



Micro Commercial Components

Micro Commercial Components
 20736 Marilla Street Chatsworth
 CA 91311
 Phone: (818) 701-4933
 Fax: (818) 701-4939

MMDT3904V

NPN Plastic-Encapsulate Transistors

Features

- Epitaxial Die Construction
- Ideal for Low Power Amplification and Switching
- Ultra-small Surface Mount Package
- Case Material: Molded Plastic. UL Flammability Classification Rating 94-0 and MSL Rating 1
- Marking: KAP

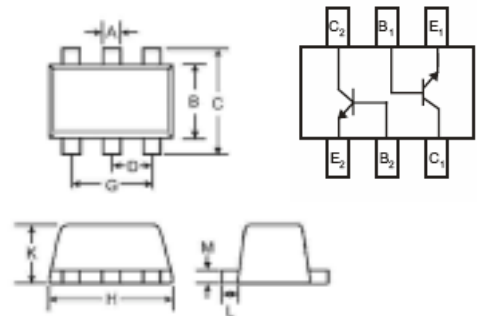
Maximum Ratings @ 250C Unless Otherwise Specified

Symbol	Rating	Rating	Unit
V _{CEO}	Collector-Emitter Voltage	40	V
V _{CBO}	Collector-Base Voltage	60	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current-Continuous	0.2	A
P _C	Collector Dissipation	0.2	W
R _{θJA}	Thermal Resistance Junction to Ambient	625	°C/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	Typ	Max	Units
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage (I _C =1mA _{dc} , I _B =0)	40	---	---	Vdc
V _{(BR)CBO}	Collector-Base Breakdown Voltage (I _C =10uA _{dc} , I _E =0)	60	---	---	Vdc
V _{(BR)EBO}	Collector-Emitter Breakdown Voltage (I _E =10uA _{dc} , I _C =0)	5	---	---	Vdc
I _{CEX}	Collector Cutoff Current (V _{CE} =60Vdc, V _{EB(OFF)} =3Vdc)	---	---	50	nA _{dc}
I _{BL}	Base Cutoff Current (V _{CE} =60Vdc, V _{EB(OFF)} =3Vdc)	---	---	50	nA _{dc}
h _{FE}	DC Current Gain (I _C =0.1mA _{dc} , V _{CE} =1Vdc) (I _C =1mA _{dc} , V _{CE} =1Vdc) (I _C =10mA _{dc} , V _{CE} =1Vdc) (I _C =50mA _{dc} , V _{CE} =1Vdc) (I _C =100mA _{dc} , V _{CE} =1Vdc)	40 70 100 60 30	---	---	---
V _{CE(sat)}	Collector-Emitter Saturation Voltage (I _C =10mA _{dc} , I _B =1mA _{dc}) (I _C =50mA _{dc} , I _B =5mA _{dc})	---	---	0.2 0.3	Vdc
V _{BE(sat)}	Base-Emitter Saturation Voltage (I _C =10mA _{dc} , I _B =1mA _{dc}) (I _C =50mA _{dc} , I _B =5mA _{dc})	0.65 ---	---	0.85 0.95	Vdc

SOT-563



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.006	.011	0.15	0.30	
B	.043	.049	1.10	1.25	
C	.061	.067	1.55	1.70	
D	.020		0.50		
G	.035	.043	0.90	1.10	
H	.059	.067	1.50	1.70	
K	.022	.023	0.56	0.60	
L	.004	.011	0.10	0.30	
M	.004	.007	0.10	0.18	

MMDT3904V



Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Typ	Max	Units
f_T	Transition Frequency ($V_{CE}=20V_{dc}$, $I_C=10mA_{dc}$, $f=100MHz$)	300	---	---	MHz
C_{ob}	Output Capacitance ($V_{CB}=5V_{dc}$, $f=1.0MHz$, $I_E=0$)	---	---	4	pF
NF	Noise Figure ($V_{CE}=5V$, $I_C=0.1mA$, $f=1KHz$, $R_S=1k\Omega$)	---	---	5	dB
t_d	Delay Time	---	---	35	ns
t_r	Rise Time				
t_s	Storage Time	---	---	200	ns
t_f	Fall Time				
		---	---	50	ns

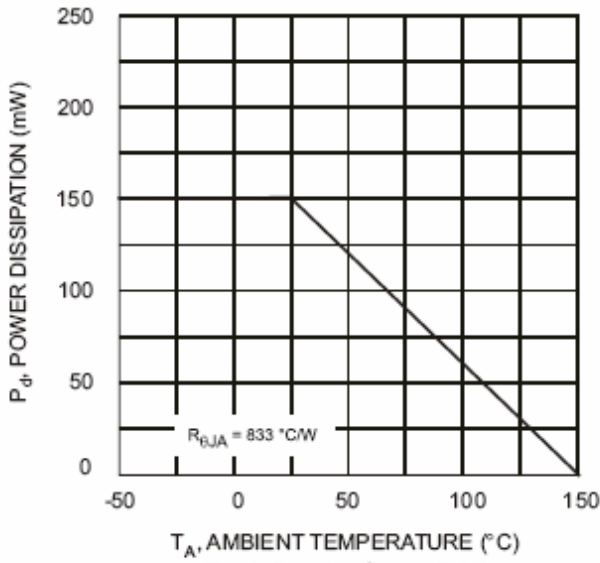


Fig. 1, Derating Curve - Total

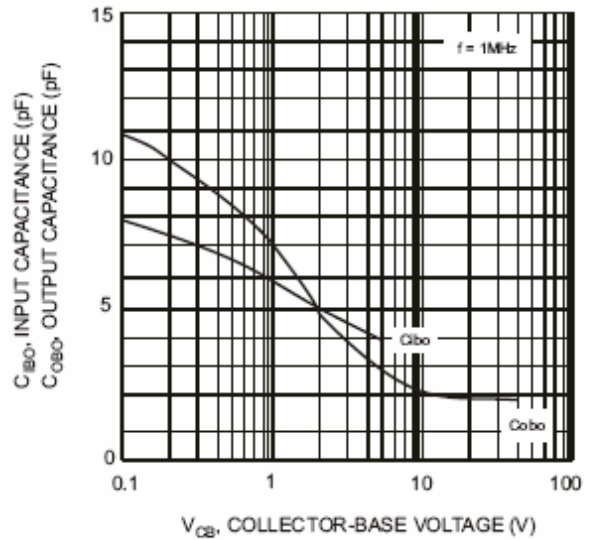


Fig. 2, Input and Output Capacitance vs. Collector-Base Voltage

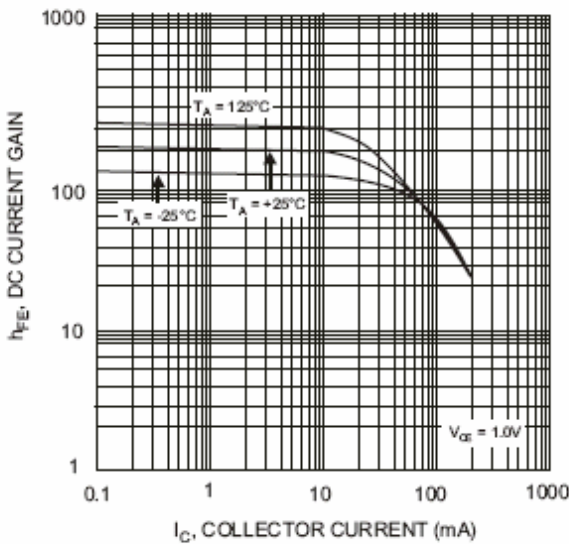


Fig. 3, Typical DC Current Gain vs Collector Current

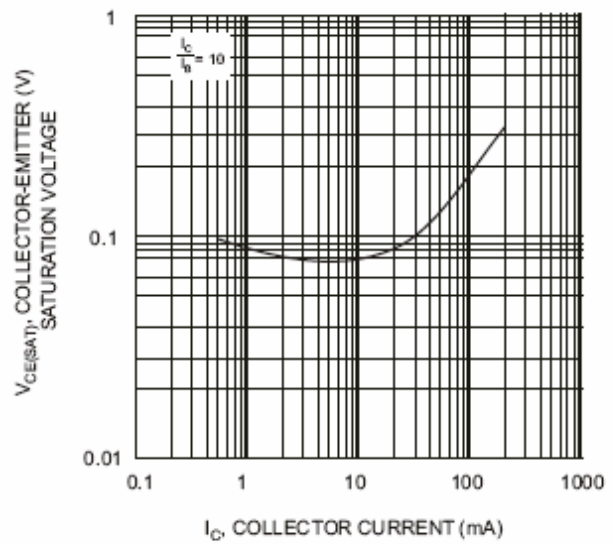


Fig. 4, Typical Collector-Emitter Saturation Voltage vs. Collector Current

MMDT3904V



Micro Commercial Components

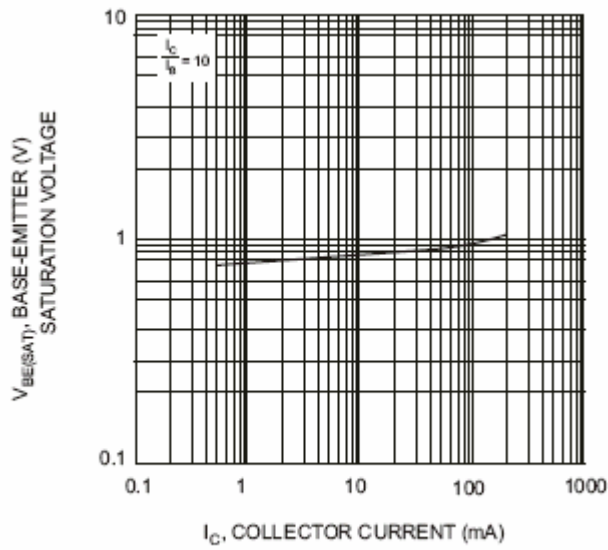


Fig. 5, Typical Base-Emitter Saturation Voltage vs. Collector Current



Micro Commercial Components

Ordering Information

Device	Packing
(Part Number)-TP	Tape&Reel;3Kpcs/Reel

IMPORTANT NOTICE

Micro Commercial Components Corp. reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. *Micro Commercial Components Corp.* does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold *Micro Commercial Components Corp.* and all the companies whose products are represented on our website, harmless against all damages.

APPLICATIONS DISCLAIMER

Products offer by *Micro Commercial Components Corp.* are not intended for use in Medical, Aerospace or Military Applications.