



Micro Commercial Components

Micro Commercial Components  
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# MMDT4403

## PNP Plastic-Encapsulate Transistors

### Features

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epitaxial Planar Die Construction
- Ideal for Low Power Amplification and Switching
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking: K4M/K2T

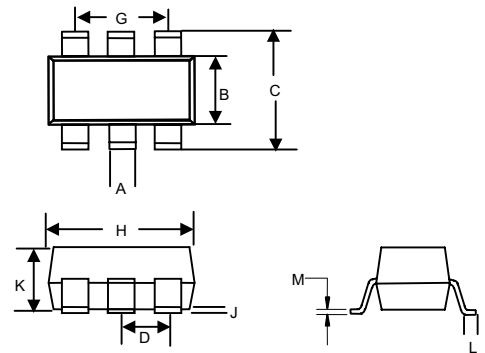
### Maximum Ratings @ 25°C Unless Otherwise Specified

Symbol	Rating	Rating(PNP)	Unit
V <sub>CEO</sub>	Collector-Emitter Voltage	40	V
V <sub>CBO</sub>	Collector-Base Voltage	40	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current-Continuous	0.6	A
P <sub>C</sub>	Collector Dissipation	0.2	W
T <sub>J</sub>	Operating Junction Temperature	-55 to +150	°C
T <sub>STG</sub>	Storage Temperature	-55 to +150	°C

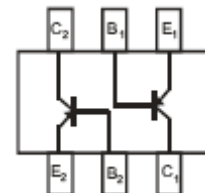
### Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage (I <sub>C</sub> =-1mA, I <sub>B</sub> =0)	40	---	Vdc
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage (I <sub>C</sub> =100uAdc, I <sub>E</sub> =0)	40	---	Vdc
V <sub>(BR)EBO</sub>	Collector-Emitter Breakdown Voltage (I <sub>E</sub> =100uAdc, I <sub>C</sub> =0)	5	---	Vdc
I <sub>CBO</sub>	Collector Cutoff Current (V <sub>CB</sub> =50Vdc, I <sub>E</sub> =0)	---	0.1	uAdc
I <sub>EBO</sub>	Emitter Cutoff Current (V <sub>EB</sub> =-5Vdc, I <sub>C</sub> =0)	---	0.1	uAdc
h <sub>FE</sub>	DC Current Gain (I <sub>C</sub> =0.1mA, V <sub>CE</sub> =1Vdc)	30	---	---
	(I <sub>C</sub> =1mA, V <sub>CE</sub> =1Vdc)	60	---	
	(I <sub>C</sub> =10mA, V <sub>CE</sub> =1Vdc)	100	---	
	(I <sub>C</sub> =150mA, V <sub>CE</sub> =2Vdc)	100	300	
	(I <sub>C</sub> =500mA, V <sub>CE</sub> =2Vdc)	20	---	
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage (I <sub>C</sub> =150mA, I <sub>B</sub> =15mA)	---	0.4	Vdc
	(I <sub>C</sub> =500mA, I <sub>B</sub> =50mA)	---	0.75	
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage (I <sub>C</sub> =150mA, I <sub>B</sub> =15mA)	0.75	0.95	Vdc
	(I <sub>C</sub> =500mA, I <sub>B</sub> =50mA)	---	1.3	
f <sub>T</sub>	Current Gain-Bandwidth Product (V <sub>CE</sub> =10.0Vdc, I <sub>C</sub> =20mA, f=100MHz)	200	---	MHz
C <sub>ob</sub>	Output Capacitance (V <sub>CB</sub> =10Vdc, f=1.0MHz, I <sub>E</sub> =0)	---	8.5	pF
t <sub>d</sub>	Delay Time	V <sub>CC</sub> =30V, I <sub>C</sub> =150mA, V <sub>BE</sub> =2.00V, I <sub>B1</sub> =15.00mA		15 ns
t <sub>r</sub>	Rise Time	V <sub>CC</sub> =30V, I <sub>C</sub> =150mA, V <sub>BE</sub> =2.00V, I <sub>B1</sub> =15.00mA		20 ns
t <sub>S</sub>	Storage Time	V <sub>CC</sub> =30V, I <sub>C</sub> =150mA, I <sub>B1</sub> =I <sub>B2</sub> =15mA		225 ns
t <sub>f</sub>	Fall Time	V <sub>CC</sub> =30V, I <sub>C</sub> =150mA, I <sub>B1</sub> =I <sub>B2</sub> =15mA		30 ns

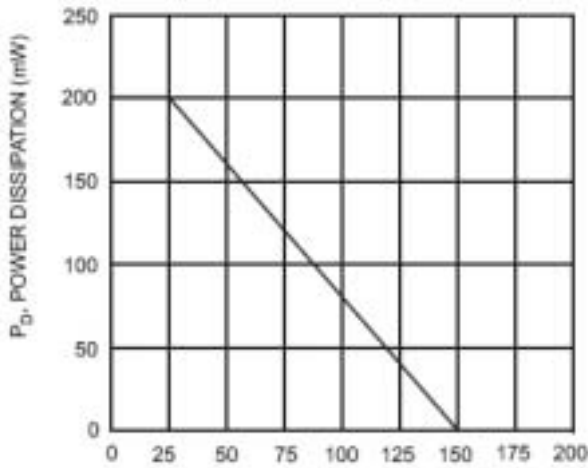
### SOT-363



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	

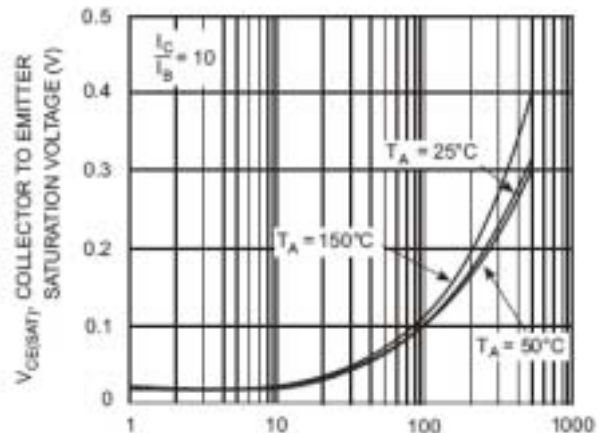


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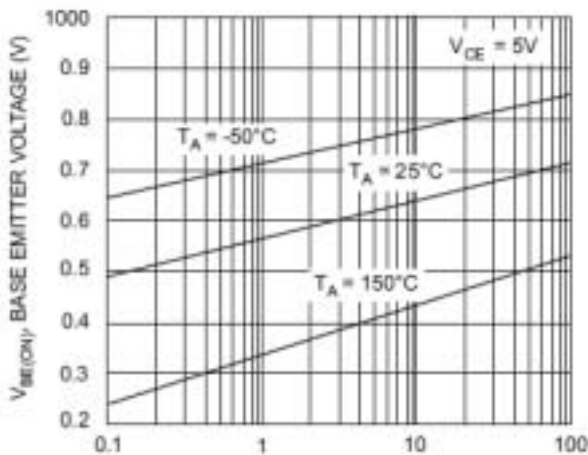
$T_A$ , AMBIENT TEMPERATURE ( $^{\circ}C$ )

Fig. 1, Max Power Dissipation vs Ambient Temperature



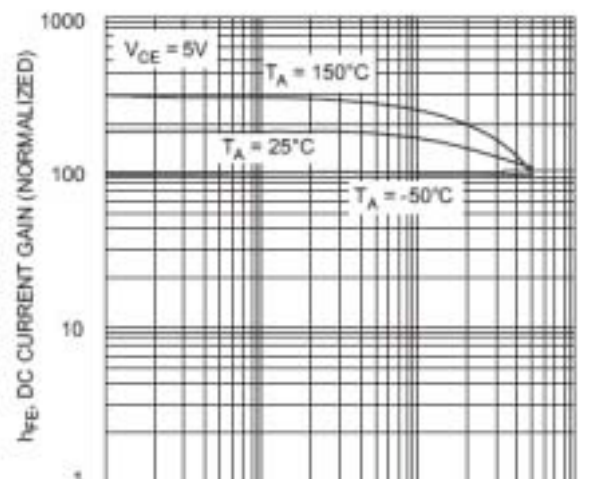
$I_C$ , COLLECTOR CURRENT (mA)

Fig. 2 Collector Emitter Saturation Voltage vs. Collector Current



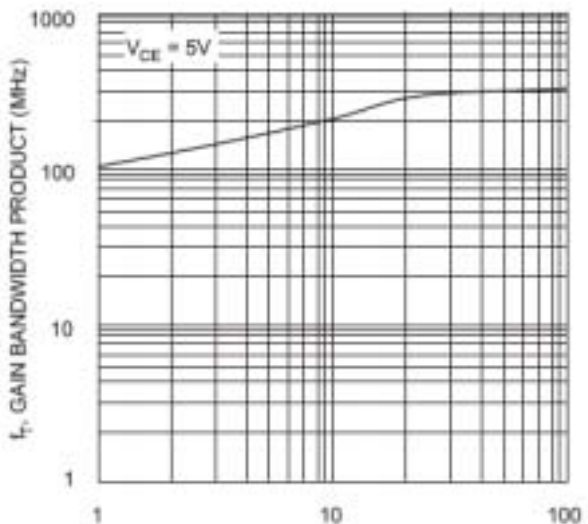
$I_C$ , COLLECTOR CURRENT (mA)

Fig. 3 Base-Emitter Voltage vs. Collector Current



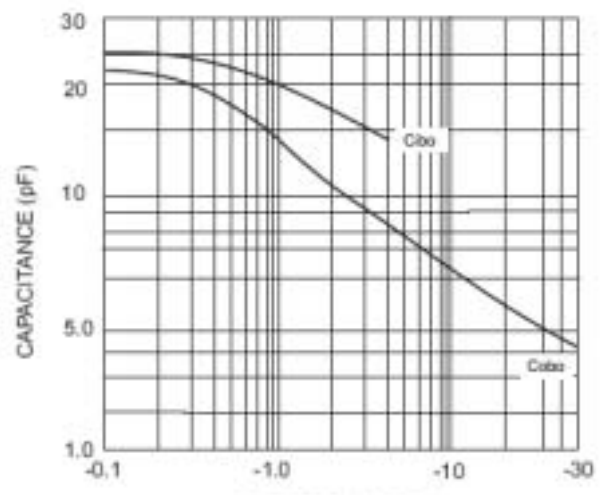
$I_C$ , COLLECTOR CURRENT (mA)

Fig. 4 DC Current Gain vs. Collector Current



$I_C$ , COLLECTOR CURRENT (mA)

Fig. 5 Gain Bandwidth Product vs. Collector Current



REVERSE VOLTS (V)

Fig. 6 Typical Capacitance



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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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