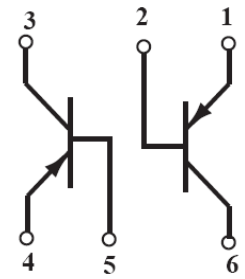
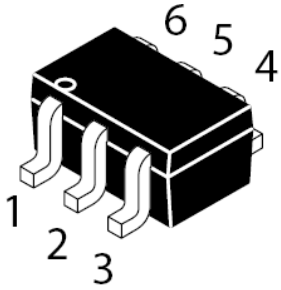
LITE-ON SEMICONDUCTORS

MMDT3906

PNP/PNP Multi-Chip Transistor





FEATURES

- Ideal for low power amplification and switching

MECHANICAL DATA

- Case: SOT-363 Plastic
- Case material: “Green” molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl)
- Lead Free in RoHS 2002/95/EC Compliant

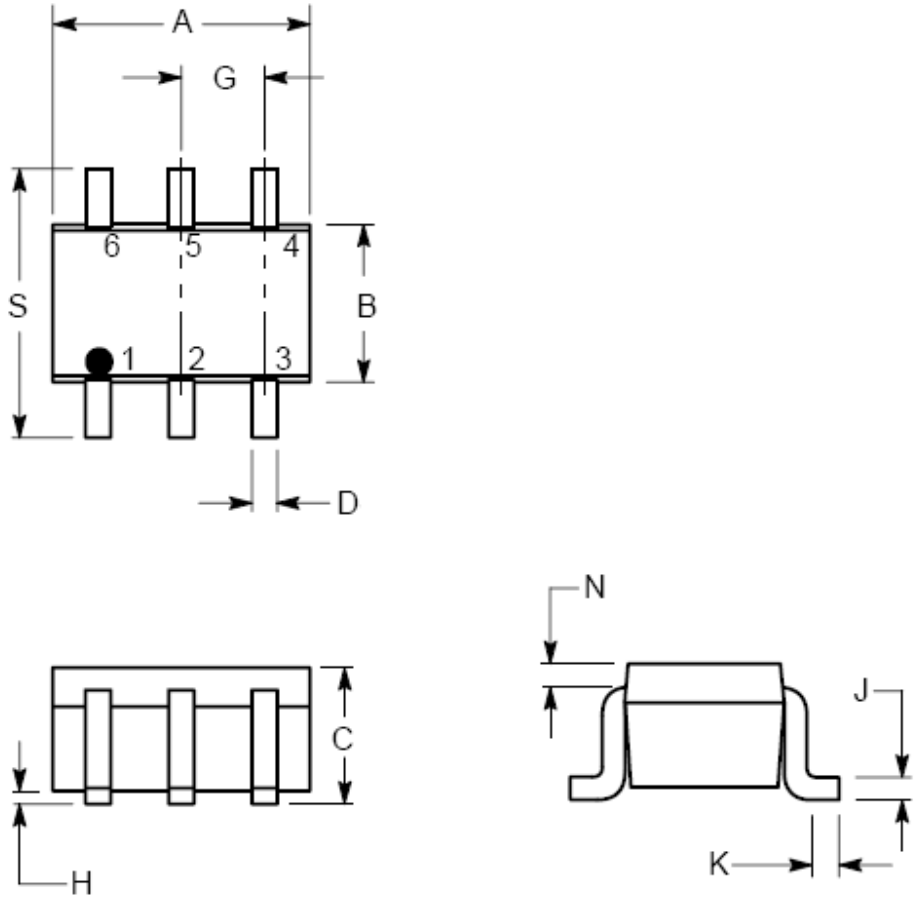
Maximum Ratings @ T_A = 25℃

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current -Continuous	I_C	-200	mA
Collector Power Dissipation	P_C	200	mW
Thermal Resistance, Junction to Ambient	$R_{\Theta JA}$	625	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{STG}	-55~+150	℃

Electrical Characteristics @ T_A = 25℃ unless otherwise specified

Characteristic	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	I_C=-10μA,I_E=0	V_{CBO}	-40			V
Collector-emitter breakdown voltage	I_C=-1mA,I_B=0	V_{CEO}	-40			V
Emitter-base breakdown voltage	I_E=-10μA,I_C=0	V_{EBO}	-5			V
Collector-base cut-off current	V_{CE}=-30V,$V_{BE(off)}$=-3V	I_{CEX}			-50	nA
Emitter-base cut-off current	V_{EB}=-5V,I_C=0	I_{EBO}			-50	nA
DC current gain	V_{CE}=-1V,I_C=-0.1mA	h_{FE1}	60			
	V_{CE}=-1V,I_C=-1mA	h_{FE2}	80			
	V_{CE}=-1V,I_C=-10mA	h_{FE3}	100		300	
	V_{CE}=-1V,I_C=-50mA	h_{FE4}	60			
	V_{CE}=-1V,I_C=-100mA	h_{FE5}	30			
Collector-emitter saturation voltage	I_C=-10mA,I_B=-1mA	V_{CE}(sat)1			-0.25	V
	I_C=-50mA,I_B=-5mA	V_{CE}(sat)2			-0.4	V
Base-emitter saturation voltage	I_C=-10mA,I_B=-1mA	V_{BE}(sat)1	-0.65		-0.85	V
	I_C=-50mA,I_B=-5mA	V_{BE}(sat)2			-0.95	V
Transition frequency	V_{CE}=-20V,I_C=-10mA, f=100MHz	f_T	250			MHz
Collector output capacitance	V_{CB}=-5V,I_E=0,f=1MHz	Cob			4.5	pF
Noise figure	V_{CE}=-5V,I_C=-0.1mA,f=1kHz ,Rg=1KΩ	NF			4	dB
Delay time	V_{CC}=-3V, V_{BE}=-0.5V I_C=-10mA , I_{B1}=-I_{B2}=-1mA	T_d			35	nS
Rise time		T_r			35	nS
Storage time	V_{CC}=-3V, I_C=-10mA I_{B1}=-I_{B2}=-1mA	T_s			225	nS
Fall time		T_f			75	nS

SOT-363 Outline Dimension



Symbol	Dimension In Millimeters	
	Min	Max.
A	1.89	2.20
B	1.15	1.35
C	0.80	1.10
D	0.10	0.30
G	0.65 BSC	
H	---	0.10
J	0.10	0.25
K	0.10	0.30
N	0.20 REF	
S	2.00	2.20

Device Marking :

Device P/N	Marking code
MMDT3906	A2

Electrical characteristic curves

Fig.1 Power Derating Curve

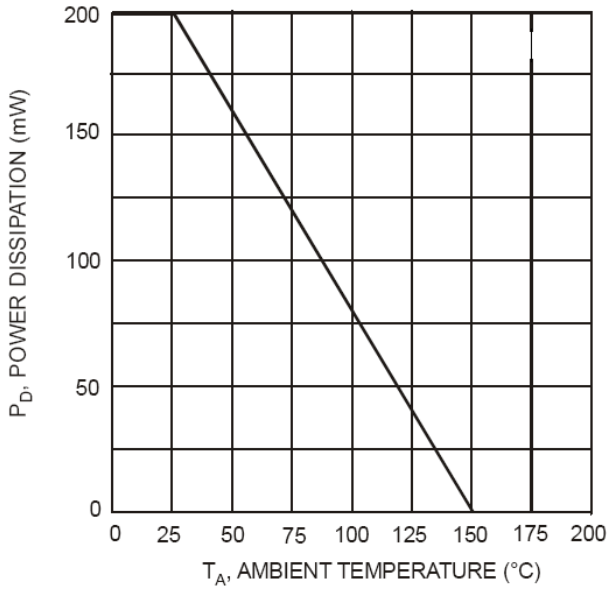


Fig.2 Input and Output Capacitance vs. Collector-Base Voltage

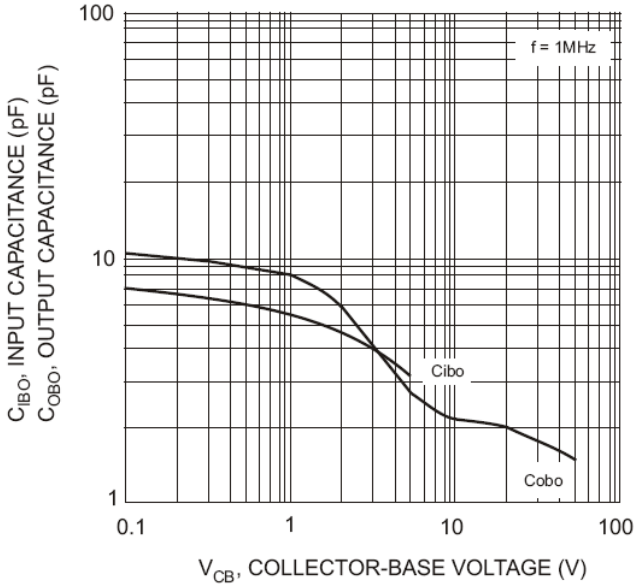


Fig.3 Typical DC Current Gain vs. Collector Current

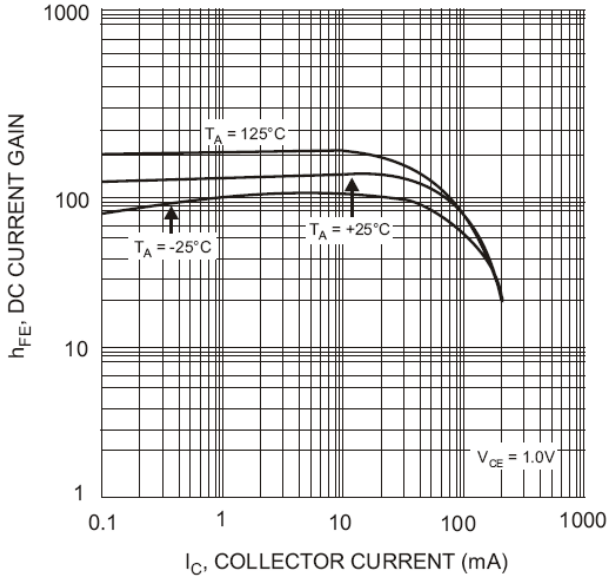


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current

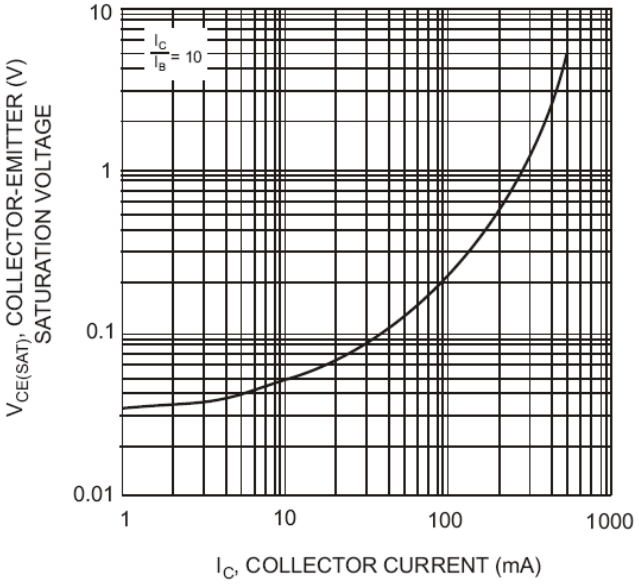
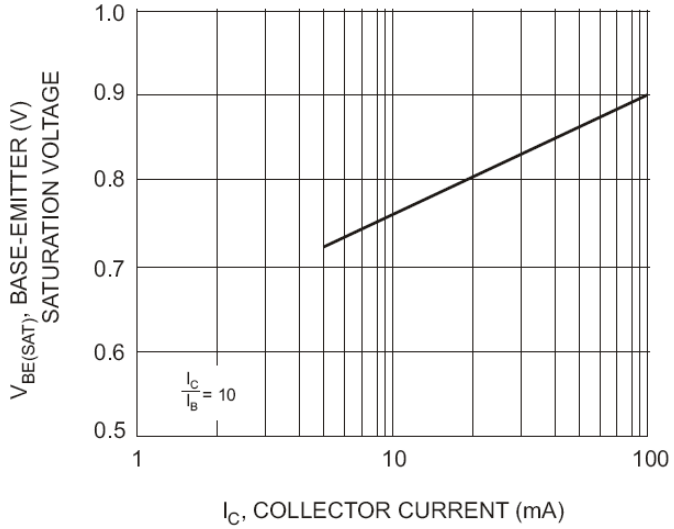


Fig.5 Base-Emitter Saturation Voltage vs. Collector Current



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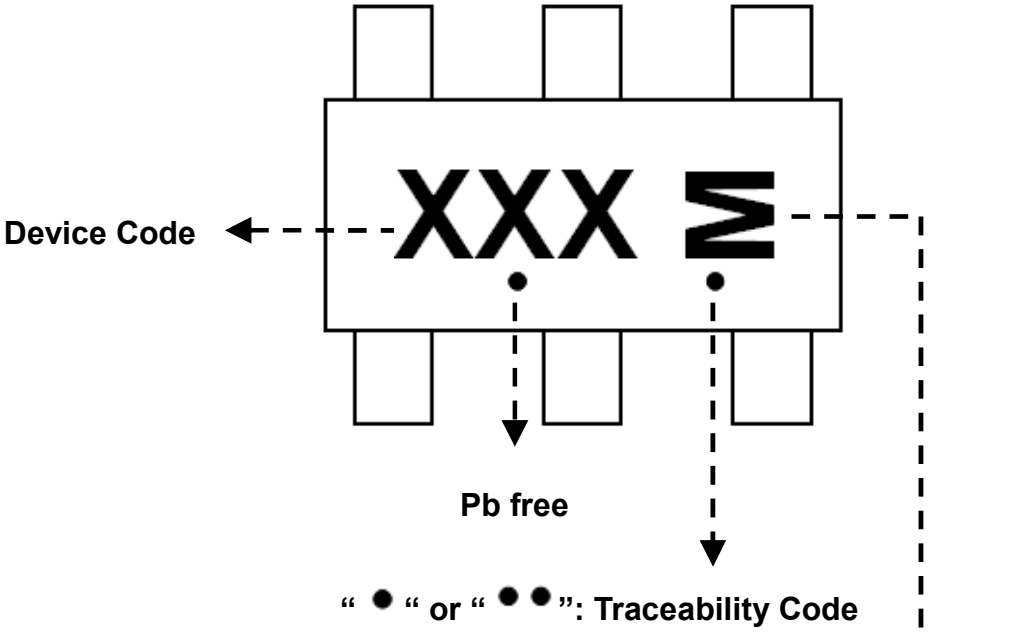
New Marking Rule Notification

Range: In order to have well management in process control, the new marking rule is applied to small signal device including Switching Diode, Transistor and Schottky Diode.

Package: SOT-363



Odd Year	Even Year
1	E
2	F
3	H
4	J
5	K
6	L
7	N
8	P
9	U
T	X
V	Y
C	Z