



MMBT3906

PNP General Purpose Amplifier

Features

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Capable of 300mWatts of Power Dissipation
- Marking:2A

Maximum Ratings

Symbol	Rating	Rating	Unit
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{CBO}	Collector-Base Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-5.0	V
I_C	Collector Current, Continuous	-0.2	A
P_D	Power Dissipation	0.3	W
T_J	Operating Junction Temperature	-55 to +150	$^{\circ}C$
T_{STG}	Storage Temperature	-55 to +150	$^{\circ}C$

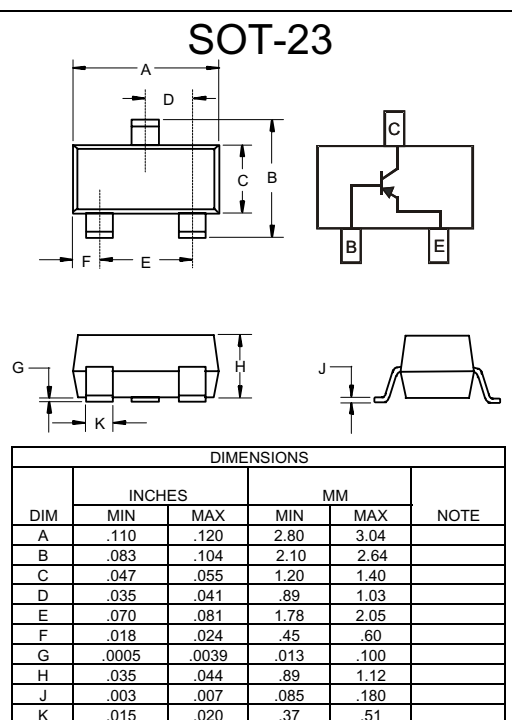
Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
$V_{(BR)CEO}$	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_{CBO}	Collector cut-off Current ($V_{CB}=-40Vdc$, $I_E=0$)		-0.1	μA
I_{CEX}	Collector Cut-off Current ($V_{CE}=-30Vdc$, $V_{BE}=-3.0Vdc$)		-50	nA
I_{EBO}	Emitter cut-off Current ($V_{EB}=-5Vdc$, $I_C=0$)		-0.1	μA
h_{FE}	DC Current Gain* ($I_C=-10mA$, $V_{CE}=-1.0Vdc$) ($I_C=-50mA$, $V_{CE}=-1.0Vdc$) ($I_C=-100mA$, $V_{CE}=-1.0Vdc$)	100 60 30	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=-10mA$, $I_B=-1.0mA$) ($I_C=-50mA$, $I_B=-5.0mA$)		-0.25 -0.4	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=-10mA$, $I_B=-1.0mA$) ($I_C=-50mA$, $I_B=-5.0mA$)	-0.65	-0.85 -0.95	Vdc
C_{obo}	Output Capacitance ($V_{CB}=-5.0Vdc$, $f=1.0MHz$, $I_E=0$)		4.5	pF
C_{ibo}	Input Capacitance ($V_{EB}=-0.5Vdc$, $f=1.0MHz$, $I_C=0$)		10	pF
f_T	Current Gain-Bandwidth Product ($I_C=-10mA$, $V_{CE}=-20Vdc$, $f=100MHz$)	250		MHz
NF	Noise Figure ($V_{CE}=-5.0V$, $f=1.0kHz$, $I_C=-100\mu A$, $R_s=1.0K$)		4.0	dB

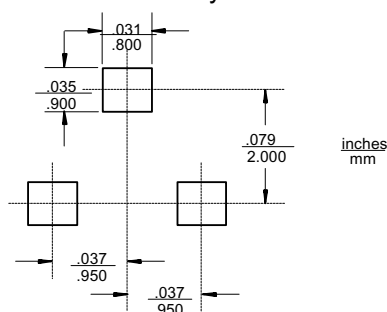
SWITCHING CHARACTERISTICS

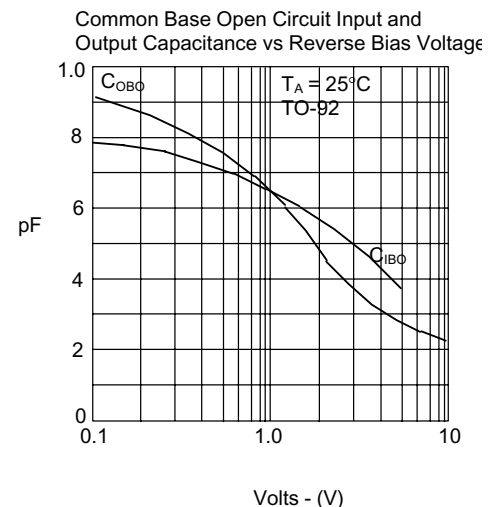
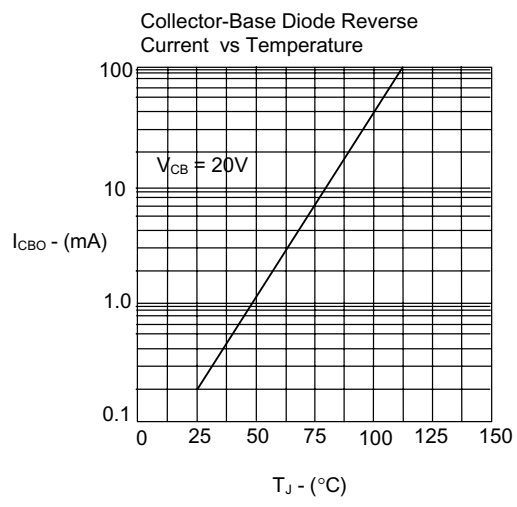
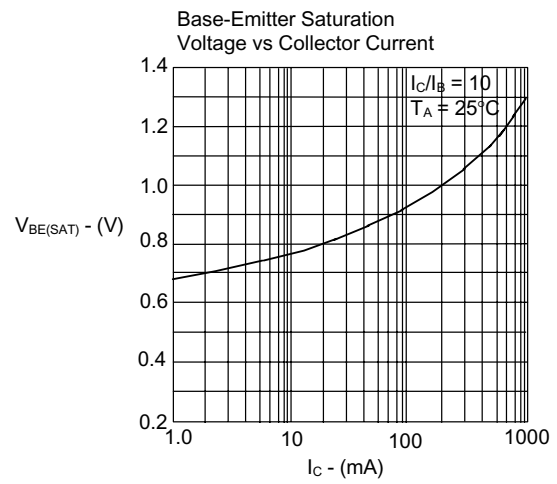
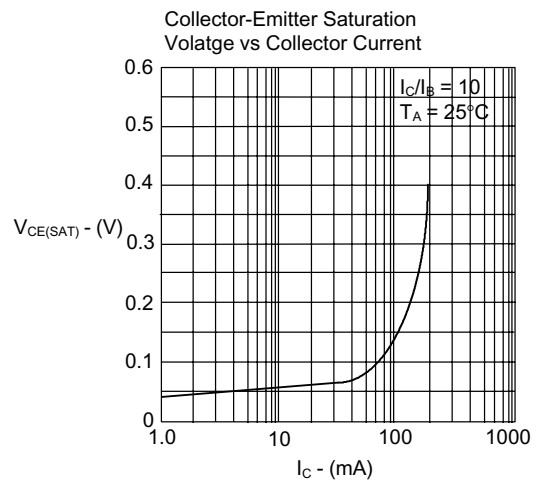
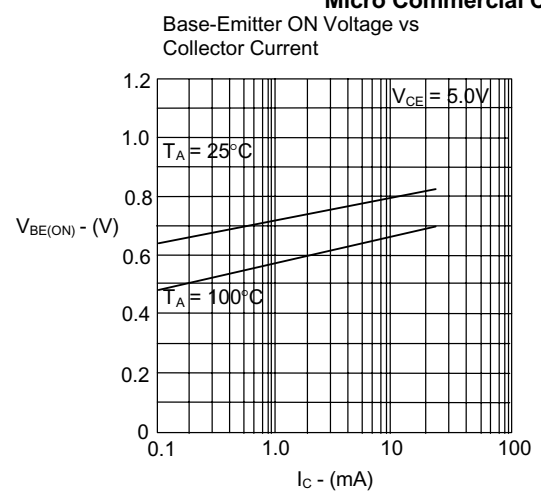
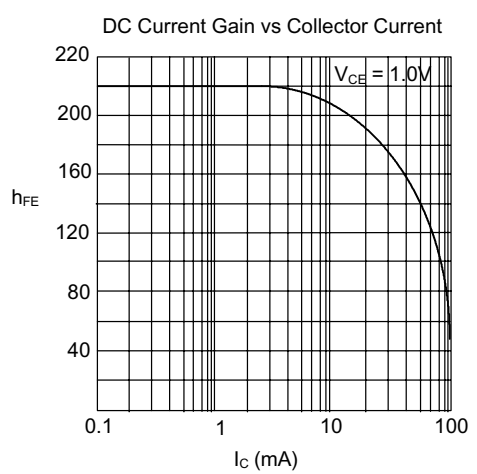
t_d	Delay Time	($V_{CC}=-3.0Vdc$, $V_{BE}=-0.5Vdc$)	35	ns
t_r	Rise Time	($I_C=-10mA$, $I_{B1}=-1.0mA$)	35	ns
t_s	Storage Time	($V_{CC}=-3.0Vdc$, $I_C=-10mA$)	225	ns
t_f	Fall Time	($I_{B1}=I_{B2}=-1.0mA$)	75	ns

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

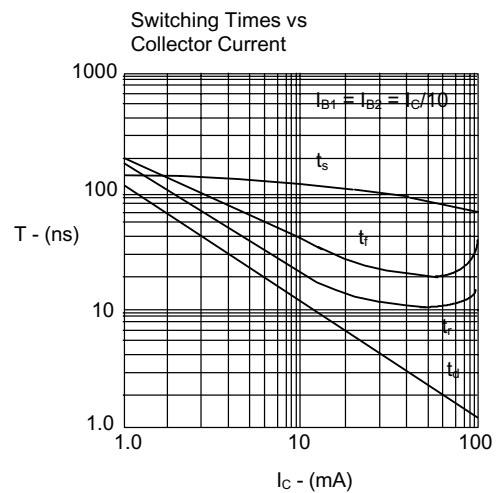
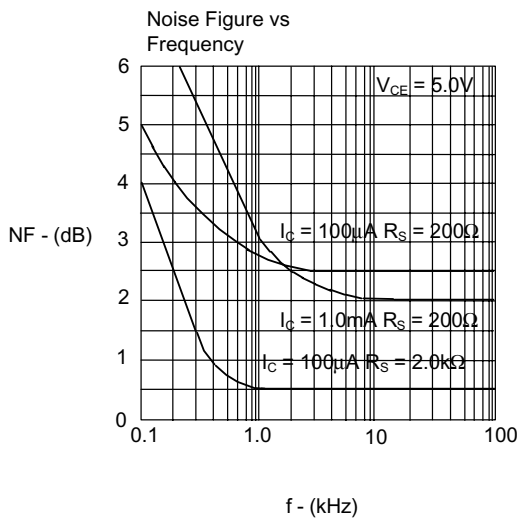
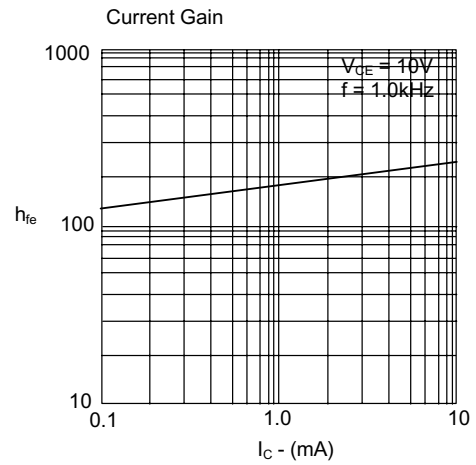
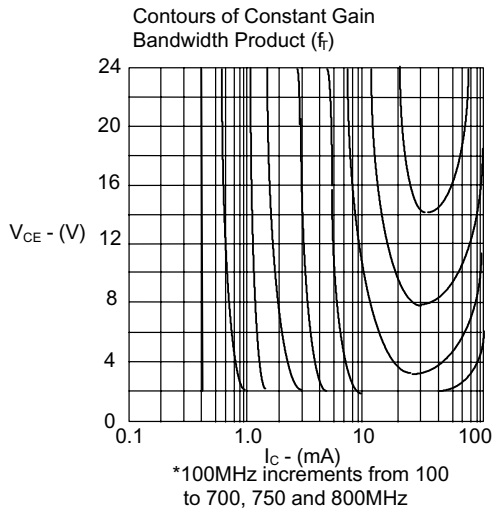
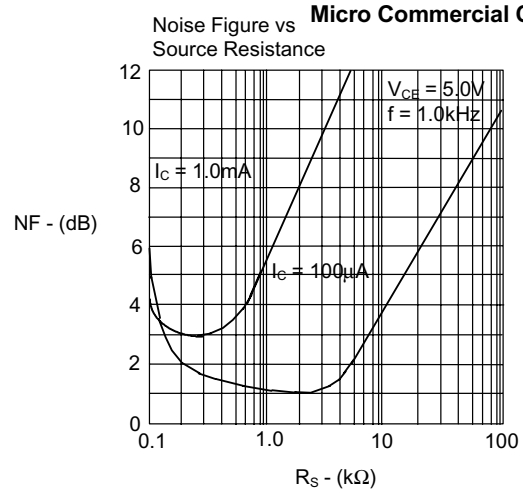
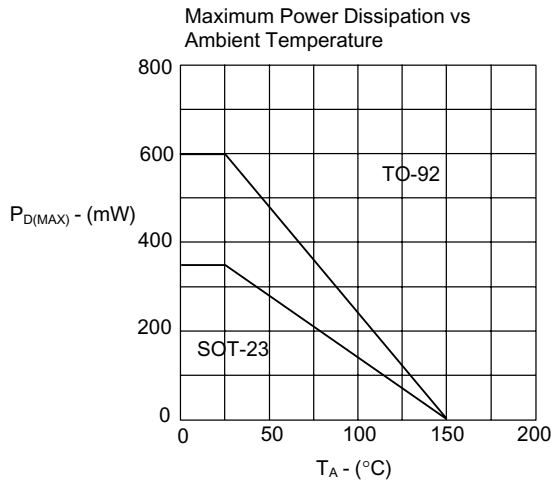


Suggested Solder Pad Layout

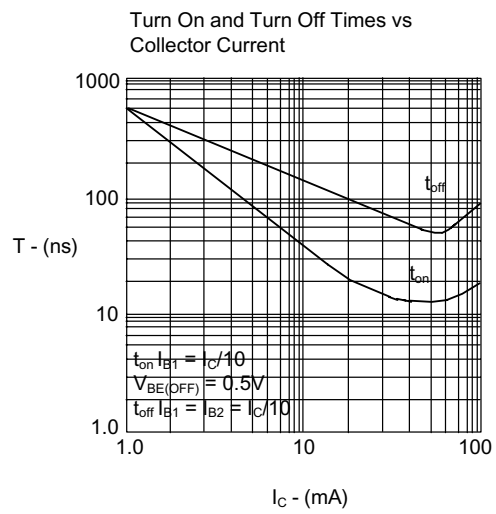
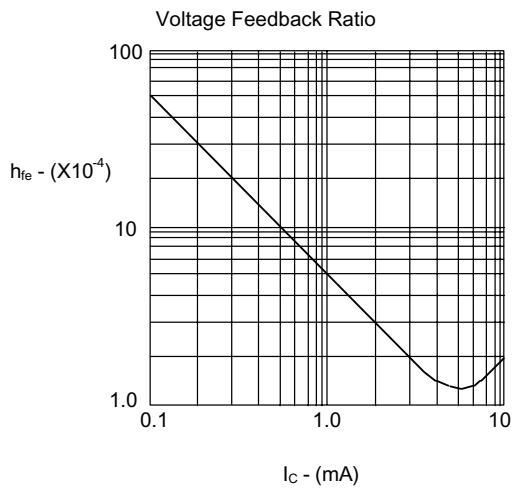
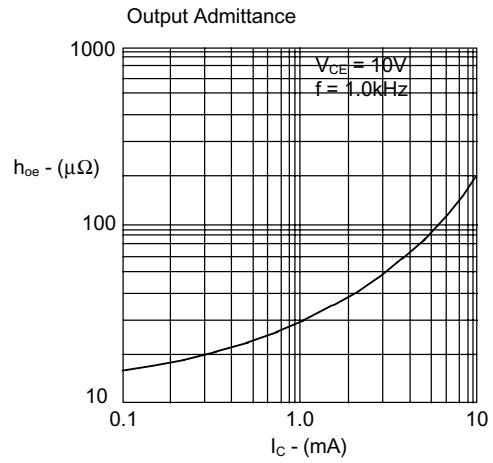
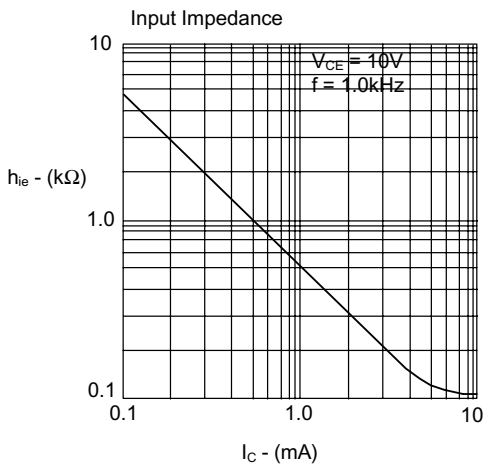




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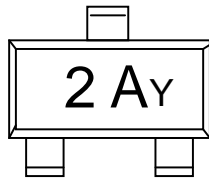
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Marking Information



2A = Product Type Marking Code
Y=Date Code Marking

Date code Key (2 years a cycle)

Year	2011											
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	J	O	L	C	K	B	P	D	M	E	G	F

Year	2012											
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	W	N	Y	T	R	H	A	I	U	X	Z	S



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Ordering Information :

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

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

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