Micro Commercial Components

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MMDT3906V

PNP 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 94V-0
- Marking:KAR

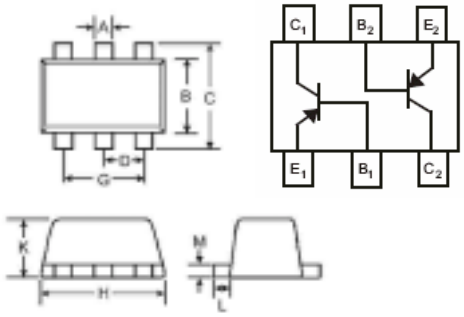
Maximum Ratings @ 250C Unless Otherwise Specified

Symbol	Rating	Rating	Unit
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{CBO}	Collector-Base Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current-Continuous	-0.2	A
P_C	Collector Dissipation	0.15	W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	833	℃/W
T_J	Operating Junction Temperature	-55 to +150	℃
T_{STG}	Storage Temperature	-55 to +150	℃

Electrical Characteristics @ 25ºC Unless Otherwise Specified

Symbol	Parameter	Min	Typ	Max	Units
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage (I_C=-1mAdc, I_B=0)	-40	---	---	Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_C=-10uAdc, I_E=0)	-40	---	---	Vdc
$V_{(BR)EBO}$	Collector-Emitter Breakdown Voltage (I_E=-10uAdc, I_C=0)	-5	---	---	Vdc
I_{CEX}	Collector Cutoff Current (V_{CE}=-30Vdc,$V_{EB(OFF)}$=-3Vdc)	---	---	50	nAdc
I_{BL}	Base Cutoff Current (V_{CE}=-30Vdc,$V_{EB(OFF)}$=-3Vdc)	---	---	50	nAdc
h_{FE}	DC Current Gain (I_C=-0.1mAdc, V_{CE}=-1Vdc) (I_C=-1mAdc, V_{CE}=-1Vdc) (I_C=-10mAdc, V_{CE}=-1Vdc) (I_C=-50mAdc, V_{CE}=-1Vdc) (I_C=-100mAdc, V_{CE}=-1Vdc)	 60 80 100 60 30	 --- --- --- --- ---	 --- --- 300 --- ---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (I_C=-10mAdc, I_B=-1mAdc) (I_C=-50mAdc, I_B=-5mAdc)	 --- ---	 --- ---	 -0.25 -0.4	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (I_C=-10mAdc, I_B=-1mAdc) (I_C=-50mAdc, I_B=-5mAdc)	 -0.65 ---	 --- ---	 -0.85 -0.95	Vdc

SOT-563



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
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	

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter		Min	Typ	Max	Units
f_T	Transition Frequency (V_{CE}=-20Vdc, I_C=-10mAdc, f=100MHz)		250	---	---	MHz
C_{ob}	Output Capacitance (V_{CB}=-5Vdc, f=1.0MHz, I_E=0)		---	---	4.5	pF
NF	Noise Figure (V_{CE}=-5V,I_C=-0.1mA, f=1KHz, R_S=1kΩ)		---	---	4	dB
t_d	Delay Time	V_{CC}=-3V, I_C=-10mA, $V_{BE(off)}$=0.5V, I_{B1}=-I_{B2}=-1mA	---	---	35	ns
t_r	Rise Time		---	---	35	ns
t_S	Storage Time	V_{CC}=-3V, I_C=-10mA, I_{B1}=-I_{B2}=-1mA	---	---	225	ns
t_f	Fall Time		---	---	75	ns

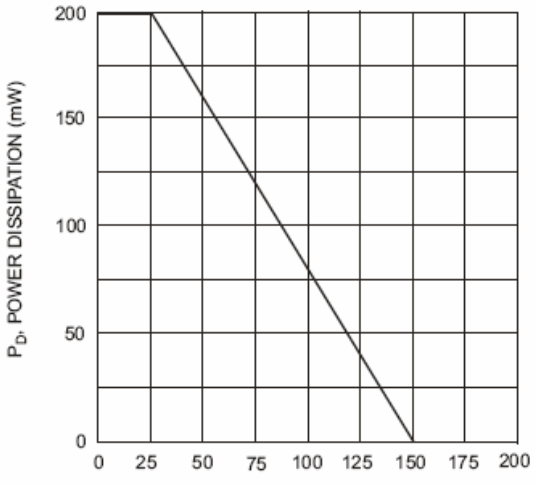


Fig. 1, Max Power Dissipation vs Ambient Temperature

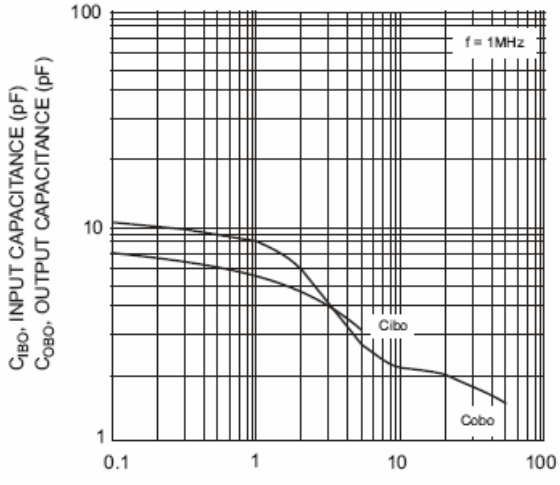


Fig. 2, Input and Output Capacitance vs. Collector-Base Voltage

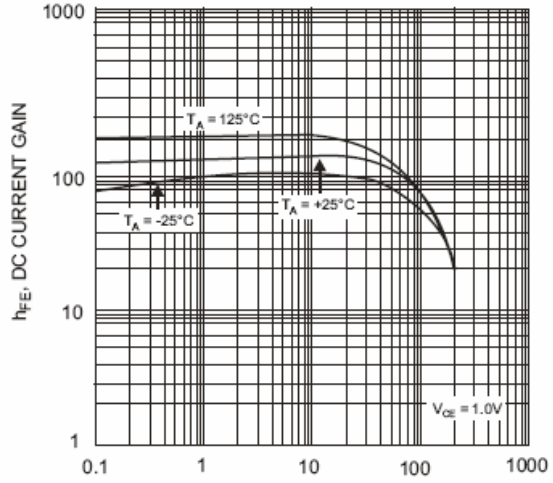


Fig. 3, Typical DC Current Gain vs Collector Current

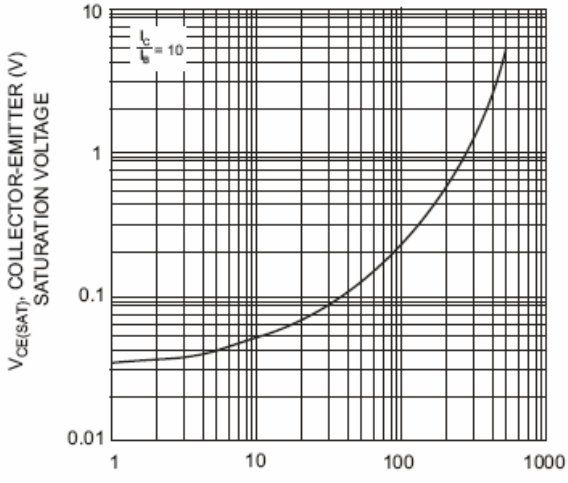


Fig. 4, Typical Collector-Emitter Saturation Voltage vs. Collector Current

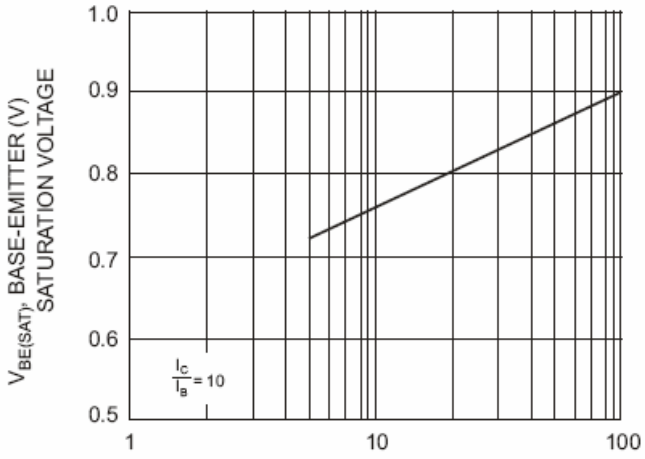


Fig. 5, Typical Base-Emitter Saturation Voltage vs. Collector Current

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