



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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MMBT3904T

150mW NPN 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)
- Operating and Storage Junction Temperatures: -55°C to 150°C
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Collector Current: 0.2A
- Marking: 1N

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* ($I_C=1.0mA$, $I_B=0$)	40		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=10\mu A$, $I_E=0$)	60		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=10\mu A$, $I_C=0$)	6.0		Vdc
I_{CBO}	Collector Cut-off Current ($V_{CB}=30V$, $I_E=0$)		50	nAdc
I_{EBO}	Emitter Cut-off Current ($V_{EB}=5V$, $I_C=0$)		50	nAdc

ON CHARACTERISTICS

h_{FE}	DC Current Gain* ($I_C=0.1mA$, $V_{CE}=1.0V$) ($I_C=1.0mA$, $V_{CE}=1.0V$) ($I_C=10mA$, $V_{CE}=1.0V$) ($I_C=50mA$, $V_{CE}=1.0V$) ($I_C=100mA$, $V_{CE}=1.0V$)	40 70 100 60 30	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=10mA$, $I_B=1.0mA$) ($I_C=50mA$, $I_B=5.0mA$)		0.2 0.3	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

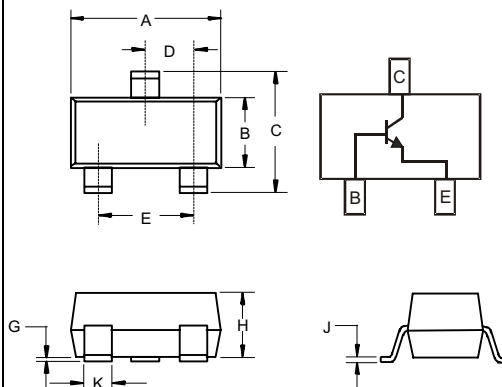
SMALL-SIGNAL CHARACTERISTICS

f_T	Current Gain-Bandwidth Product ($I_C=10mA$, $V_{CE}=20V$, $f=100MHz$)	300		MHz
C_{obo}	Output Capacitance ($V_{CB}=5.0V$, $I_E=0$, $f=1.0MHz$)		4.0	pF
NF	Noise Figure ($I_C=100\mu A$, $V_{CE}=5.0V$, $R_S=1.0k\Omega$, $f=1MHz$)		5.0	dB

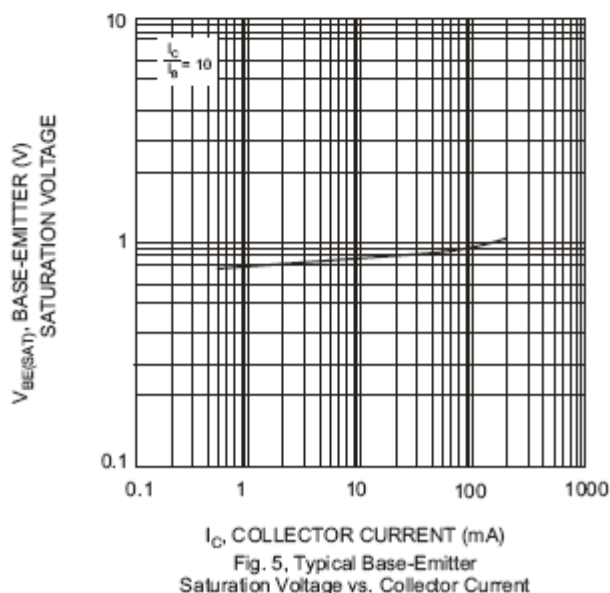
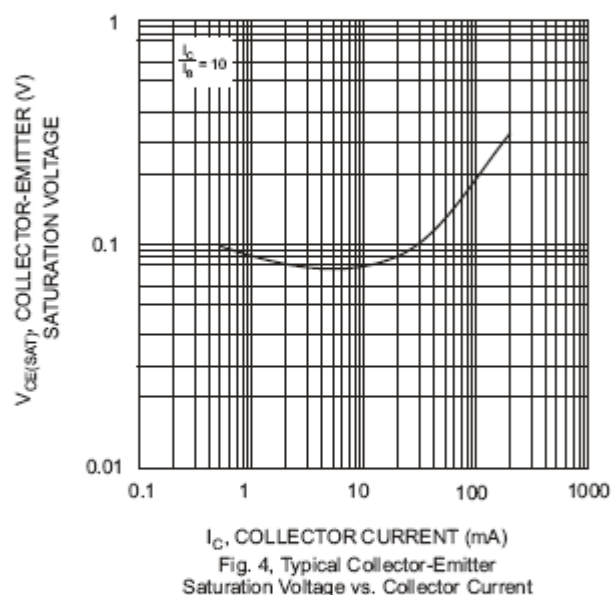
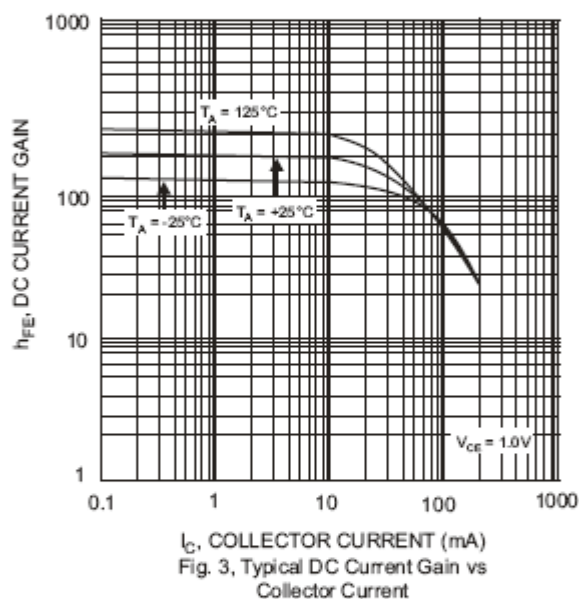
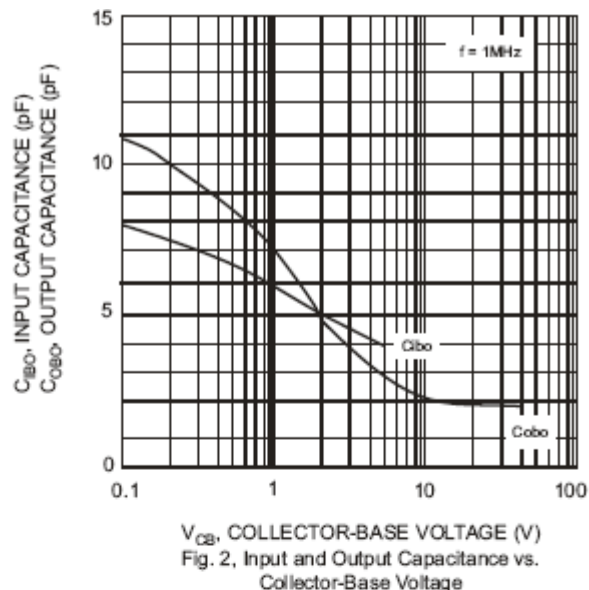
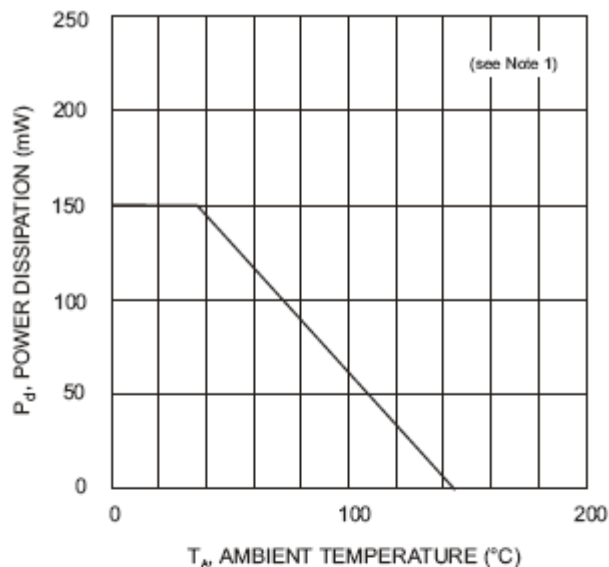
SWITCHING CHARACTERISTICS

t_d	Delay Time	($V_{CC}=3.0V$, $V_{BE}=0.5V$, $I_C=10mA$, $I_{B1}=1.0mA$)	35	ns
t_r	Rise Time	($V_{CC}=3.0V$, $I_C=10mA$)	35	ns
t_s	Storage Time	($V_{CC}=3.0V$, $I_C=10mA$, $I_{B1}=I_{B2}=1.0mA$)	200	ns
t_f	Fall Time		50	ns

SOT-523



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.059	.067	1.50	1.70	
B	.030	.033	0.75	0.85	
C	.057	.069	1.45	1.75	
D	.020 Nominal		0.50 Nominal		
E	.035	.043	0.90	1.10	
G	.000	.004	.000	.100	
H	.028	.031	.70	0.80	
J	.004	.008	.100	.200	
K	.010	.014	.25	.35	



Ordering Information :

Device	Packing
Part Number-TP	Tape & Reel; 5 Kpcs / Reel

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

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