



Micro Commercial Components



Micro Commercial Components  
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# PN2222A

## 625mW NPN General Purpose Amplifier

### Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Marking: Type number
- Continuous Collector Current ( $I_C$ ) = 600mA.
- Operating and storage temperature range ( $T_J$  &  $T_{stg}$ ) from  $-55^\circ\text{C}$  ~  $+150^\circ\text{C}$
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

### Electrical Characteristics @ 25°C Unless Otherwise Specified

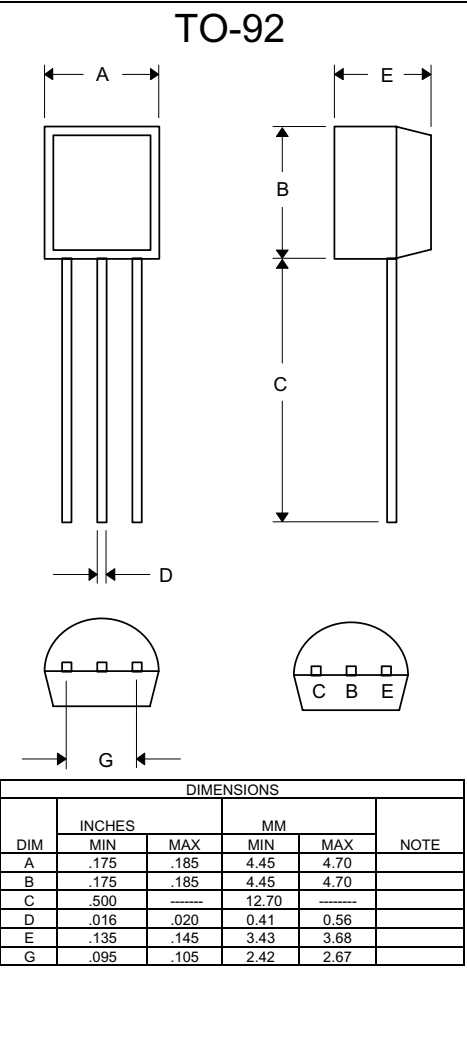
Symbol	Parameter	Min	Max	Units
<b>OFF CHARACTERISTICS</b>				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* ( $I_C=10\text{mAdc}$ , $I_B=0$ )	40		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C=10\mu\text{Adc}$ , $I_E=0$ )	75		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_E=10\mu\text{Adc}$ , $I_C=0$ )	6.0		Vdc
$I_{BL}$	Base Cutoff Current ( $V_{CE}=60\text{Vdc}$ , $V_{BE}=3.0\text{Vdc}$ )		20	nAdc
$I_{CEX}$	Collector Cutoff Current ( $V_{CE}=60\text{Vdc}$ , $V_{BE}=3.0\text{Vdc}$ )		10	nAdc

<b>ON CHARACTERISTICS</b>				
$h_{FE}$	DC Current Gain* ( $I_C=0.1\text{mAdc}$ , $V_{CE}=10\text{Vdc}$ ) ( $I_C=1.0\text{mAdc}$ , $V_{CE}=10\text{Vdc}$ ) ( $I_C=10\text{mAdc}$ , $V_{CE}=10\text{Vdc}$ ) ( $I_C=150\text{mAdc}$ , $V_{CE}=10\text{Vdc}$ ) ( $I_C=150\text{mAdc}$ , $V_{CE}=1.0\text{Vdc}$ ) ( $I_C=500\text{mAdc}$ , $V_{CE}=10\text{Vdc}$ )	35 50 75 100	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=150\text{mAdc}$ , $I_B=15\text{mAdc}$ ) ( $I_C=500\text{mAdc}$ , $I_B=50\text{mAdc}$ )		0.3 1.0	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ( $I_C=150\text{mAdc}$ , $I_B=15\text{mAdc}$ ) ( $I_C=500\text{mAdc}$ , $I_B=50\text{mAdc}$ )	0.6	1.2 2.0	Vdc

<b>SMALL-SIGNAL CHARACTERISTICS</b>				
$f_T$	Current Gain-Bandwidth Product ( $I_C=20\text{mAdc}$ , $V_{CE}=20\text{Vdc}$ , $f=100\text{MHz}$ )	300		MHz
$C_{obo}$	Output Capacitance ( $V_{CE}=10\text{Vdc}$ , $I_E=0$ , $f=100\text{kHz}$ )		8.0	pF
$C_{ibo}$	Input Capacitance ( $V_{BE}=0.5\text{Vdc}$ , $I_C=0$ , $f=100\text{kHz}$ )		25	pF
NF	Noise Figure ( $I_C=100\mu\text{Adc}$ , $V_{CE}=10\text{Vdc}$ , $R_S=1.0\text{k}\Omega$ , $f=1.0\text{kHz}$ )		4.0	dB

<b>SWITCHING CHARACTERISTICS</b>				
$t_d$	Delay Time	$(V_{CC}=30\text{Vdc}$ , $V_{BE}=0.5\text{Vdc}$ )	10	ns
$t_r$	Rise Time	$I_C=150\text{mAdc}$ , $I_{B1}=15\text{mAdc}$	25	ns
$t_s$	Storage Time	$(V_{CC}=30\text{Vdc}$ , $I_C=150\text{mAdc}$ )	225	ns
$t_f$	Fall Time	$I_{B1}=I_{B2}=15\text{mAdc}$	60	ns

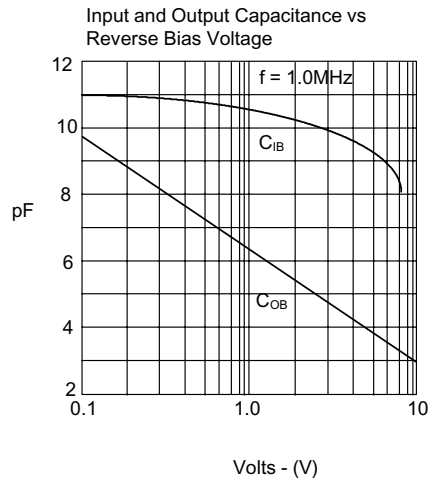
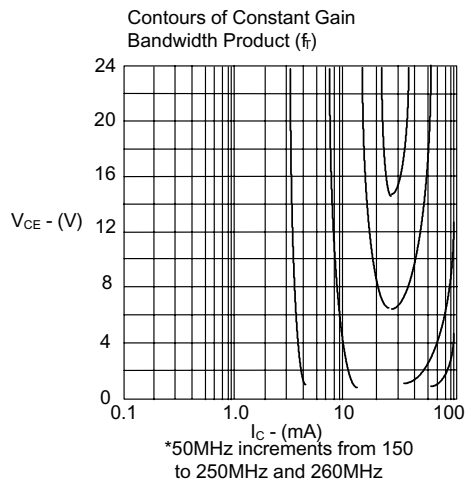
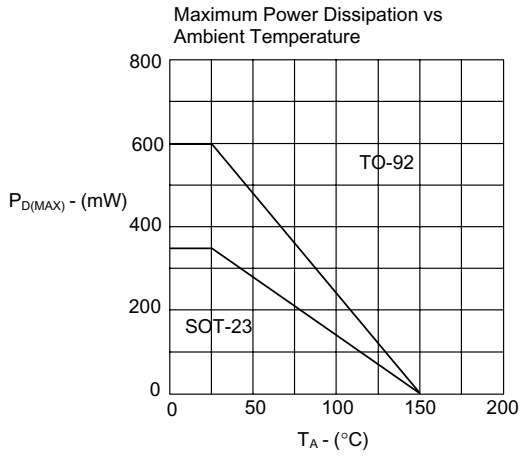
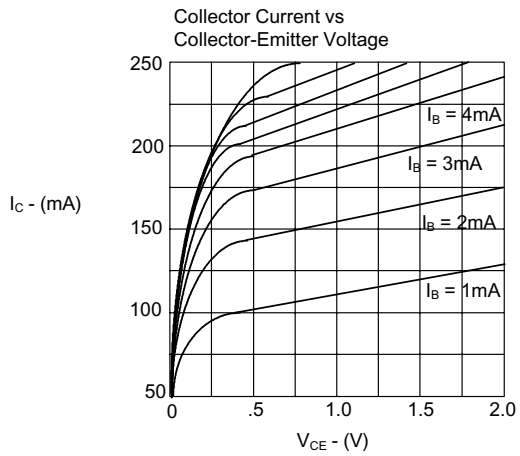
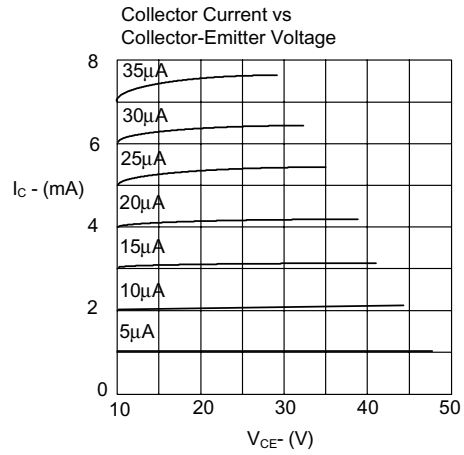
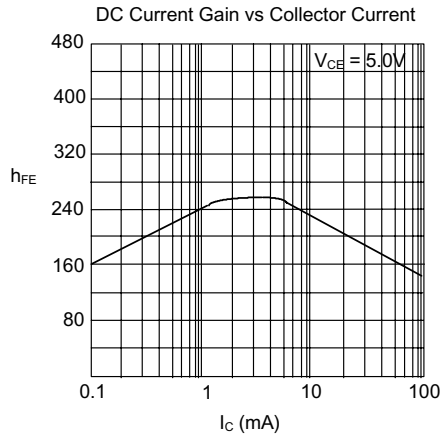
\*Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$



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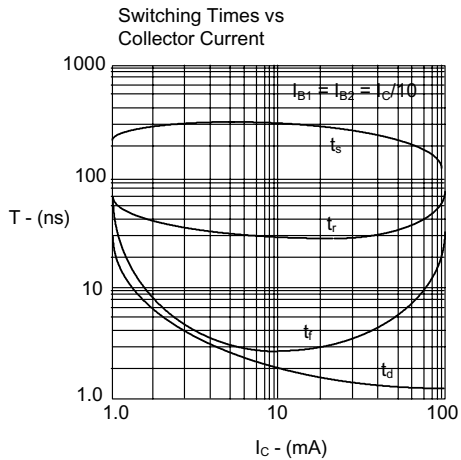
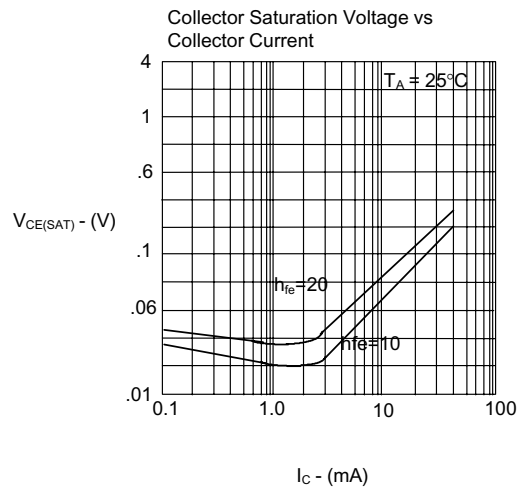
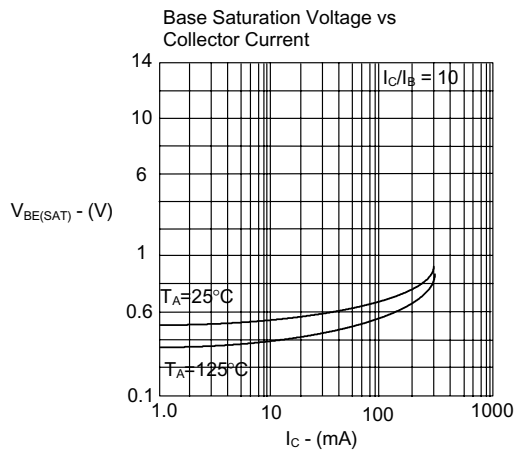
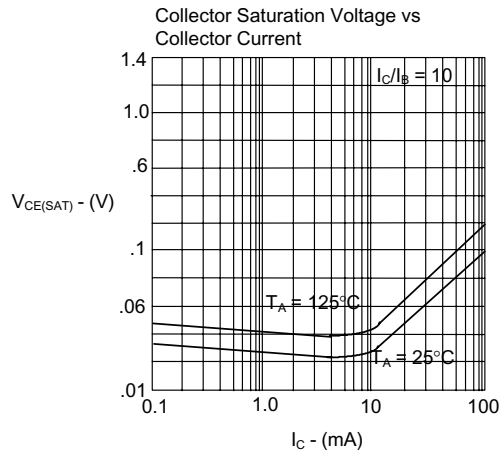
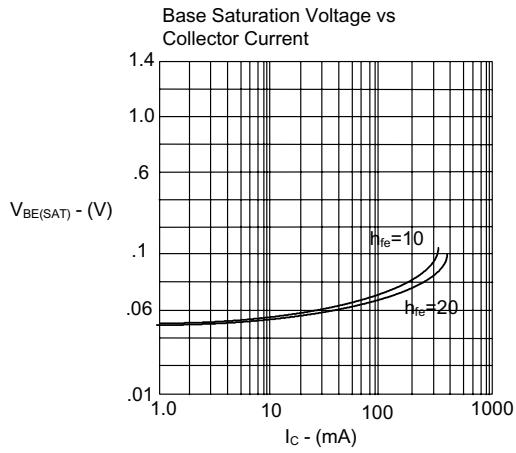


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[www.mccsemi.com](http://www.mccsemi.com)

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## Ordering Information

Device	Packing
(Part Number)-AP	Tape&Reel;2Kpcs/Box
(Part Number)-BP	Bulk;100K/Ctn

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