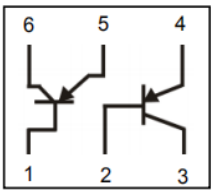
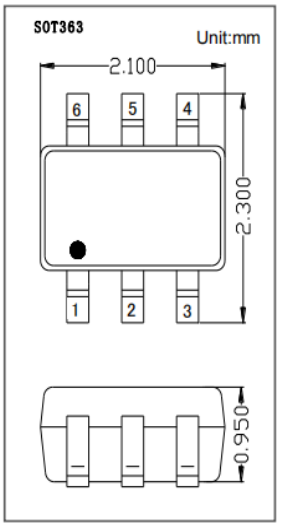
Dual PNP Small Signal Transistors

MMDT3906

- ◇ Epoxy meets UL 94 V-0 flammability rating
- ◇ Lead Free Finish/RoHS Compliant
- ◇ For Switching and AF Amplifier Applications
- ◇ Rugged and reliable

Equivalent Circuit





Maximum Ratings (Ta = 25 ℃)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-5	V
P_C	Collector Power Dissipation	200	mW
I_C	Collector Current - Continuous	-200	mA
T_J	Junction Temperature	150	℃
T_{STG}	Storage Temperature	-55 to 150	℃
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	℃/W

Electrical Characteristics (Ta = 25 ℃)

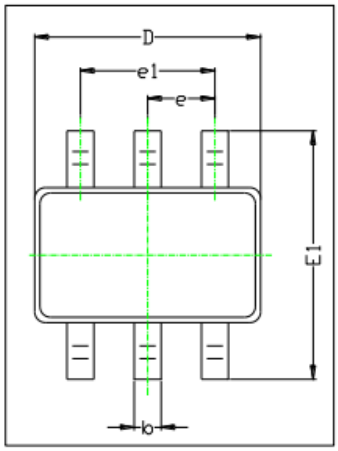
Symbol	Parameter	Test Conditions	Min	Max	Units
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = -10 μA, I_E =0	-40		V
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	I_C = -1mA, I_B =0	-40		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = -10 μA, I_C =0	-5		V
I_{BL}	Base Cutoff Current	V_{CE} = -30V, $V_{BE(OFF)}$ =-3V		-50	nA
I_{CEX}	Collector Cutoff Current	V_{CE} = -30V, $V_{BE(OFF)}$ =-3V		-50	nA
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = -10mA, I_B =-1mA		-0.25	V
		I_C = -50mA, I_B =-5mA		-0.4	
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C = -10mA, I_B =-1mA	-0.65	-0.85	V
		I_C = -50mA, I_B =-5mA		-0.95	

h_{FE}	DC Current Gain	V_{CE} = −1V, I_C =−0.1mA	60		
		V_{CE} = −1V, I_C =−1mA	80		
		V_{CE} = −1V, I_C =−10mA	100	300	
		V_{CE} = −1V, I_C =−50mA	60		
		V_{CE} = −1V, I_C =−100mA	30		
f_T	Transition Frequency	V_{CE} = −20V, I_C =−10mA, f=100MHz	250		MHz
C_{ob}	Output Capacitance	V_{CB} = −5V, I_E =0, f=1MHz		4.5	pF
t_d	Delay Time	V_{CC} = −3V, I_C =−10mA , $V_{BE(OFF)}$ = −0.5V, I_{B1} =−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

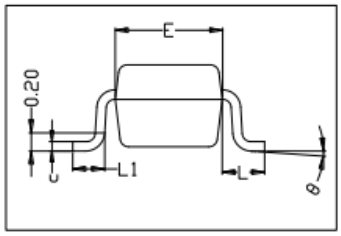
Package Dimensions

Package outline : SOT363-6L

TOP VIEW

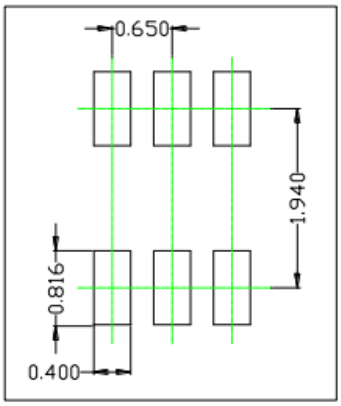


SIDE VIEW

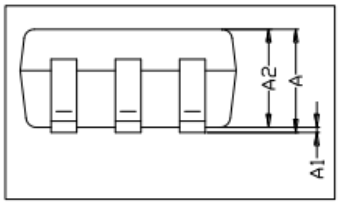


SYMBOL	DIMENSIONS IN MILLIMETER	
	MIN	MAX
A	0.900	1.000
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.100	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.400
e	0.650 TYP.	
e1	1.200	1.400
L	0.525 REF.	
L1	0.260	0.460
θ	0°	8°

SOLDRING PATTERN



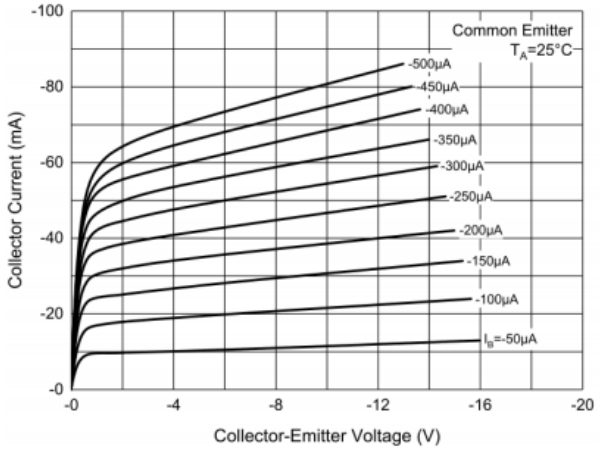
FRONT VIEW



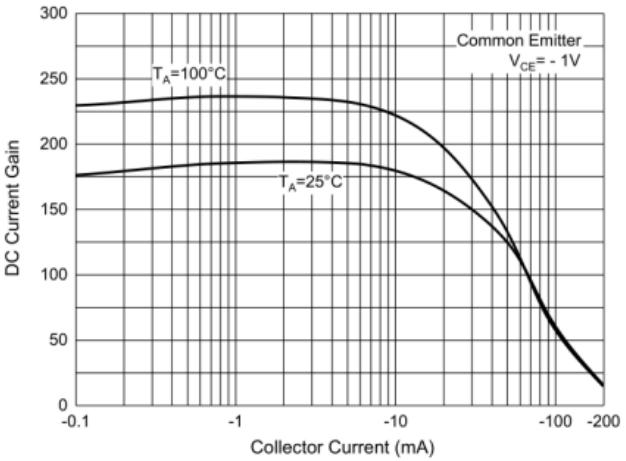
Notice:

1.Lead plating: Pb free solder
2.Lead thickness includes solder plating
3.Lead frame: CAC-5
4.Other Tolerance: ±0.05
6.Dimensions are exclusive of Burrs,Mold Flash and Tie Bar extrusions
5.Unit: mm

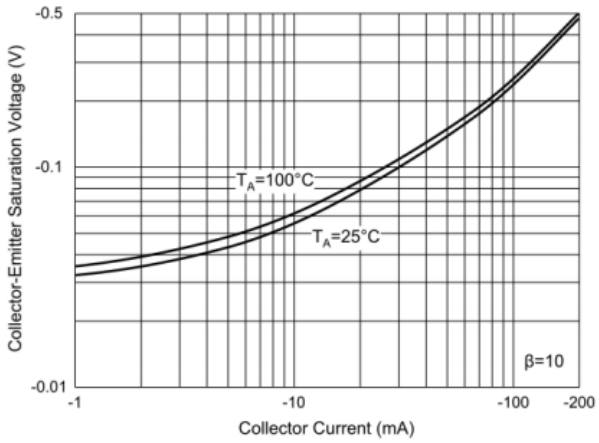
Typical Characteristics



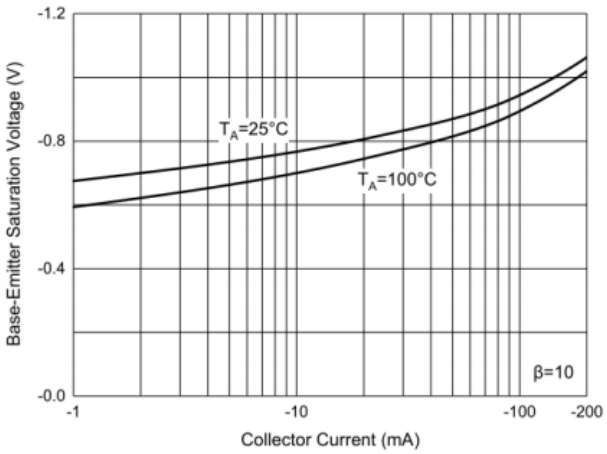
Static Characteristic



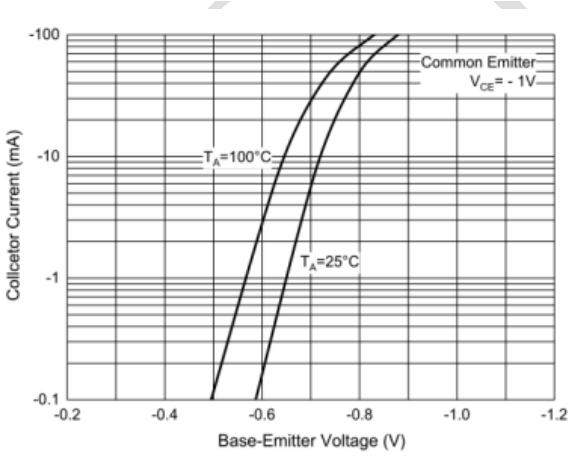
DC Current Gain Characteristics



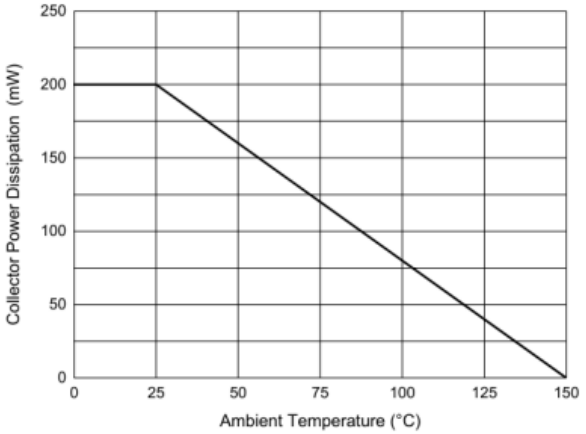
Collector-Emitter Saturation Voltage Characteristics



Base-Emitter Saturation Voltage Characteristics



Base-Emitter Voltage Characteristics



Collector Power Derating Curve