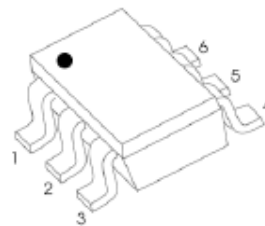


MMDT3906

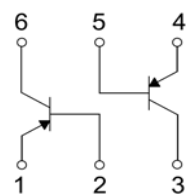
Dual PNP Transistor

Features

- Ideal for low power amplification and switching
- Plastic-Encapsulate transistor
- Epitaxial planar die construction



SOT-363



Schematic Diagram

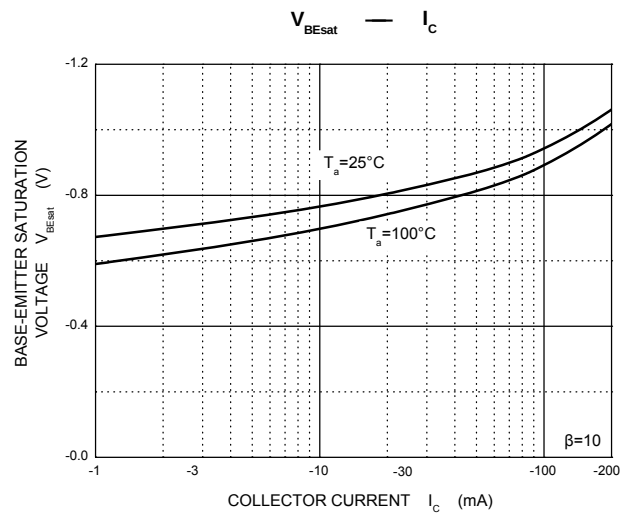
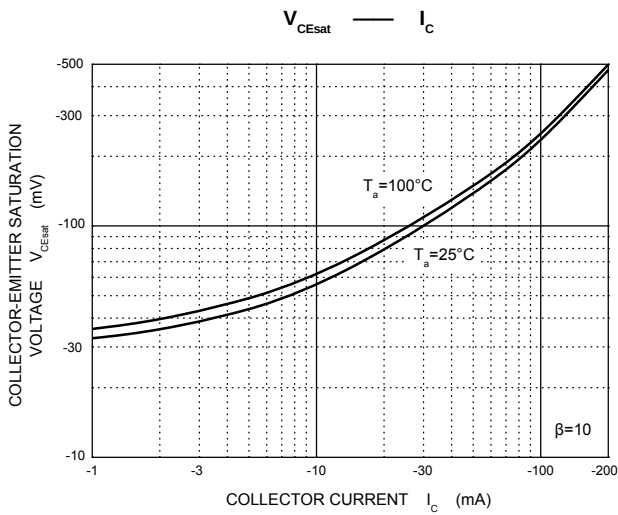
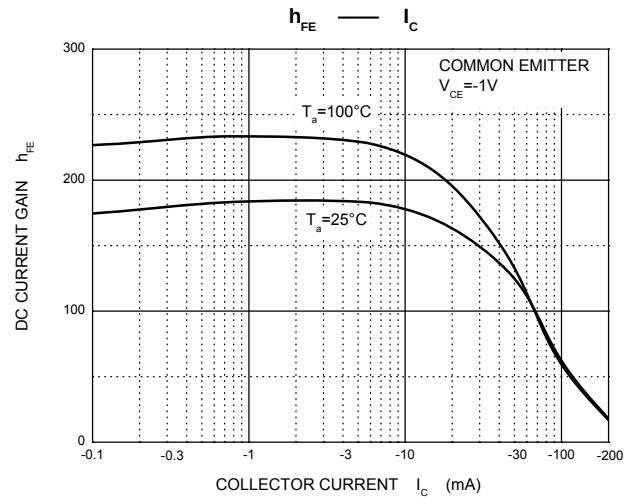
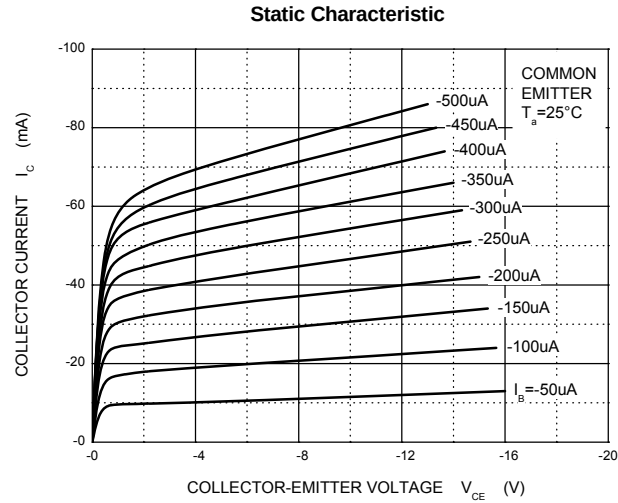
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	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 from Junction to Ambient Air	$R_{\theta JA}$	625	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}\text{C}$

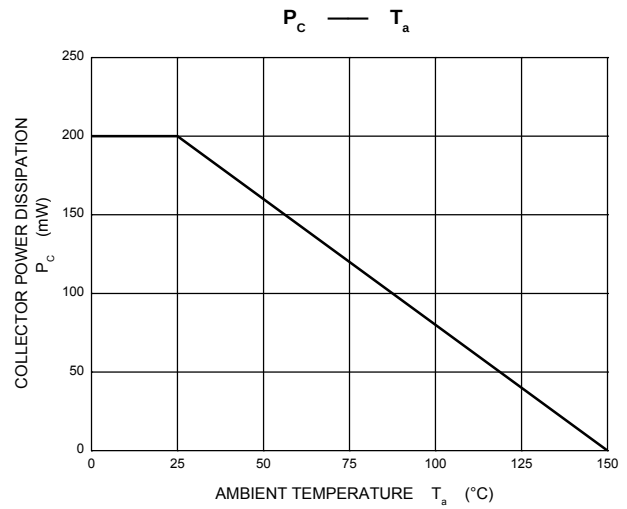
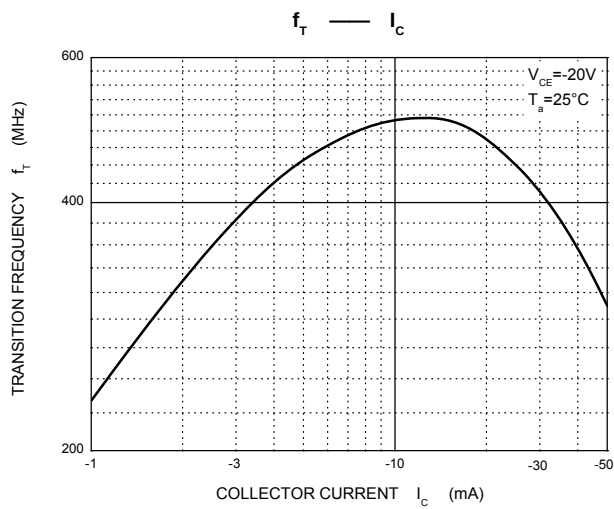
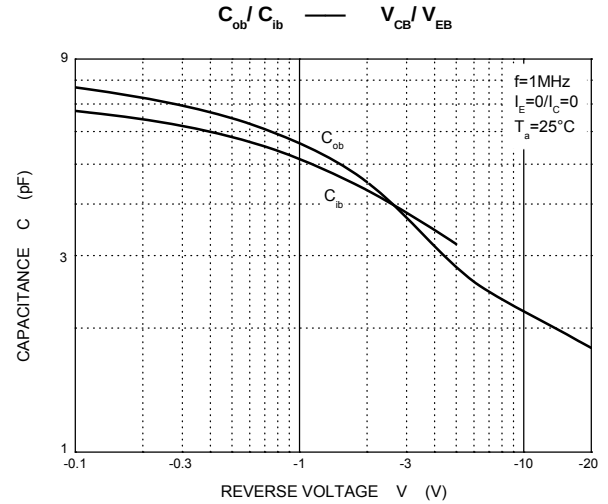
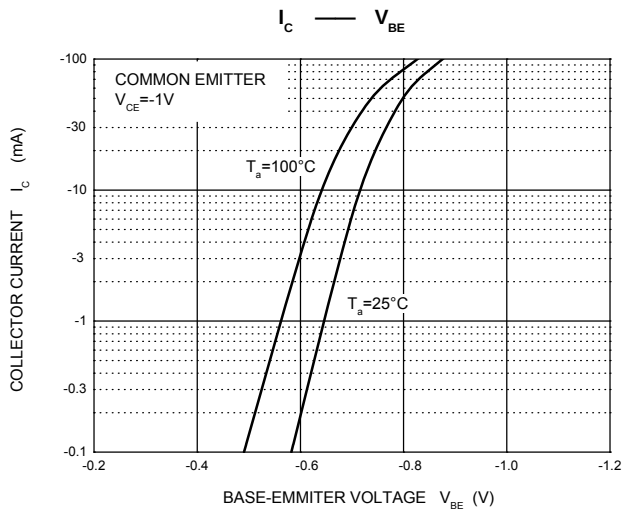
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-40	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, I_B=0$	-40	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}, I_C=0$	-5	-	V
Collector Cut-off Current	I_{CEX}	$V_{CE}=-30\text{V}, V_{EB(OFF)}=-3\text{V}$	-	-50	nA
Base Cut-off Current	I_{EBO}	$V_{EB}=-5\text{V}, I_C=0$	-	-50	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=-1\text{V}, I_C=-0.1\text{mA}$	60	-	
	$h_{FE(2)}$	$V_{CE}=-1\text{V}, I_C=-1\text{mA}$	80	-	
	$h_{FE(3)}$	$V_{CE}=-1\text{V}, I_C=-10\text{mA}$	100	300	
	$h_{FE(4)}$	$V_{CE}=-1\text{V}, I_C=-50\text{mA}$	60	-	
	$h_{FE(5)}$	$V_{CE}=-1\text{V}, I_C=-100\text{mA}$	30	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C=-10\text{mA}, I_B=-1\text{mA}$	-	-0.25	V
	$V_{CE(sat)2}$	$I_C=-50\text{mA}, I_B=-5\text{mA}$	-	-0.4	V
Base-Emitter Saturation Voltage	$V_{BE(sat)1}$	$I_C=-10\text{mA}, I_B=-1\text{mA}$	-0.65	-0.85	V
	$V_{BE(sat)2}$	$I_C=-50\text{mA}, I_B=-5\text{mA}$	-	-0.95	V
Transition Frequency	f_T	$V_{CE}=-20\text{V}, I_C=-10\text{mA}, f=100\text{MHz}$	250	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=-5\text{V}, I_E=0, f=1\text{MHz}$	-	4.5	pF
Noise Figure	NF	$V_{CE}=-5\text{V}, I_C=-0.1\text{mA}, f=1\text{KHz}, R_g=1\text{K}\Omega$	-	4	dB
Delay Time	t_d	$V_{CC}=-3\text{V}, V_{BE}=0.5\text{V}$	-	35	nS
Rise Time	t_r	$I_C=-10\text{mA}, I_{B1}=-I_{B2}=-1\text{mA}$	-	35	nS
Storage Time	t_s	$V_{CC}=-3\text{V}, I_C=-10\text{mA}$	-	225	nS
Fall Time	t_f	$I_{B1}=-I_{B2}=-1\text{mA}$	-	75	nS

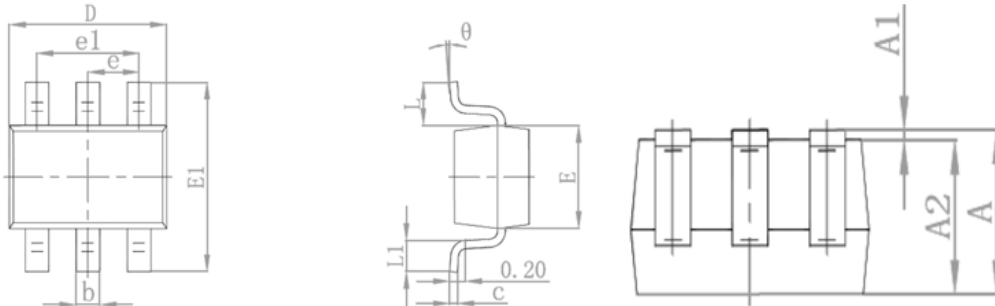
Typical Characteristics Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)



Typical Characteristics Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

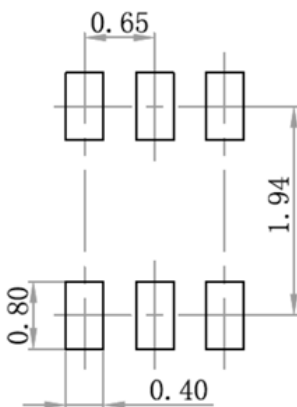


Package Outline Dimensions SOT-363



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
theta	0°	8°	0°	8°

Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purpose only

Ordering Information

Device	Package	Marking	Quantity	HSF Status
MMDT3906	SOT-363	K3N	3000pcs / Reel	RoHS Compliant