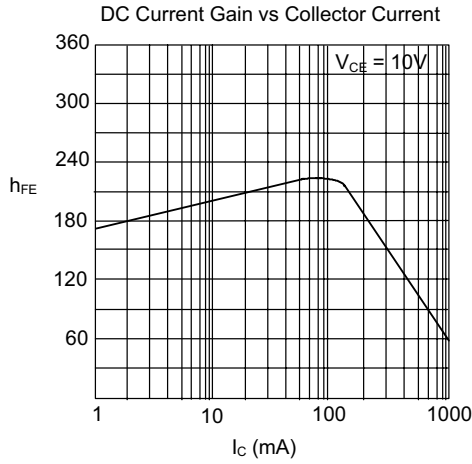
*Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2.0\%$

TO-92



DIM	DIMENSIONS				NOTE
	INCHES		MM		
A	.170	.190	4.33	4.83	
B	.170	.190	4.30	4.83	
C	.550	.590	13.97	14.97	
D	.010	.020	0.36	0.56	
E	.130	.160	3.30	3.96	
G	.010	.104	2.44	2.64	

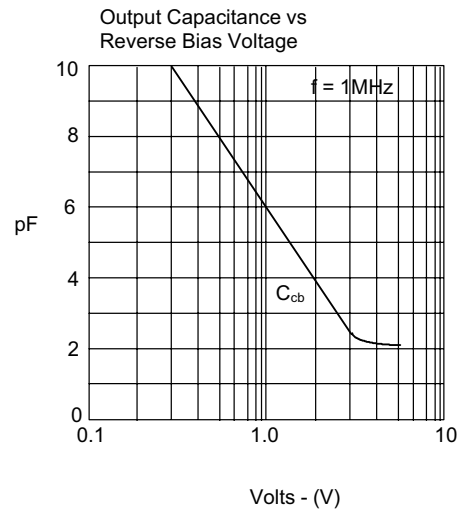
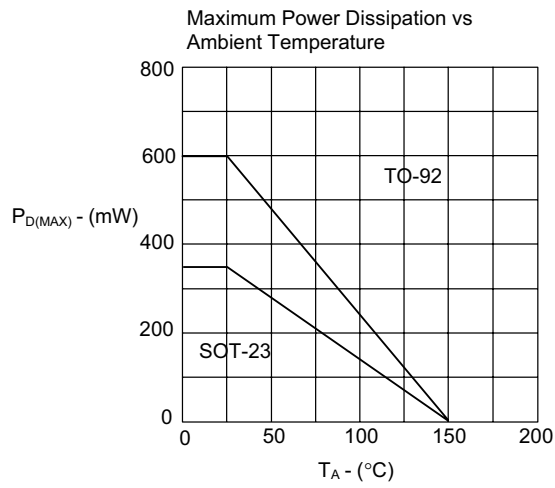
www.mccsemi.com



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Ordering Information

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

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