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[Micro Commercial Components \(MCC\)](#)
[MMBT2222AT-TP](#)

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sales@integrated-circuit.com

M.C.C.

Micro Commercial Components



Micro Commercial Components
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MMBT2222AT

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)
- Capable of 150mWatts of Power Dissipation
- Operating and Storage Junction Temperatures -55°C to 150°C
- Collector Current: 0.6A
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: 1P

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
OFF CHARACTERISTICS				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* ($I_C=10\text{mA}$, $I_B=0$)	40		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=10\mu\text{A}$, $I_E=0$)	75		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=10\mu\text{A}$, $I_C=0$)	6.0		Vdc
I_{CBO}	Collector Cut-off Current ($V_{CB}=70\text{Vdc}$, $I_E=0$)		100	nAdc
I_{CEO}	Collector Cutoff Current ($V_{CE}=35\text{Vdc}$, $I_B=0$)		100	nAdc
I_{EBO}	Emitter Cut-off Current ($V_{EB}=3\text{Vdc}$, $I_C=0$)		100	nAdc

ON CHARACTERISTICS

h_{FE}	DC Current Gain* ($I_C=0.1\text{mA}$, $V_{CE}=10\text{Vdc}$) ($I_C=1.0\text{mA}$, $V_{CE}=10\text{Vdc}$) ($I_C=10\text{mA}$, $V_{CE}=10\text{Vdc}$) ($I_C=150\text{mA}$, $V_{CE}=10\text{Vdc}$) ($I_C=150\text{mA}$, $V_{CE}=10\text{Vdc}$) ($I_C=500\text{mA}$, $V_{CE}=10\text{Vdc}$)	35 50 75 100 50 40	300	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=150\text{mA}$, $I_B=15\text{mA}$) ($I_C=500\text{mA}$, $I_B=50\text{mA}$)		0.3 1.0	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=150\text{mA}$, $I_B=15\text{mA}$) ($I_C=500\text{mA}$, $I_B=50\text{mA}$)		1.2 2.0	Vdc

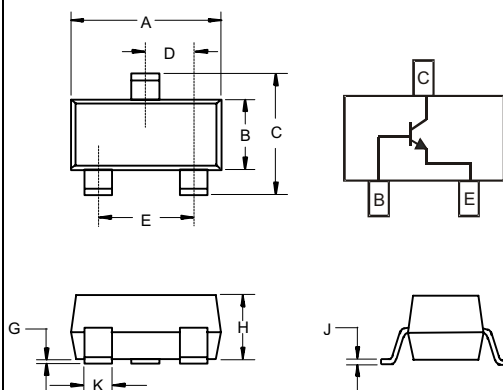
SMALL-SIGNAL CHARACTERISTICS

f_T	Current Gain-Bandwidth Product ($I_C=20\text{mA}$, $V_{CE}=20\text{Vdc}$, $f=100\text{MHz}$)	300		MHz
C_{obo}	Output Capacitance ($V_{CB}=10\text{Vdc}$, $I_E=0$, $f=100\text{kHz}$)		8.0	pF

SWITCHING CHARACTERISTICS

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

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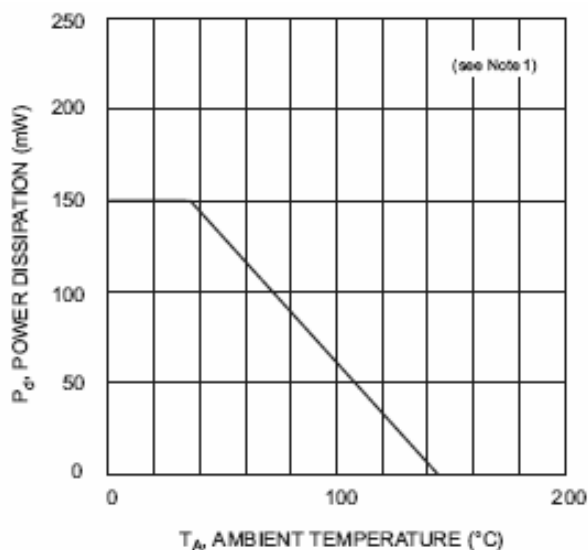


Fig. 1, Power Derating Curve

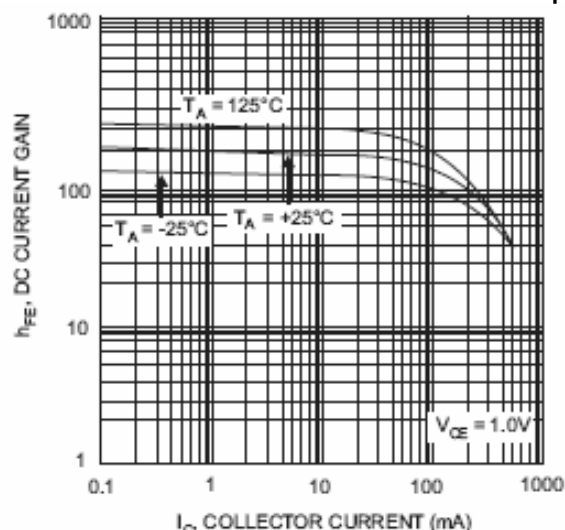


Fig. 2 Typical DC Current Gain vs. Collector Current

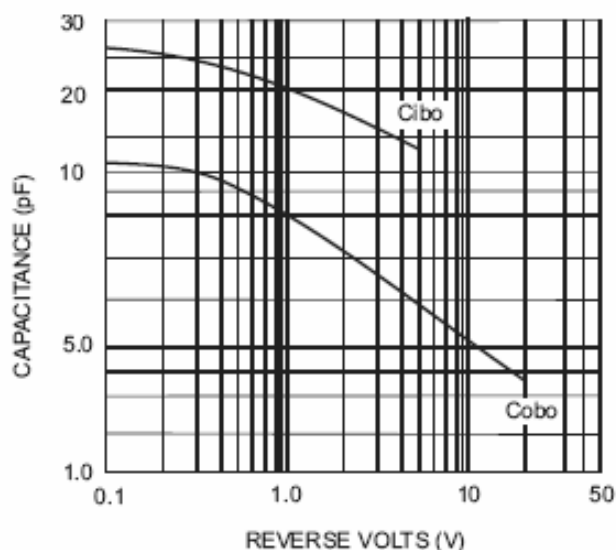


Fig. 3 Typical Capacitance

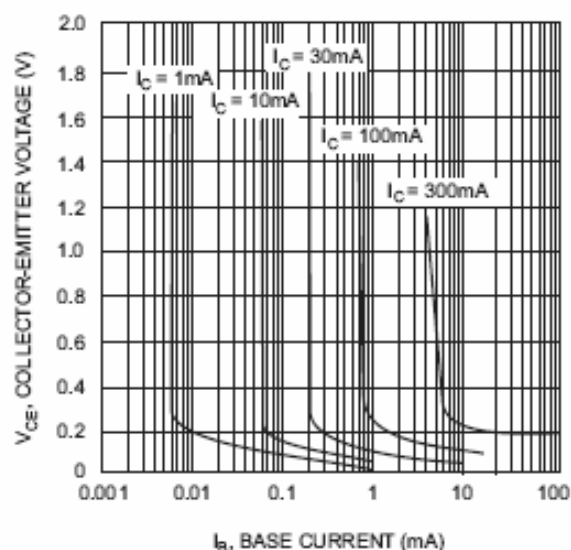


Fig. 4 Typical Collector Saturation Region

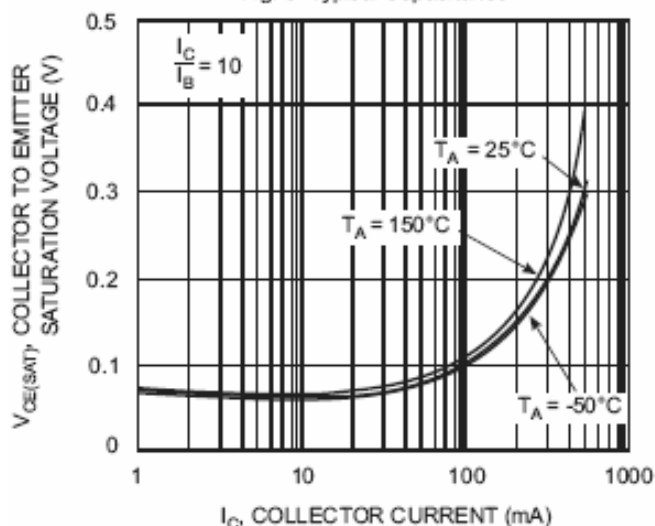


Fig. 5 Collector Emitter Saturation Voltage vs. Collector Current

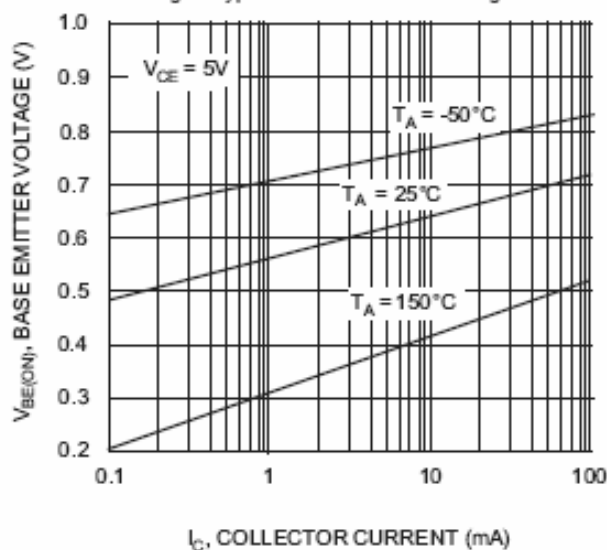


Fig. 6 Base Emitter Voltage vs. Collector Current



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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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