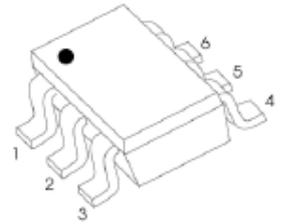


Features

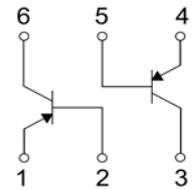
- Ideal for medium power amplification and switching
- Plastic-Encapsulate transistor
- Complementary NPN type available MMDT2222A



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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CB0}	-60	V
Collector-Emitter Voltage	V_{CE0}	-60	V
Emitter-Base Voltage	V_{EB0}	-5	V
Collector Current - Continuous	I_C	-600	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}\text{C}$

SOT-363

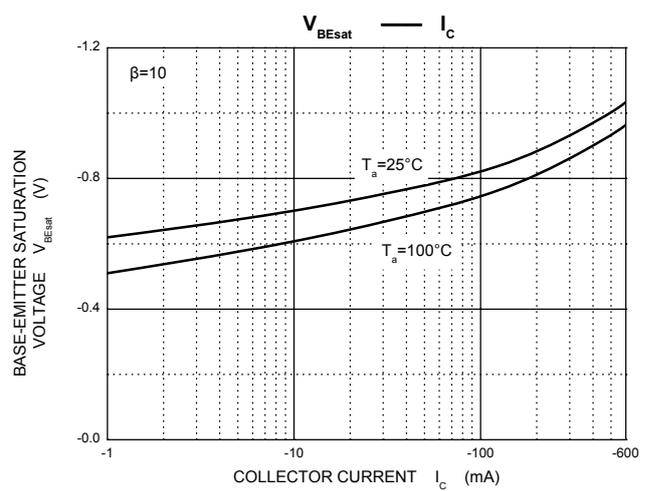
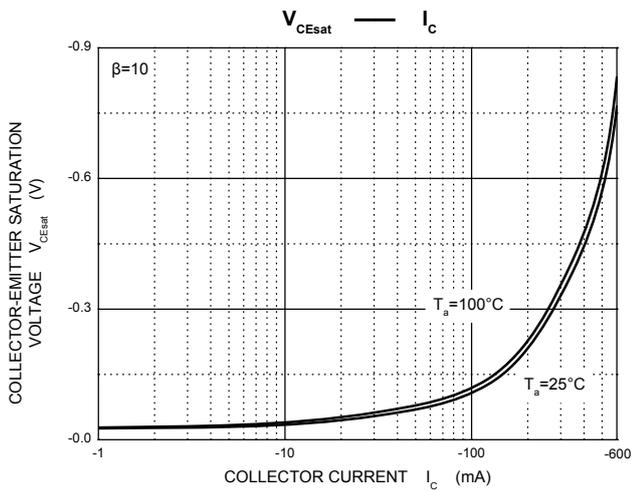
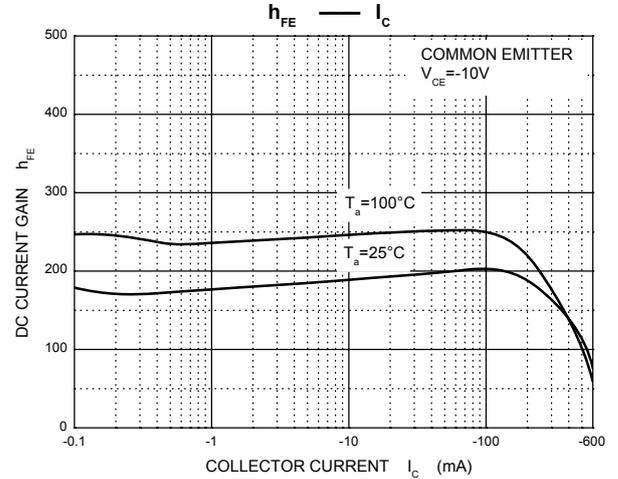
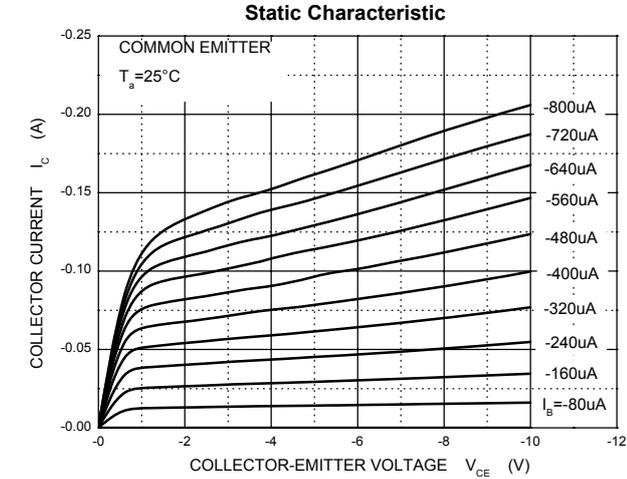


Schematic Diagram

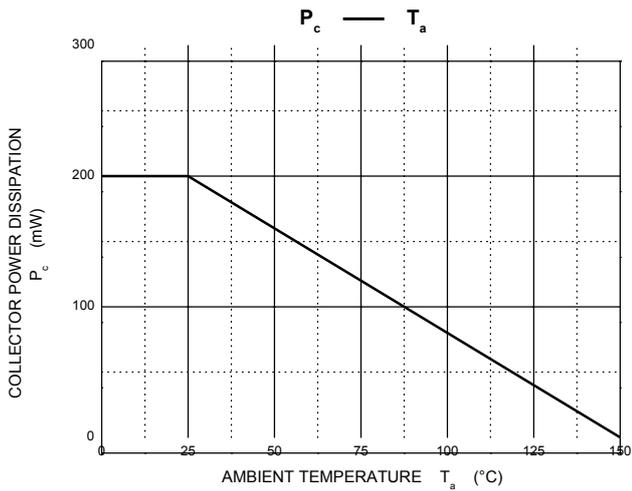
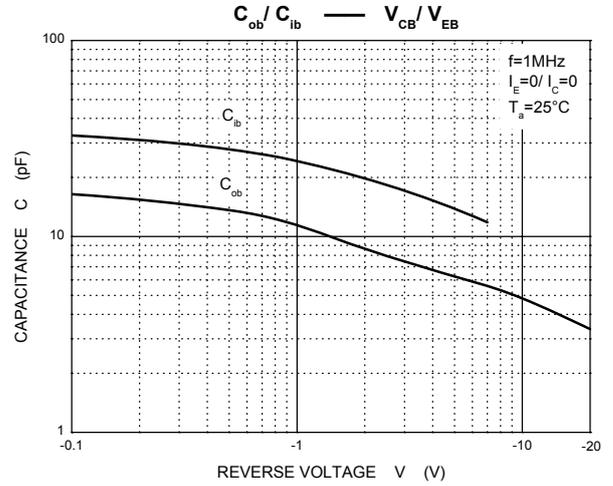
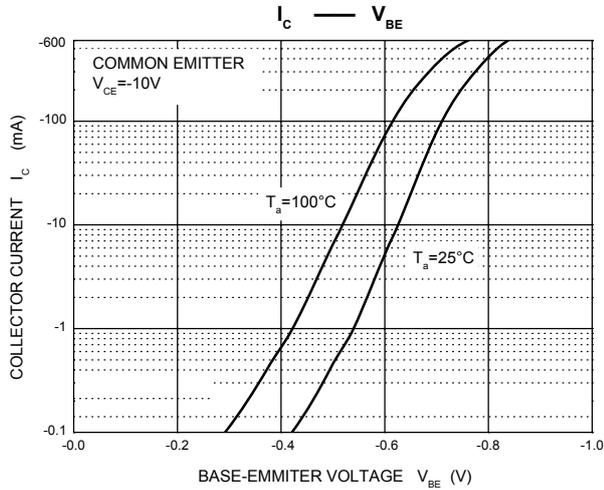
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CB0}$	$I_C = -10\mu\text{A}, I_E = 0$	-60	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CE0}$	$I_C = -10\text{mA}, I_B = 0$	-60	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EB0}$	$I_E = -10\mu\text{A}, I_C = 0$	-5	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -50\text{V}, I_E = 0$	-	-10	nA
Collector Cut-off Current	I_{CEX}	$V_{CE} = -30\text{V}, V_{EB(off)} = -0.5\text{V}$	-	-50	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$	-	-10	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE} = -10\text{V}, I_C = -0.1\text{mA}$	75	-	
	$h_{FE(2)}$	$V_{CE} = -10\text{V}, I_C = -1\text{mA}$	100	-	
	$h_{FE(3)}$	$V_{CE} = -10\text{V}, I_C = -10\text{mA}$	100	-	
	$h_{FE(4)}$	$V_{CE} = -10\text{V}, I_C = -150\text{mA}$	100	300	
	$h_{FE(5)}$	$V_{CE} = -10\text{V}, I_C = -500\text{mA}$	50	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = -150\text{mA}, I_B = -15\text{mA}$	-	-0.4	V
	$V_{CE(sat)2}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$	-	-1.6	V
Base-Emitter Saturation Voltage	$V_{BE(sat)1}$	$I_C = -150\text{mA}, I_B = -15\text{mA}$	-	-1.3	V
	$V_{BE(sat)2}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$	-	-2.6	V
Transition Frequency	f_T	$V_{CE} = -20\text{V}, I_C = -50\text{mA}, f = 100\text{MHz}$	200	-	MHz
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$	-	8	pF
Input Capacitance	C_{ib}	$V_{EB} = -2\text{V}, I_C = 0, f = 1\text{MHz}$	-	30	pF
Delay Time	t_d	$V_{CC} = -30\text{V}, I_C = -150\text{mA}, I_{B1} = -15\text{mA}$	-	10	nS
Rise Time	t_r		-	40	nS
Storage Time	t_s	$V_{CC} = -6\text{V}, I_C = -150\text{mA}, I_{B1} = I_{B2} = -15\text{mA}$	-	225	nS
Fall Time	t_f		-	60	nS

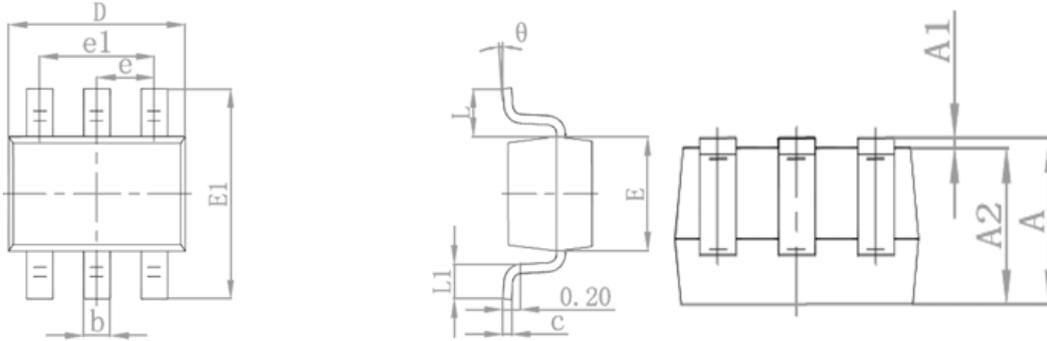
Typical Characteristics Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)



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

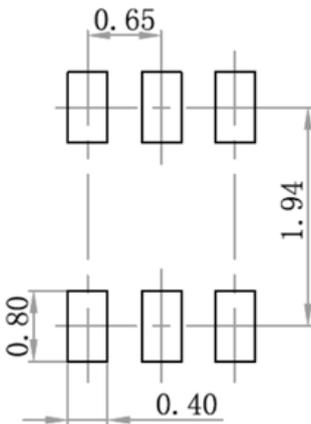


Package Outline Dimensions SOT-363



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
θ	0°	8°	0°	8°

Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters
2. General tolerance: ±0.05mm
3. The pad layout is for reference purpose only

Ordering Information

Device	Package	Marking	Quantity	HSF Status
MMDT2907A	SOT-363	K2F	3000pcs / Reel	RoHS Compliant