



Micro Commercial Components

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# 2N4403

## PNP 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
<b>OFF CHARACTERISTICS</b>				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* ( $I_C = -1.0mA$ , $I_B = 0$ )	-40		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C = -10\mu A$ , $I_E = 0$ )	-40		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_E = -10\mu A$ , $I_C = 0$ )	-5.0		Vdc
$I_{BL}$	Base Cutoff Current ( $V_{CE} = -30Vdc$ , $V_{BE} = -3.0Vdc$ )		-0.1	$\mu A$
$I_{CEX}$	Collector Cutoff Current ( $V_{CE} = -30Vdc$ , $V_{BE} = -3.0Vdc$ )		-0.1	$\mu A$

### ON CHARACTERISTICS

$h_{FE}$	DC Current Gain* ( $I_C = -0.1mA$ , $V_{CE} = -1.0Vdc$ ) ( $I_C = -1.0mA$ , $V_{CE} = -1.0Vdc$ ) ( $I_C = -10mA$ , $V_{CE} = -1.0Vdc$ ) ( $I_C = -150mA$ , $V_{CE} = -2.0Vdc$ ) ( $I_C = -500mA$ , $V_{CE} = -2.0Vdc$ )	30 60 100 100 20	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C = -150mA$ , $I_B = -15mA$ ) ( $I_C = -500mA$ , $I_B = -50mA$ )		-0.4 -0.75	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ( $I_C = -150mA$ , $I_B = -15mA$ ) ( $I_C = -500mA$ , $I_B = -50mA$ )	-0.75	-0.95 -1.30	Vdc

### SMALL-SIGNAL CHARACTERISTICS

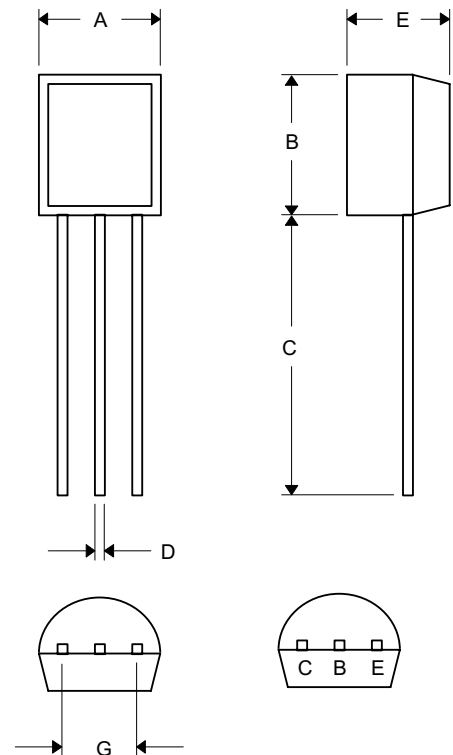
$f_T$	Current Gain-Bandwidth Product ( $I_C = -20mA$ , $V_{CE} = -10Vdc$ , $f = 100MHz$ )	200		MHz
$C_{cb}$	Output Capacitance ( $V_{CB} = -10Vdc$ , $I_E = 0$ , $f = 140kHz$ )		8.5	pF
$C_{eb}$	Input Capacitance ( $V_{EB} = -0.5Vdc$ , $I_C = 0$ , $f = 140kHz$ )		30.0	pF

### SWITCHING CHARACTERISTICS

$t_d$	Delay Time	( $V_{CC} = -3.0Vdc$ , $V_{BE} = -2.0Vdc$ )	15	ns
$t_r$	Rise Time	( $I_C = -150mA$ , $I_{B1} = -15mA$ )	20	ns
$t_s$	Storage Time	( $V_{CC} = -3.0Vdc$ , $I_C = -150mA$ )	225	ns
$t_f$	Fall Time	( $I_{B1} = I_{B2} = -15mA$ )	30	ns

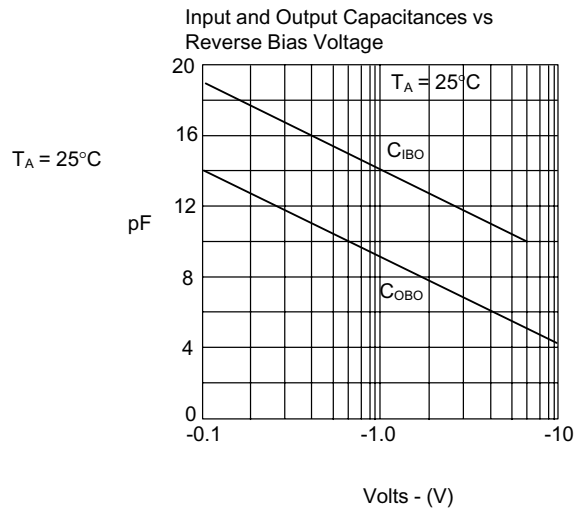
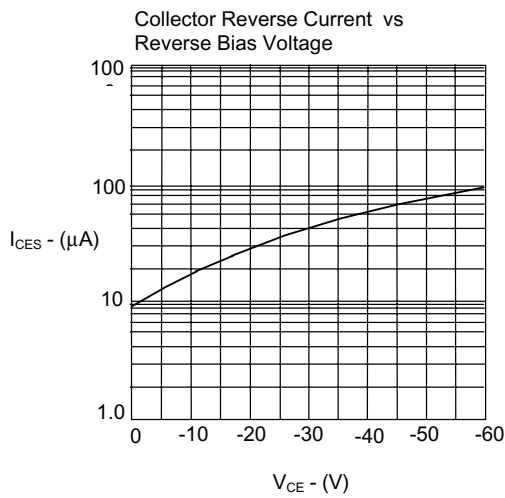
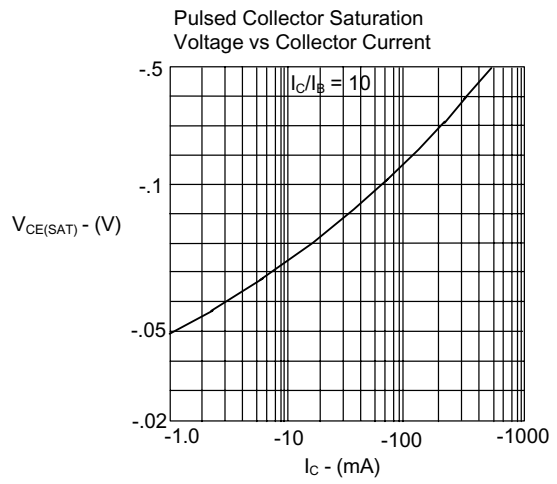
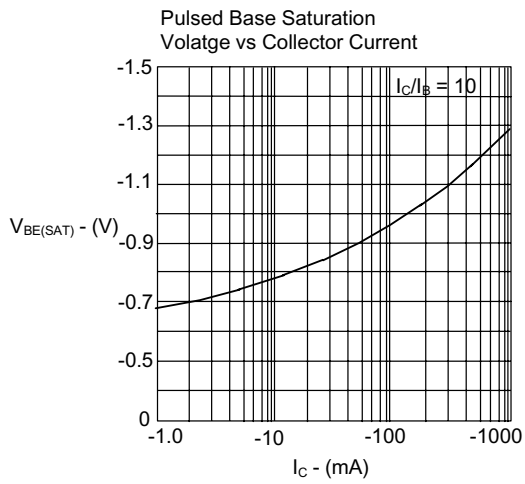
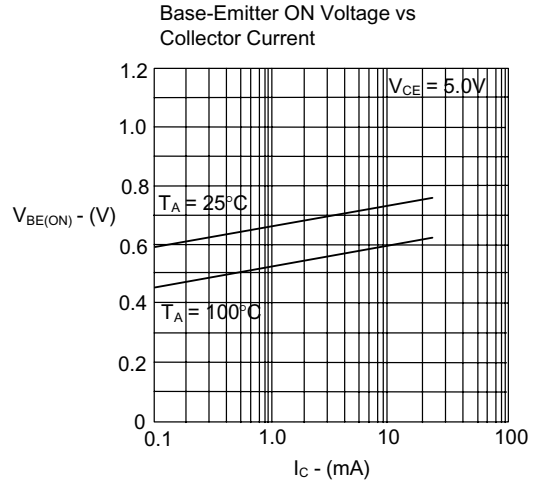
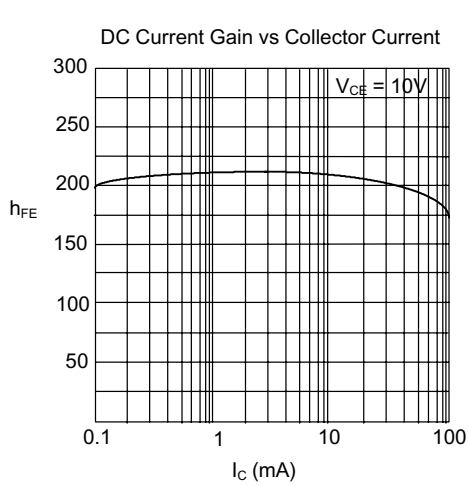
\*Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2.0\%$

### 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	.096	.104	2.44	2.64	

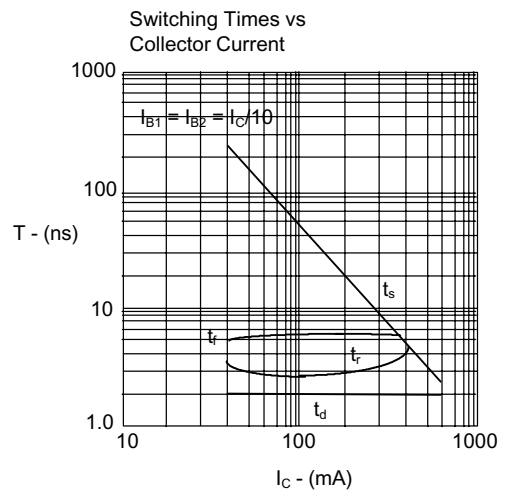
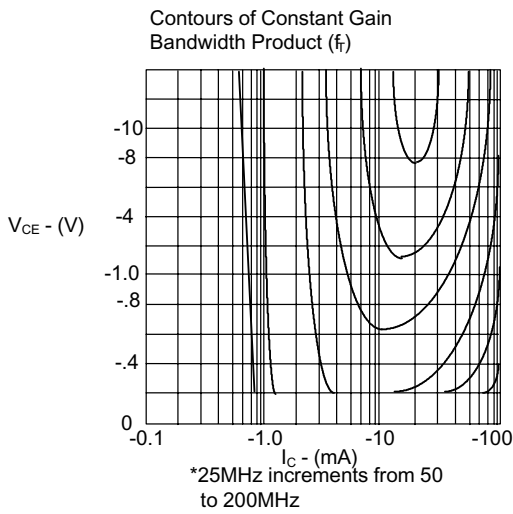
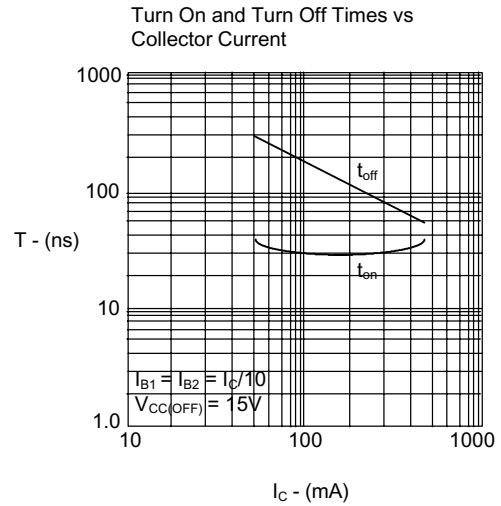
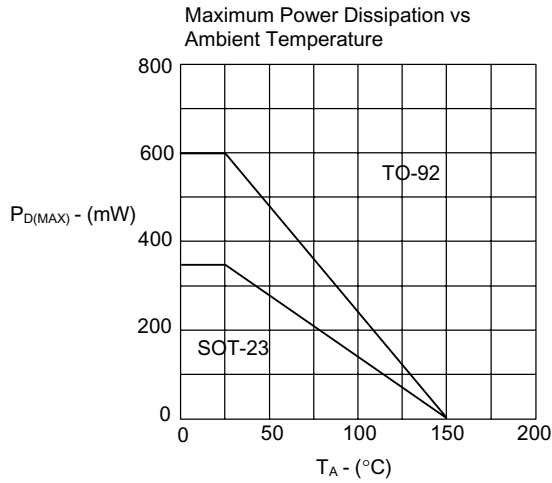
[www.mccsemi.com](http://www.mccsemi.com)



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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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