



Micro Commercial Components

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MMDT5401

Plastic-Encapsulate Transistors

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Marking:K4M
- Ideal for Low Power Amplification and Switching
- Ultra-small Surface Mount Package
- Epitaxial Planar Die Construction
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

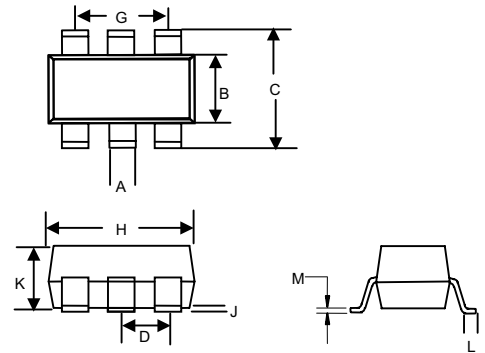
Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Rating	Rating	Unit
V _{CEO}	Collector-Emitter Voltage	-150	V
V _{CBO}	Collector-Base Voltage	-160	V
V _{EBO}	Emitter-Base Voltage	-5	V
I _C	Collector Current-Continuous	-0.2	A
P _C	Collector Dissipation	0.2	W
T _J	Operating Junction Temperature	-55 to +150	°C
T _{STG}	Storage Temperature	-55 to +150	°C

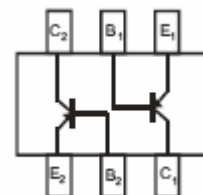
Electrical Characteristics @ 25°C Unless Otherwise Specified

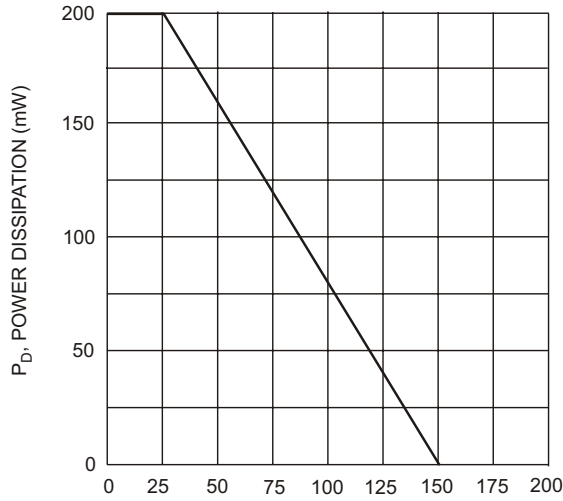
Symbol	Parameter	Min	Max	Units	
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage (I _C =-1mA, I _B =0)	-150	---	Vdc	
V _{(BR)CBO}	Collector-Base Breakdown Voltage (I _C =-100uA, I _E =0)	-160	---	Vdc	
V _{(BR)EBO}	Collector-Emitter Breakdown Voltage (I _E =-10uA, I _C =0)	-5	---	Vdc	
I _{CBO}	Collector Cutoff Current (V _{CB} =-120V, I _E =0)	---	0.05	uA	
I _{EBO}	Emitter Cutoff Current (V _{EB} =-3V, I _C =0)	---	-0.05	uA	
h _{FE}	DC Current Gain (I _C =-1mA, V _{CE} =-5V) (I _C =-10mA, V _{CE} =-5V) (I _C =-50mA, V _{CE} =-5V)	50	---	---	
		60	240		
		50	---		
V _{CE(sat)}	Collector-Emitter Saturation Voltage (I _C =-10mA, I _B =-1mA) (I _C =-50mA, I _B =-5mA)	---	-0.2 -0.5	Vdc	
V _{BE(sat)}	Base-Emitter Saturation Voltage (I _C =-10mA, I _B =-1mA) (I _C =-50mA, I _B =-5mA)	---	-1 -1	Vdc	
f _T	Current Gain-Bandwidth Product (V _{CE} =-10V, I _C =-10mA, f=100MHz)	100	300	MHz	
C _{ob}	Output Capacitance (V _{CB} =-5V, f=1.0MHz, I _E =0)	---	4.5	pF	
NF	Noise Figure (V _{CE} =-10V, I _C =-0.1mA, f=1KHz, R _S =1kΩ)	---	6	dB	
t _d	Delay Time	V _{CC} =-3V, I _C =-10mA, V _{BE} =-0.5V, I _{B1} =-I _{B2} =-1mA	---	35	ns
t _r	Rise Time	V _{CC} =-3V, I _C =-10mA, I _{B1} =-I _{B2} =-1mA	---	35	ns
t _S	Storage Time	V _{CC} =-3V, I _C =-10mA, I _{B1} =-I _{B2} =-1mA	---	225	ns
t _f	Fall Time	V _{CC} =-3V, I _C =-10mA, I _{B1} =-I _{B2} =-1mA	---	75	ns

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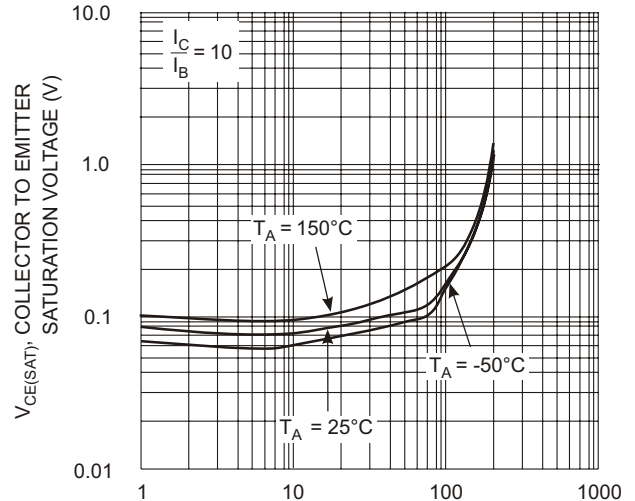


DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.006	.014	0.15	0.35	
B	.045	.053	1.15	1.35	
C	.085	.096	2.15	2.45	
D	.026		0.65Nominal		
G	.047	.055	1.20	1.40	
H	.071	.087	1.80	2.20	
J	---	.004	---	0.10	
K	.035	.043	0.90	1.10	
L	.010	.018	0.26	0.46	
M	.003	.006	0.08	0.15	

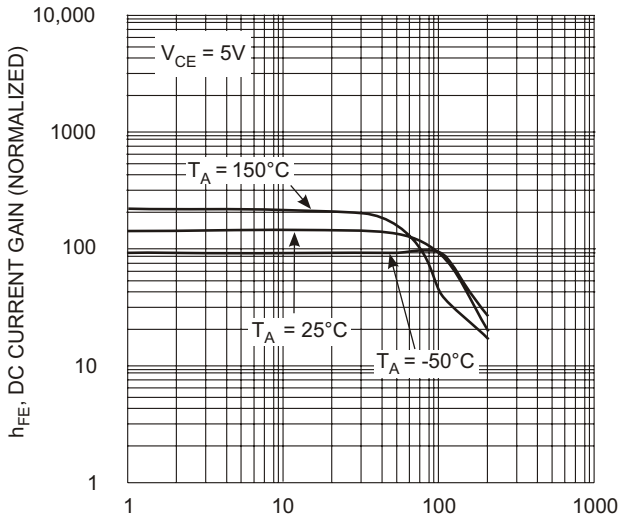




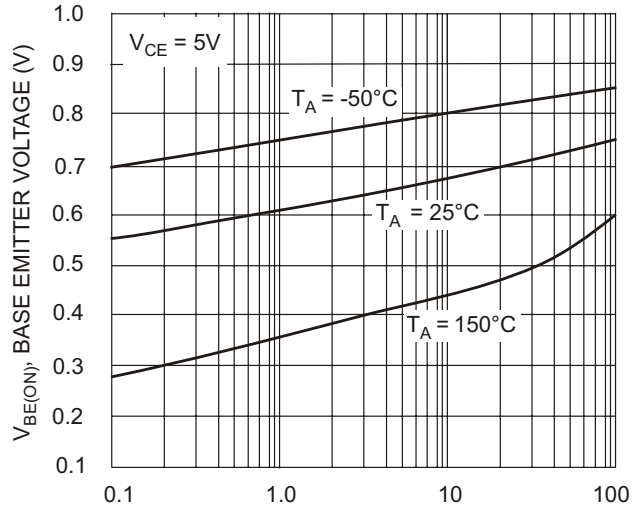
T_A, AMBIENT TEMPERATURE (°C)
Fig. 1, Max Power Dissipation vs Ambient Temperature



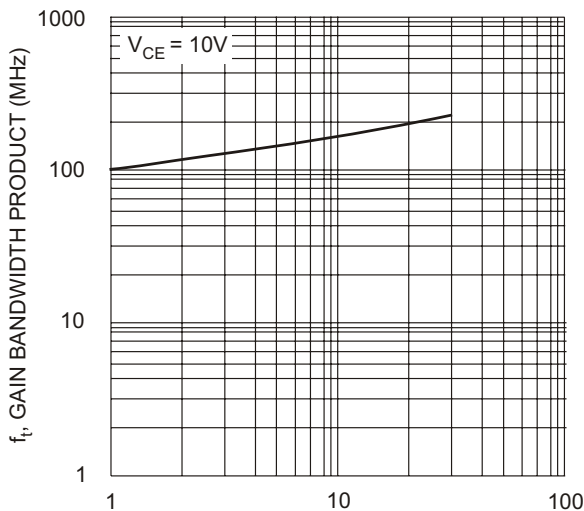
I_C, COLLECTOR CURRENT (mA)
Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current



I_C, COLLECTOR CURRENT (mA)
Fig. 3, DC Current Gain vs. Collector Current



I_C, COLLECTOR CURRENT (mA)
Fig. 4, Base Emitter Voltage vs. Collector Current



I_C, COLLECTOR CURRENT (mA)
Fig. 5, Gain Bandwidth Product 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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