



Features

Epitaxial planar die construction.
Ideal for low power amplification and switching.



Pin 1
SOT-363
C1 B2 E2
E1 B1 C2

Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MBT3904DW1T1G	SOT-363	K6N	3000

Maximum Ratings (Ta=25°C unless otherwise noted)

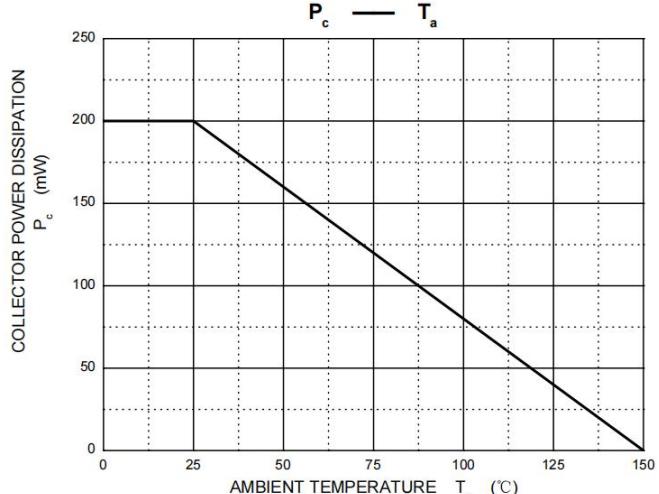
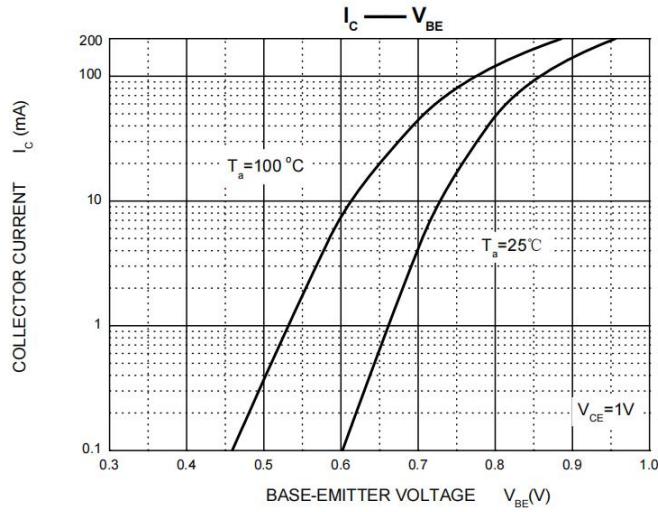
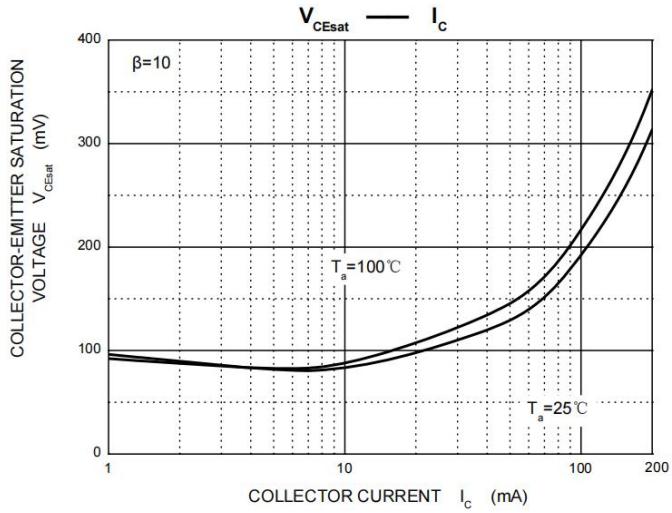
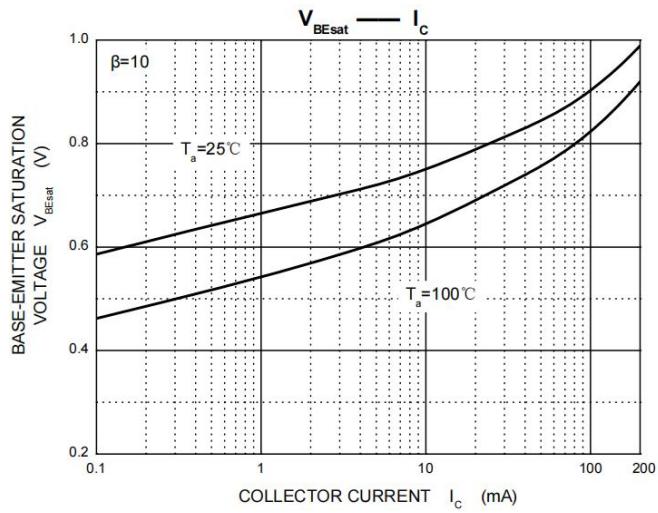
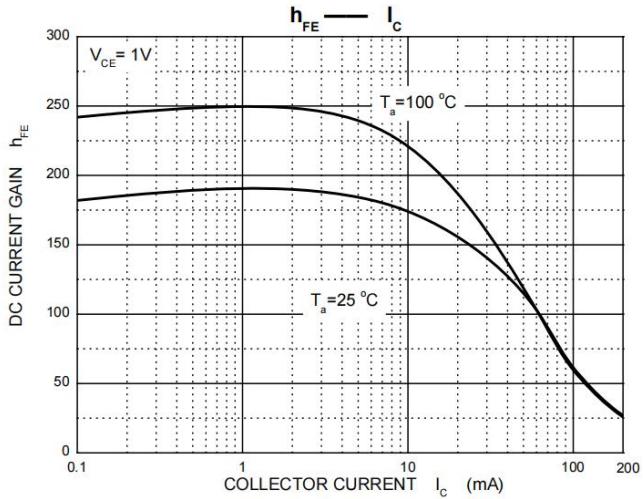
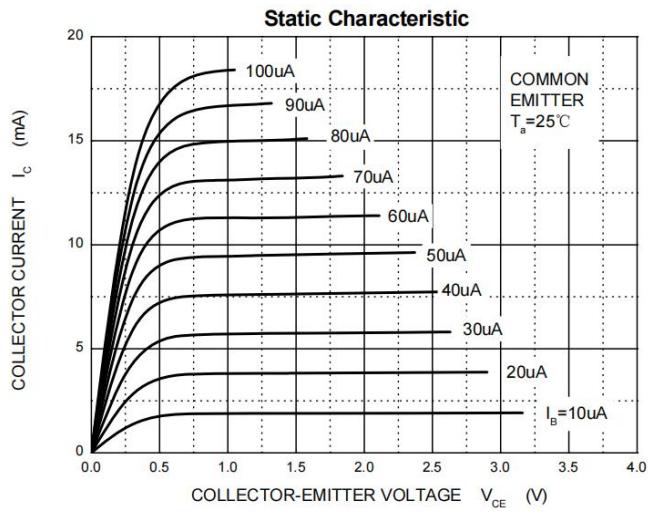
Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	60	V
V _{CEO}	Collector-Emitter Voltage	40	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current	200	mA
P _C	Collector Power Dissipation	200	mW
R _{ΘJA}	Thermal Resistance From Junction To Ambient	625	°C/W
T _J , T _{stg}	Operation Junction And Storage Temperature Range	-55~+150	°C

Electrical Characteristics (Ta=25°C unless otherwise noted)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
V _{(BR)CBO}	Collector-base breakdown voltage	I _C =10μA, I _E =0	60			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 =10μA, I _C =0	6			V
I _{CEX}	Collector cut-off current	V _{CE} =30V, V _{EB(off)} =3V			50	nA
I _{CBO}	Collector cut-off current	V _{CB} =30V, I _E =0			50	nA
I _{EBO}	Emitter cut-off current	V _{EB} =5V, I _C =0			50	nA
h _{FE(1)}	DC current gain(1)	V _{CE} =1V, I _C =100μA	40			
h _{FE(2)}	DC current gain(2)	V _{CE} =1V, I _C =1mA	70			
h _{FE(3)}	DC current gain(3)	V _{CE} =1V, I _C =10mA	100		300	
h _{FE(4)}	DC current gain(4)	V _{CE} =1V, I _C =50mA	60			
h _{FE(5)}	DC current gain(5)	V _{CE} =1V, I _C =100mA	30			
V _{CE(sat)}	Collector-emitter saturation voltage	I _C =10mA, I _B =1mA			0.2	V
		I _C =50mA, I _B =5mA			0.3	V
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	V
f _T	Transition frequency	V _{CE} =20V, I _C =10mA, f=100MHz	300			MHz
C _{ob}	Collector output capacitance	V _{CB} =5V, I _E =0, f=1MHz			4	pF
NF	Noise figure	V _{CE} =5V, I _C =0.1mA, f=1kHz, R _g =1KΩ			5	dB
t _d	Delay time	V _{CC} =3V, V _{BE(off)} =0.5V, I _C =10mA, I _{B1} =I _{B2} =1mA			35	ns
t _r	Rise time				35	ns
t _s	Storage time	V _{CC} =3V, I _C =10mA, I _{B1} =I _{B2} =1mA			200	ns
t _f	Fall time				50	ns

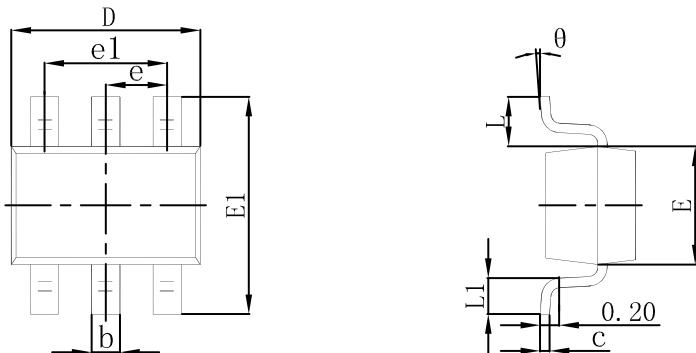


Typical Characteristics



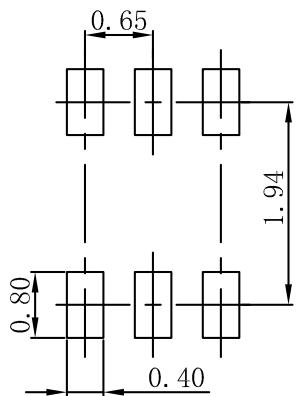


SOT-363 Package Outline Dimensions



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°

SOT-363 Suggested Pad Layout



Note:

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



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