Micro Commercial Components

Micro Commercial Components
20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

MMBT4403

PNP General Purpose Amplifier

Features

- Operating and Storage Junction Temperatures: -55℃ to 150℃
- Capable of 350mWatts of Power Dissipation
- Surface Mount SOT-23 Package
- Ic=-600mA
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisure Sensitivity Level 1
- Marking:2T/M3A
- Halogen free available upon request by adding suffix "-HF"

Electrical Characteristics @ 25°C Unless Otherwise Specified

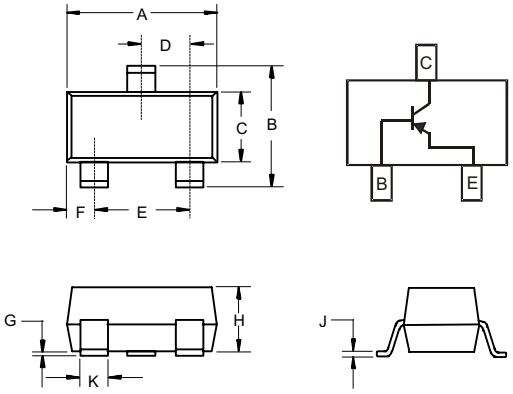
Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage(NOTE 1) (I_C=1.0mAdc, I_B=0)	40		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_C=100μAdc, I_E=0)	40		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I_E=100μAdc, I_C=0)	5.0		Vdc
I_{BL}	Base Cutoff Current (V_{CE}=30Vdc, V_{BE}=3.0Vdc)		0.1	μAdc
I_{CEX}	Collector Cutoff Current (V_{CE}=30Vdc, V_{BE}=3.0Vdc)		0.1	μAdc
ON CHARACTERISTICS				
h_{FE}	DC Current Gain(NOTE 1) (I_C=0.1mAdc, V_{CE}=1.0Vdc) (I_C=1.0mAdc, V_{CE}=1.0Vdc) (I_C=10mAdc, V_{CE}=1.0Vdc) (I_C=150mAdc, V_{CE}=2.0Vdc) (I_C=500mAdc, V_{CE}=2.0Vdc)	 30 60 100 100 20	 300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (I_C=150mAdc, I_B=15mAdc) (I_C=500mAdc, I_B=50mAdc)		 0.4 0.75	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (I_C=150mAdc, I_B=15mAdc) (I_C=500mAdc, I_B=50mAdc)	 0.75	 0.95 1.30	Vdc
SMALL-SIGNAL CHARACTERISTICS				
f_T	Current Gain-Bandwidth Product (I_C=20mAdc, V_{CE}=10Vdc, f=100MHz)	200		MHz
C_{cb}	Output Capacitance (V_{CB}=10Vdc, I_E=0, f=1.0MHz)		8.5	pF
C_{eb}	Input Capacitance (V_{EB}=0.5Vdc, I_C=0, f=1.0MHz)		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=150mAdc, I_{B1}=15mAdc)	20	ns
t_s	Storage Time	(V_{CC}=3.0Vdc, I_C=150mAdc	225	ns
t_f	Fall Time	I_{B1}=I_{B2}=15mAdc)	30	ns

THERMAL CHARACTERISTICS			
R_{thJA}	Thermal Resistance, Junction to Ambient (NOTE 2)	357	°C/W

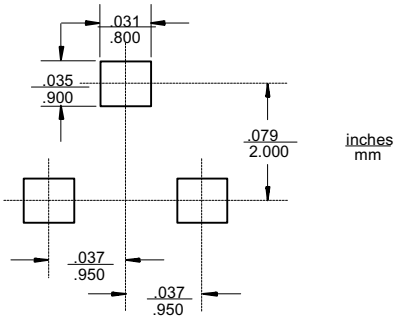
NOTE: 1. Pulse Width ≤ 300μs, Duty Cycle≤ 2.0%
2. For the device mounted on 15mm x 15mm x 1.6mm FR4 PCB with high coverage of single sided 1oz copper, in still air conditions.

SOT-23

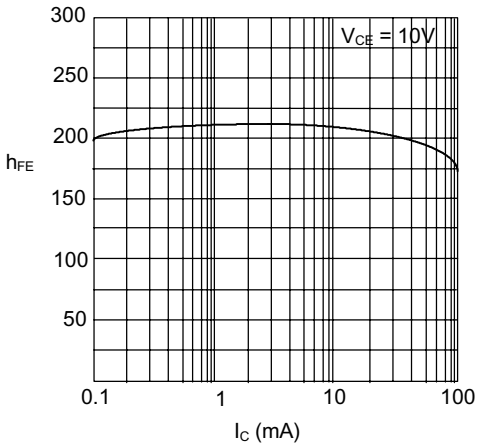


DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.110	.120	2.80	3.04	
B	.083	.104	2.10	2.64	
C	.047	.055	1.20	1.40	
D	.035	.041	.89	1.03	
E	.070	.081	1.78	2.05	
F	.018	.024	.45	.60	
G	.0005	.0039	.013	.100	
H	.035	.044	.89	1.12	
J	.003	.007	.085	.180	
K	.015	.020	.37	.51	

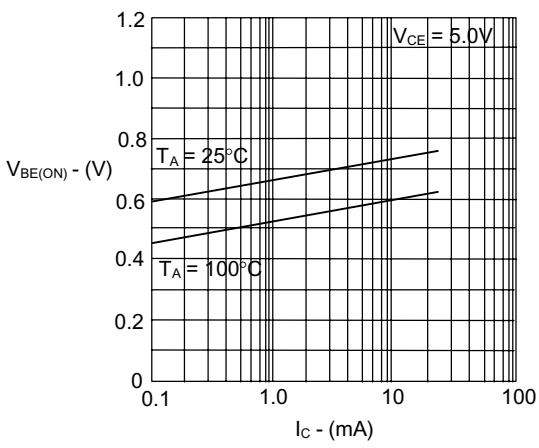
Suggested Solder Pad Layout



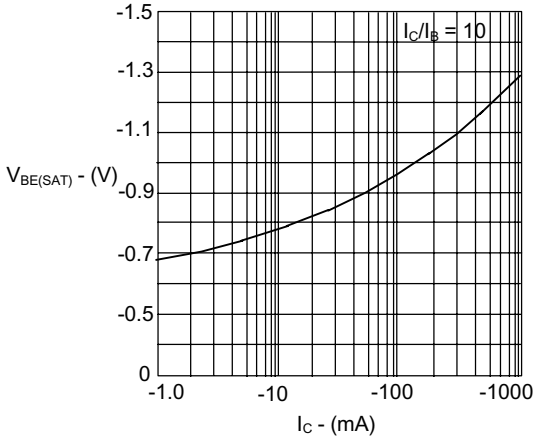
DC Current Gain vs Collector Current



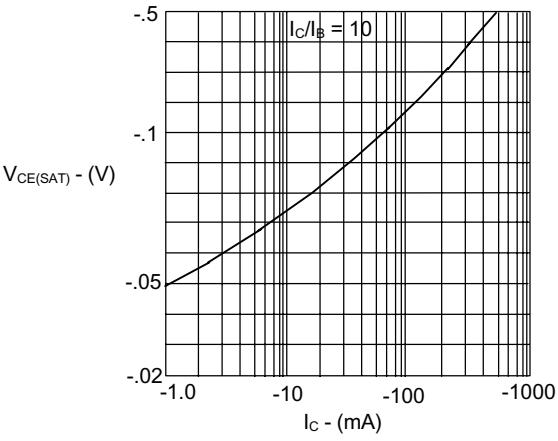
Base-Emitter ON Voltage vs Collector Current



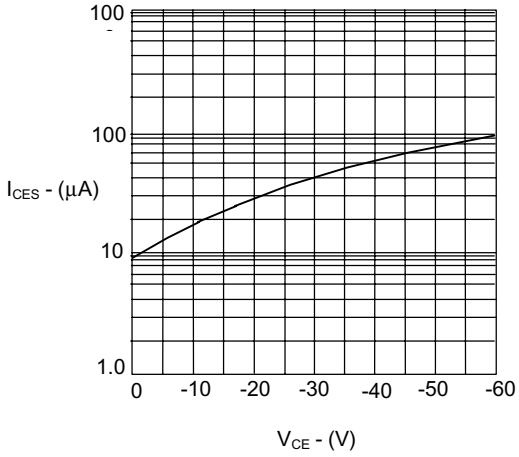
Pulsed Base Saturation Volatge vs Collector Current



Pulsed Collector Saturation Voltage vs Collector Current

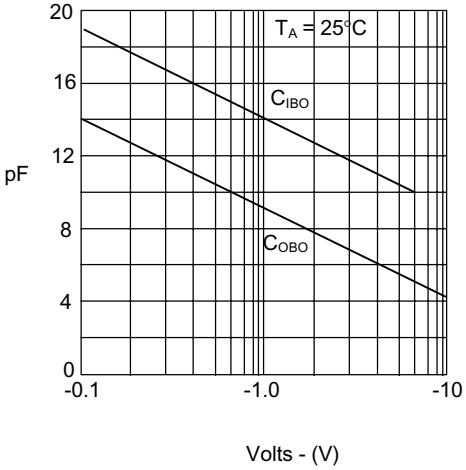


Collector Reverse Current vs Reverse Bias Voltage

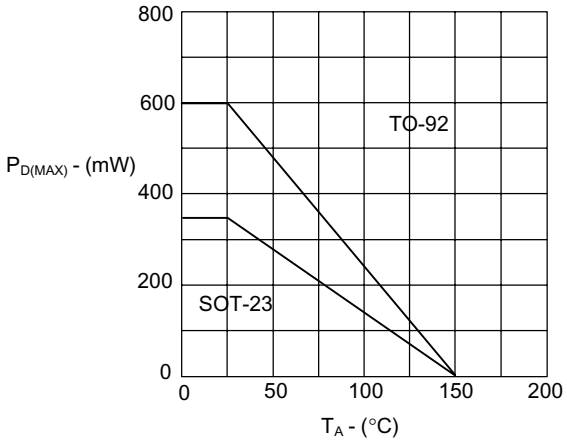


Input and Output Capacitances vs Reverse Bias Voltage

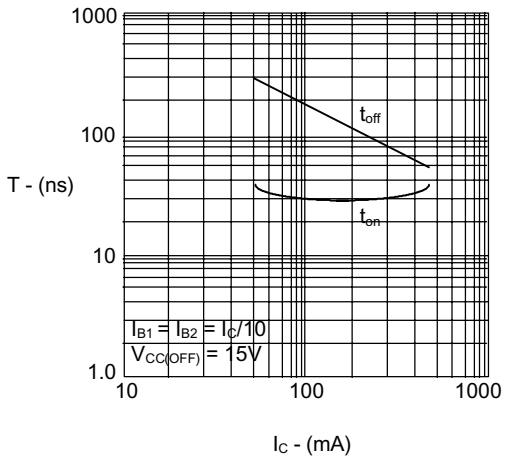
TA = 25°C



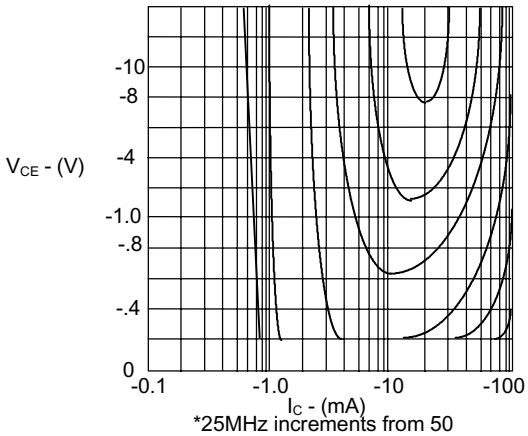
Maximum Power Dissipation vs Ambient Temperature



Turn On and Turn Off Times vs Collector Current

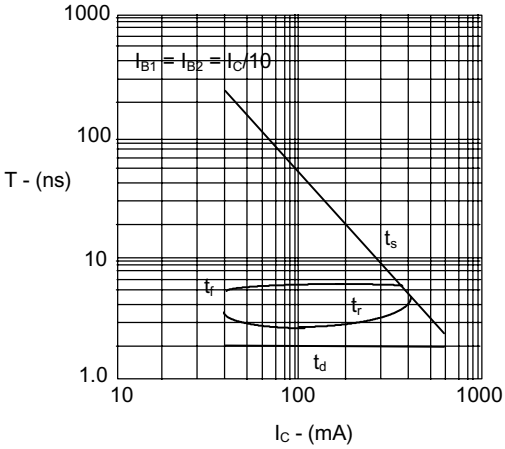


Contours of Constant Gain Bandwidth Product (f_T)



*25MHz increments from 50 to 200MHz

Switching Times vs Collector Current



Ordering Information :

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

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

IMPORTANT NOTICE
Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . ***Micro Commercial Components Corp .*** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold ***Micro Commercial Components Corp .*** and all the companies whose products are represented on our website, harmless against all damages.
LIFE SUPPORT
MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.
CUSTOMER AWARENESS
Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.