

SOT-363 Plastic-Encapsulate Transistors

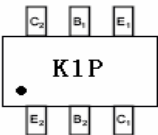
MMDT2222A

DUAL TRANSISTOR (NPN+NPN)

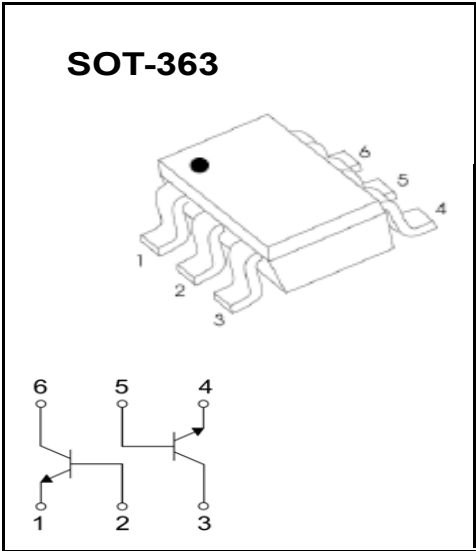
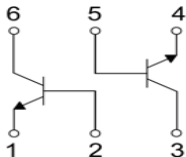
FEATURES

- Complementary PNP Type available MMDT2907A

MARKING



Equivalent Circuit



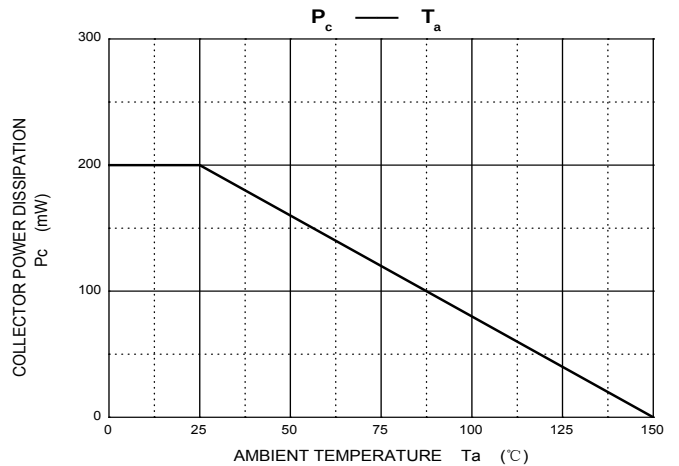
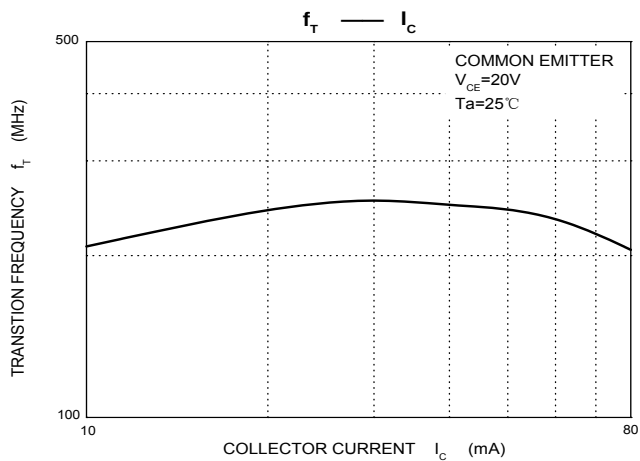
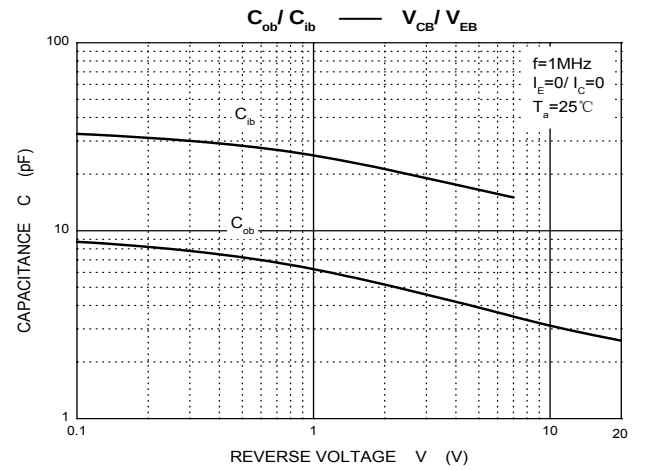
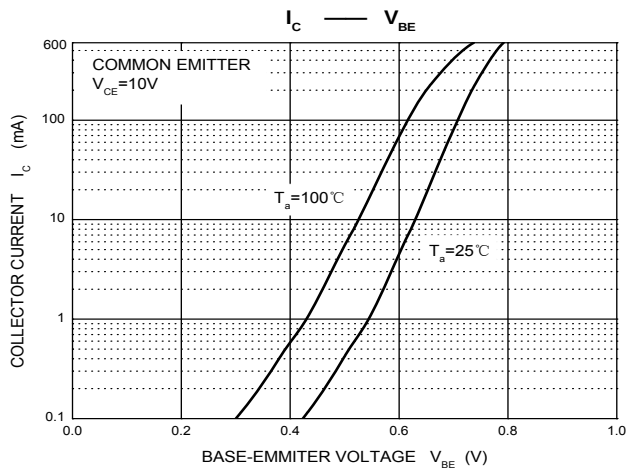
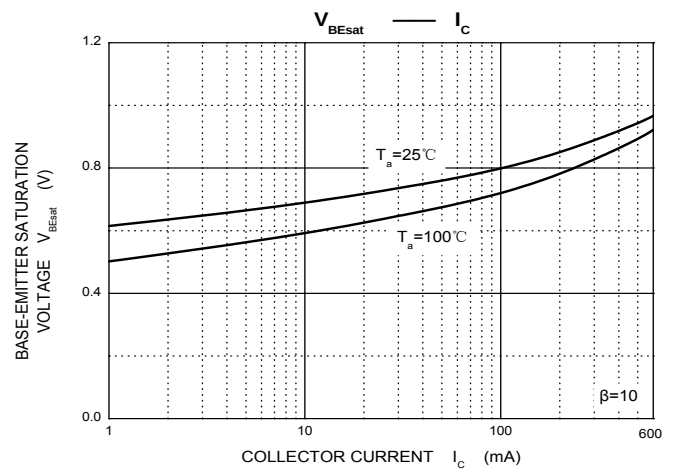
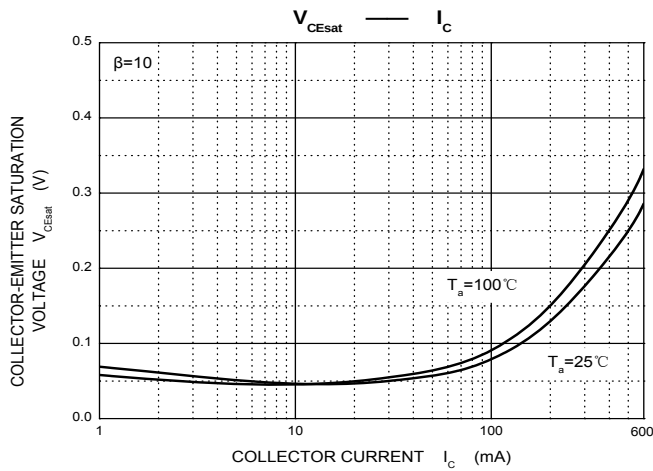
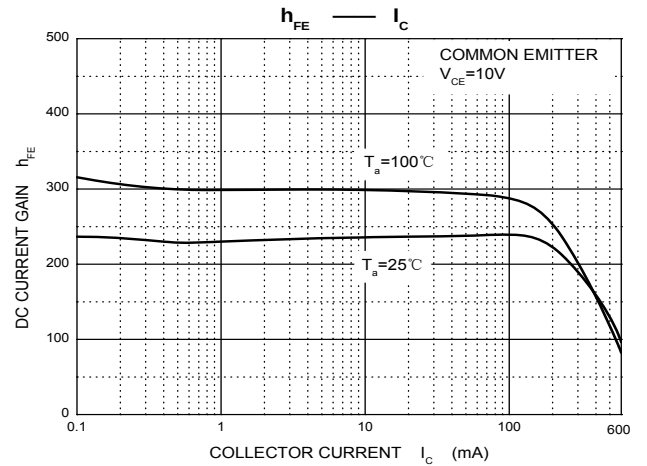
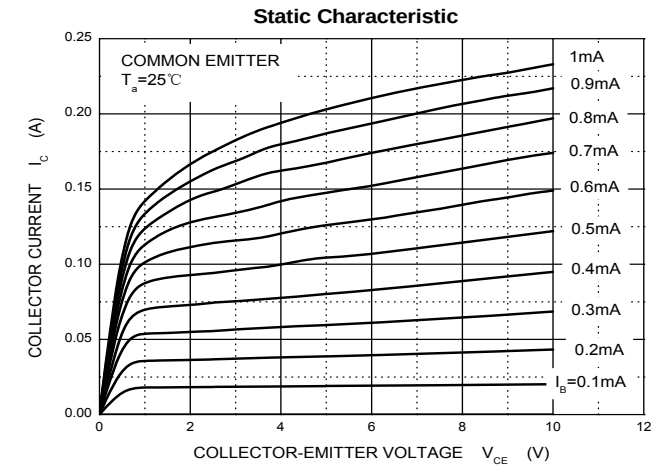
MAXIMUM RATINGS (Ta=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage	75	V
V _{CEO}	Collector-Emitter Voltage	40	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current -Continuous	600	mA
P _C	Collector Power Dissipation	200	mW
T _J ,T _{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

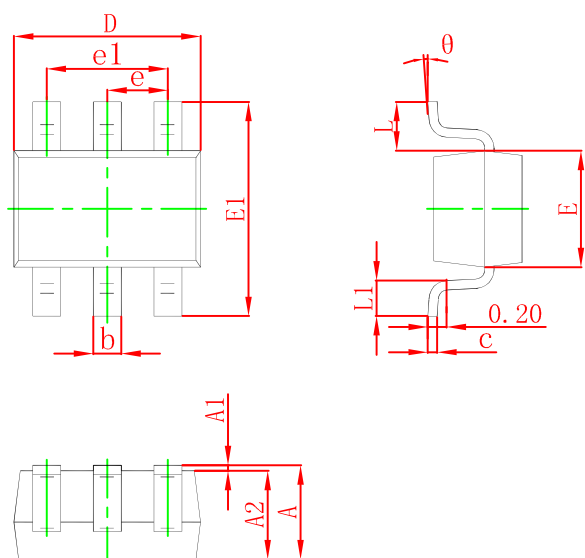
ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = 10μA, I _E =0	75		V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C = 10mA, I _B =0	40		V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =10μA, I _C =0	6		V
Collector cut-off current	I _{CBO}	V _{CB} = 60V, I _E =0		10	nA
Collector cut-off current	I _{CEX}	V _{CE} =60V, V _{EB(off)} =3V		10	nA
Emitter cut-off current	I _{EBO}	V _{EB} = 3 V, I _C =0		10	nA
DC current gain	h _{FE(1)}	V _{CE} =10V, I _C = 0.1mA	35		
	h _{FE(2)}	V _{CE} =10V, I _C = 1mA	50		
	h _{FE(3)}	V _{CE} =10V, I _C = 10mA	75		
	h _{FE(4)}	V _{CE} =10V, I _C = 150mA	100	300	
	h _{FE(5)}	V _{CE} =10V, I _C = 500mA	40		
	h _{FE(6)}	V _{CE} =1V, I _C = 150mA	35		
Collector-emitter saturation voltage	V _{CE(sat)1}	I _C =150mA, I _B = 15mA		0.3	V
	V _{CE(sat)2}	I _C =500mA, I _B = 50mA		1	V
Base-emitter saturation voltage	V _{BE(sat)1}	I _C =150mA, I _B =15mA	0.6	1.2	V
	V _{BE(sat)2}	I _C =500mA, I _B = 50mA		2	V
Transition frequency	f _T	V _{CE} =20V, I _C = 20mA, f=100MHz	300		MHz
Output Capacitance	C _{ob}	V _{CB} =10V, I _E =0,f=1MHz		8	pF
Input Capacitance	C _{ib}	V _{EB} =0.5V,I _C = 0,f=1MHz		25	pF
Noise Figure	NF	V _{CE} =10V, I _C =100μA, f=1KHz,R _s =1KΩ		4	dB

Typical Characteristics

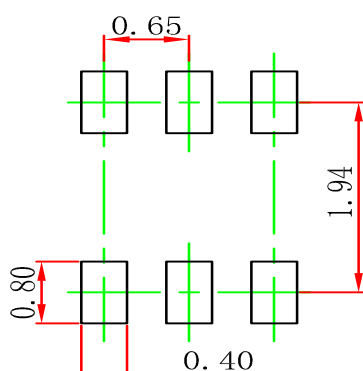


Package Outline Dimensions (SOT-363)



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 (SOT-363)



Note:

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