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
- Moisure Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

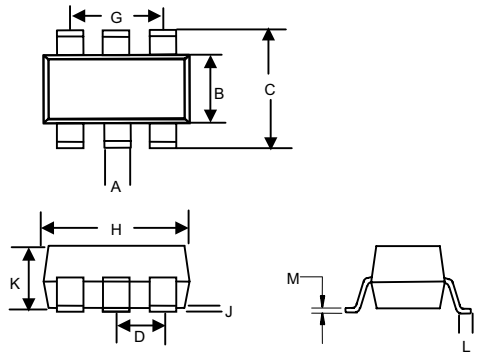
Maximum Ratings @ 25°C Unless Otherwise Specified

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	℃
T_{STG}	Storage Temperature	-55 to +150	℃

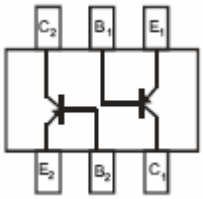
Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter		Min	Max	Units
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage (I_C=-1mAdc, I_B=0)		-150	---	Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_C=-100uAdc, I_E=0)		-160	---	Vdc
$V_{(BR)EBO}$	Collector-Emitter Breakdown Voltage (I_E=-10uAdc, I_C=0)		-5	---	Vdc
I_{CBO}	Collector Cutoff Current (V_{CB}=-120Vdc,I_E=0)		--	0.05	uA
I_{EBO}	Emitter Cutoff Current (V_{EB}=-3Vdc,I_C=0)		---	-0.05	uA
h_{FE}	DC Current Gain (I_C=-1mAdc, V_{CE}=-5Vdc) (I_C=-10mAdc, V_{CE}=-5Vdc) (I_C=-50mAdc, V_{CE}=-5Vdc)		 50 100 50	 --- 300 ---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (I_C=-10mAdc, I_B=-1mAdc) (I_C=-50mAdc, I_B=-5mAdc)		 --- ---	 -0.2 -0.5	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (I_C=-10mAdc, I_B=-1mAdc) (I_C=-50mAdc, I_B=-5mAdc)		 --- ---	 -1 -1	Vdc
f_T	Current Gain-Bandwidth Product (V_{CE}=-10Vdc, I_C=-10mAdc, f=100MHz)		100	300	MHz
C_{ob}	Output Capacitance (V_{CB}=-5Vdc, 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,	---	35	ns
t_r	Rise Time	V_{BE}=-0.5V, I_{B1}=-I_{B2}=-1mA	---	35	ns
t_S	Storage Time	V_{CC}=-3V, I_C=-10mA,	---	225	ns
t_f	Fall Time	I_{B1}=-I_{B2}=-1mA	---	75	ns

SOT-363



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
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	



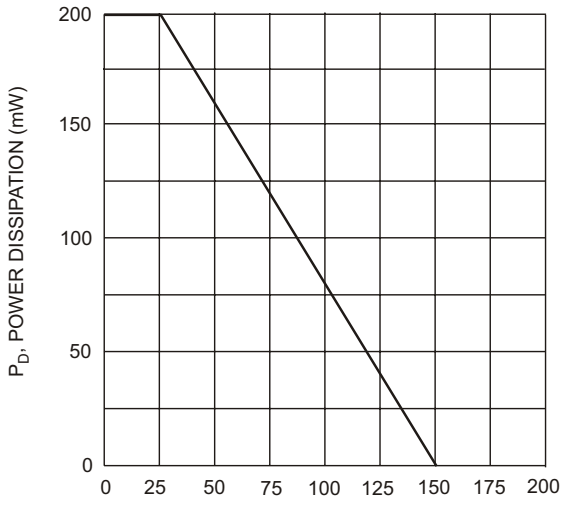


Fig. 1, Max Power Dissipation vs Ambient Temperature

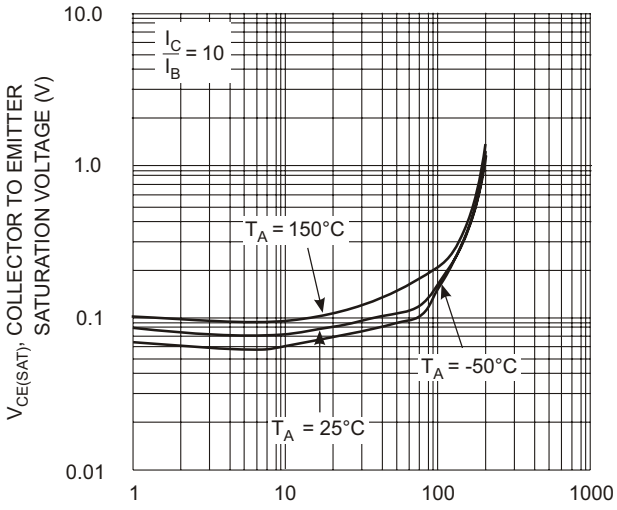


Fig. 2, Collector Emitter Saturation Voltage vs. Collector Current

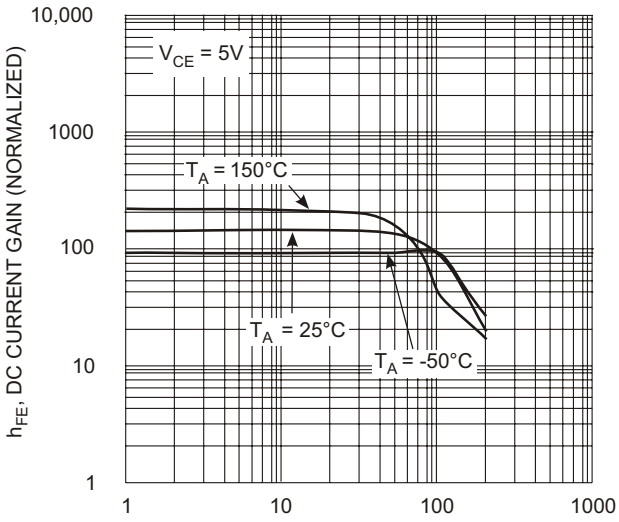


Fig. 3, DC Current Gain vs. Collector Current

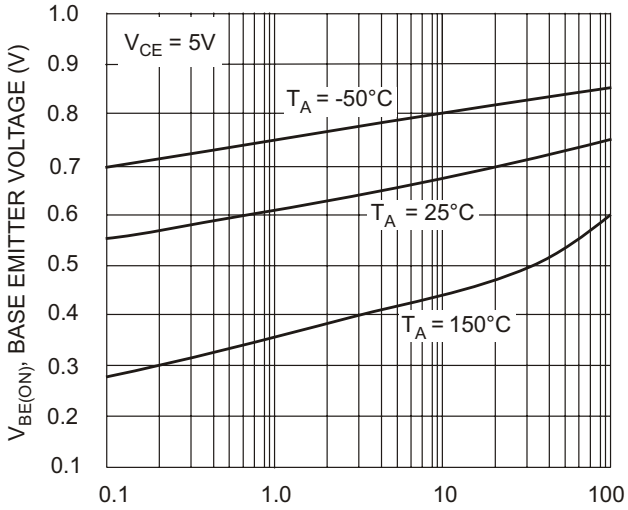


Fig. 4, Base Emitter Voltage vs. Collector Current

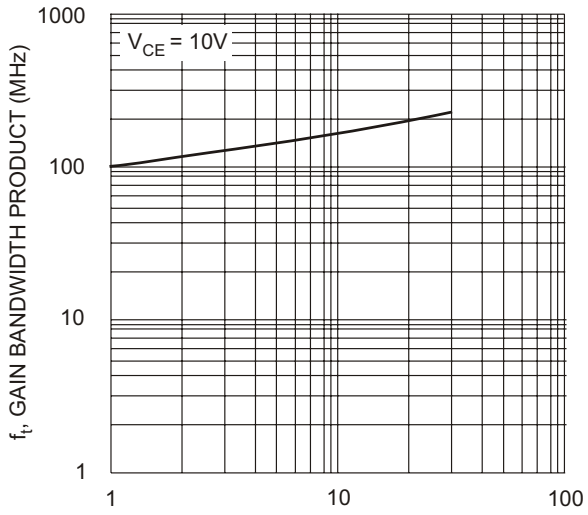


Fig. 5, Gain Bandwidth Product vs Collector Current

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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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