



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Micro Commercial Components



Micro Commercial Components
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MMBT2222A

NPN General Purpose Amplifier

Features

- Halogen free available upon request by adding suffix "-HF"
- Surface Mount SOT-23 Package
- Capable of 350mWatts of Power Dissipation, $I_C=600mA$
- Operating and Storage Junction Temperature: $-55^{\circ}C$ to $+150^{\circ}C$
- Thermal resistance, Junction to Ambient: $500^{\circ}C/W$
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: 1P
- Lead Free Finish/RoHS Compliant("P" Suffix designates Compliant)

Electrical Characteristics @ 25°C Unless Otherwise Specified

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

ON CHARACTERISTICS

β_{FE}	DC Current Gain* ($I_C=0.1mA$, $V_{CE}=10Vdc$) ($I_C=1.0mA$, $V_{CE}=10Vdc$) ($I_C=10mA$, $V_{CE}=10Vdc$) ($I_C=150mA$, $V_{CE}=10Vdc$) ($I_C=150mA$, $V_{CE}=1.0Vdc$) ($I_C=500mA$, $V_{CE}=10Vdc$)	35	300	
		50		
		75		
		100		
		50		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=150mA$, $I_B=15mA$) ($I_C=500mA$, $I_B=50mA$)	0.3	Vdc	
		1.0		
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=150mA$, $I_B=15mA$) ($I_C=500mA$, $I_B=50mA$)	0.6	Vdc	
		1.2		
		2.0		

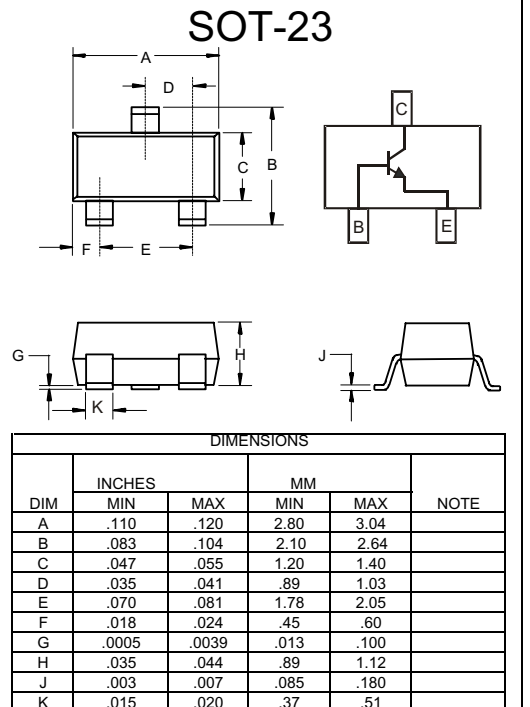
SMALL-SIGNAL CHARACTERISTICS

f_T	Current Gain-Bandwidth Product ($I_C=20mA$, $V_{CE}=20Vdc$, $f=100MHz$)	300	MHz
C_{obo}	Output Capacitance ($V_{CB}=10Vdc$, $I_E=0$, $f=1.0MHz$)	8.0	pF
C_{ibo}	Input Capacitance ($V_{BE}=0.5Vdc$, $I_C=0$, $f=1.0MHz$)	25	pF
NF	Noise Figure ($I_C=100\mu A$, $V_{CE}=10Vdc$, $R_S=1.0k\Omega$, $f=1.0kHz$)	4.0	dB

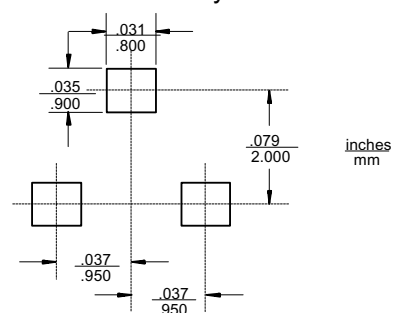
SWITCHING CHARACTERISTICS

t_d	Delay Time	($V_{CC}=30Vdc$, $V_{BE}=0.5Vdc$)	10	ns
t_r	Rise Time	($I_C=150mA$, $I_{B1}=15mA$)	25	ns
t_s	Storage Time	($V_{CC}=30Vdc$, $I_C=150mA$)	225	ns
t_f	Fall Time	($I_{B1}=I_{B2}=15mA$)	60	ns

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



Suggested Solder Pad Layout



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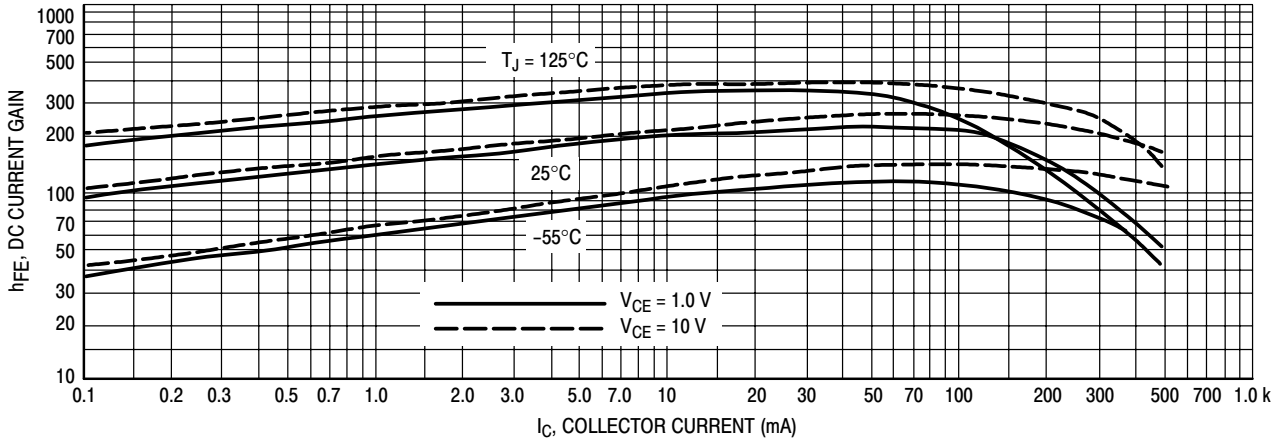


Figure 1. DC Current Gain

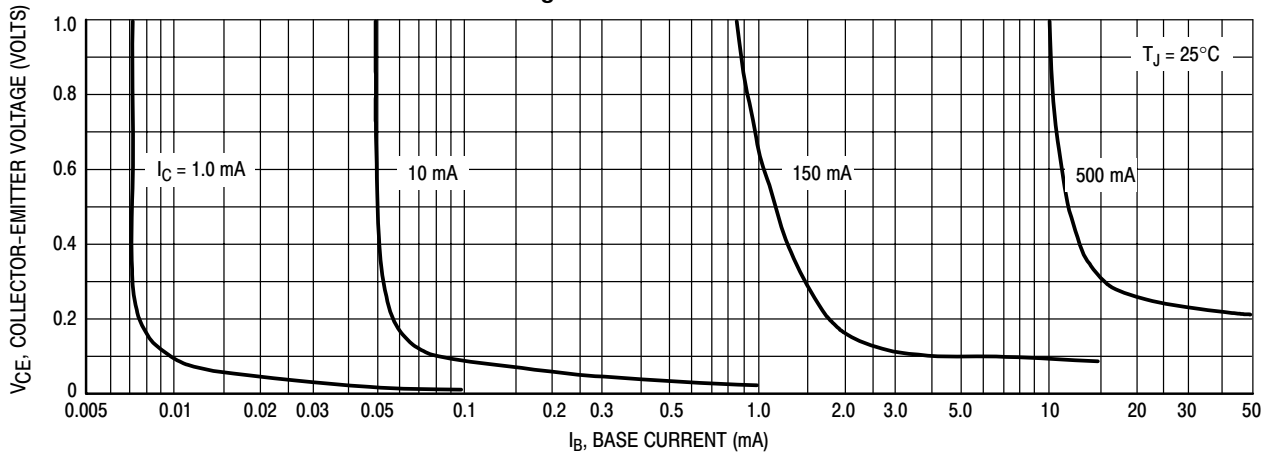


Figure 2. Collector Saturation Region

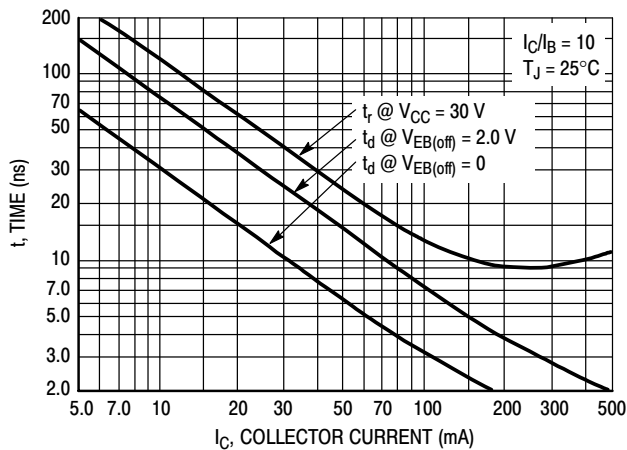


Figure 3. Turn-On Time

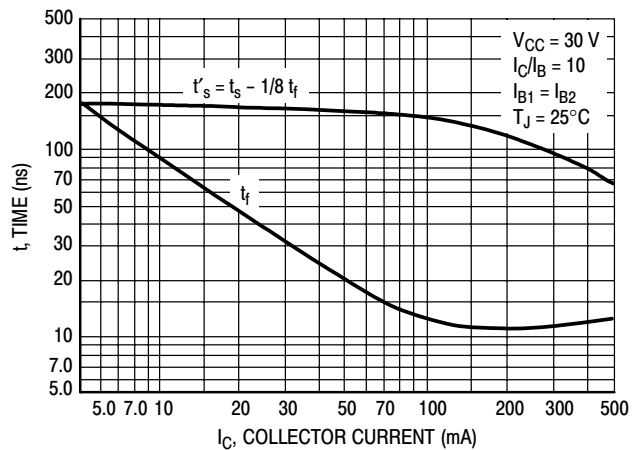
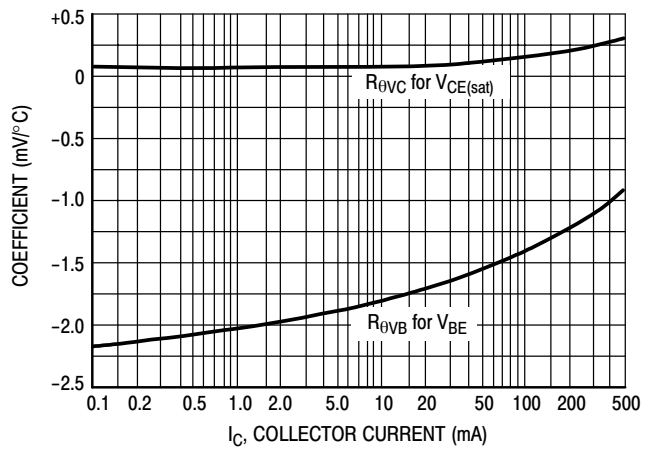
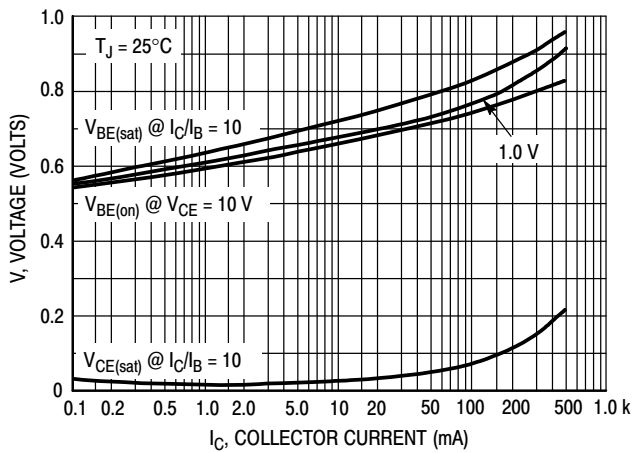
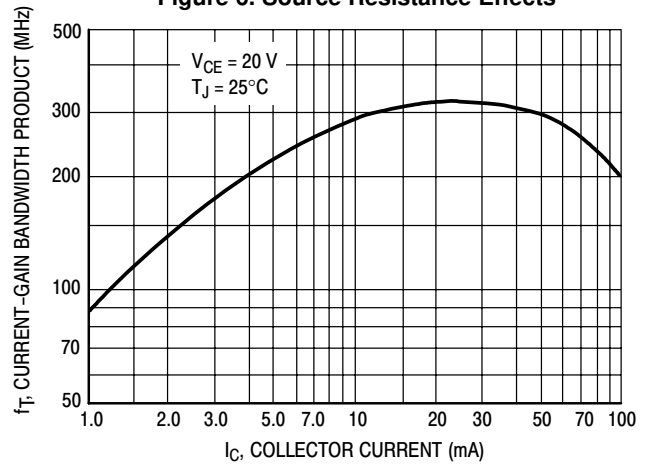
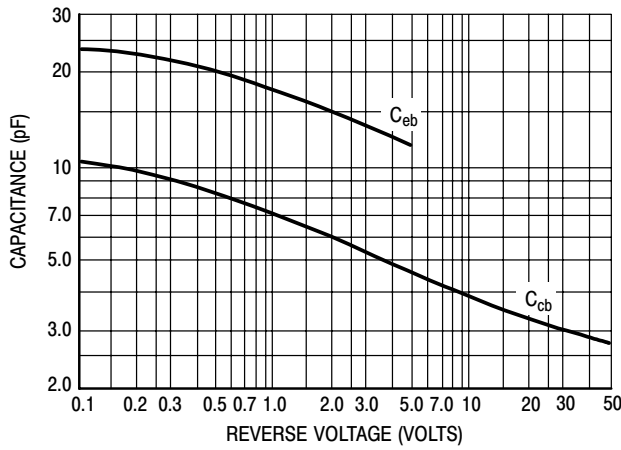
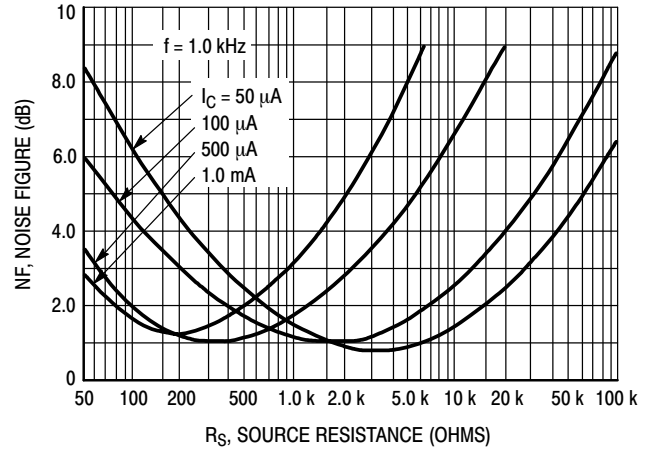
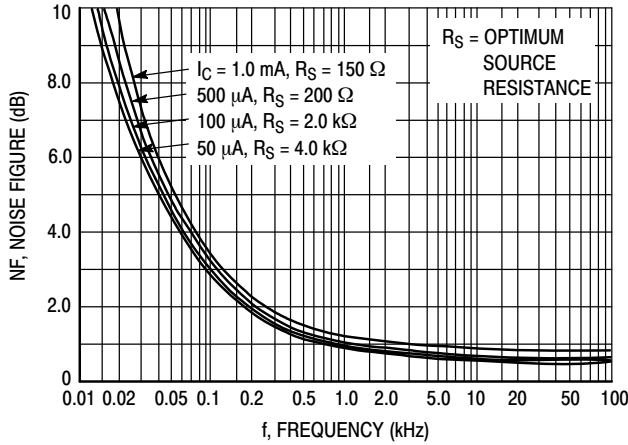


Figure 4. Turn-Off Time

MMBT2222A



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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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