

SOT-363 Plastic-Encapsulate Transistors

■ MMDT3904 (DUAL TRANSISTOR) (NPN+NPN)

■ FEATURES

Epitaxial planar die construction

Ideal for low power amplification and switching

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

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	40	
V_{EBO}	Emitter-Base Voltage	5	
I_C	Collector Current -Continuous	0.2	A
P_C	Collector Power Dissipation	0.2	W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

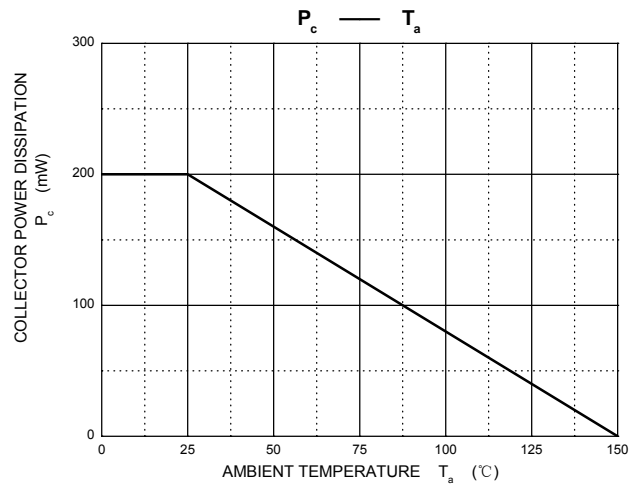
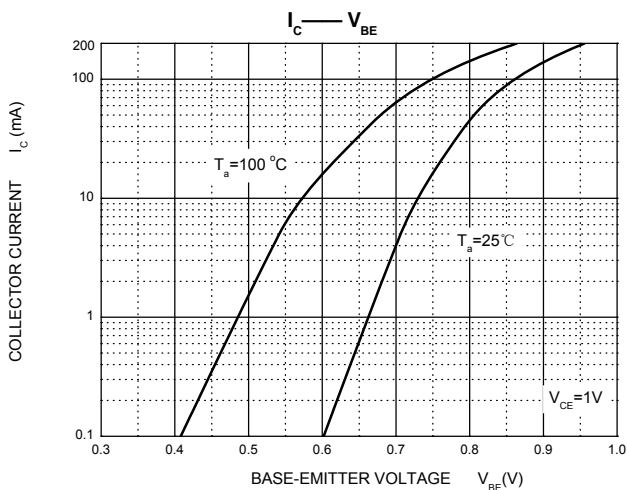
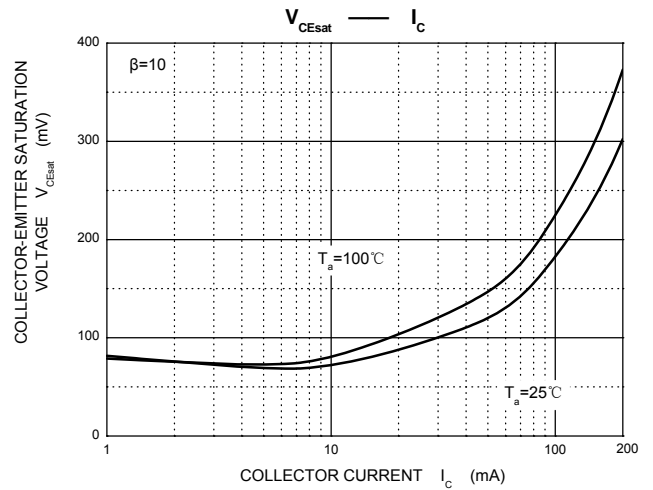
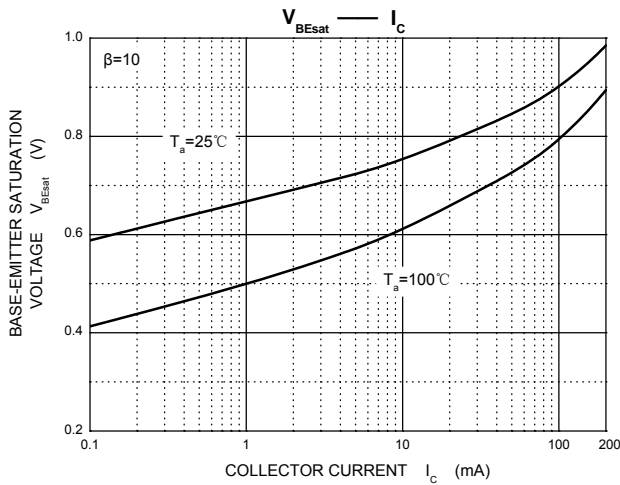
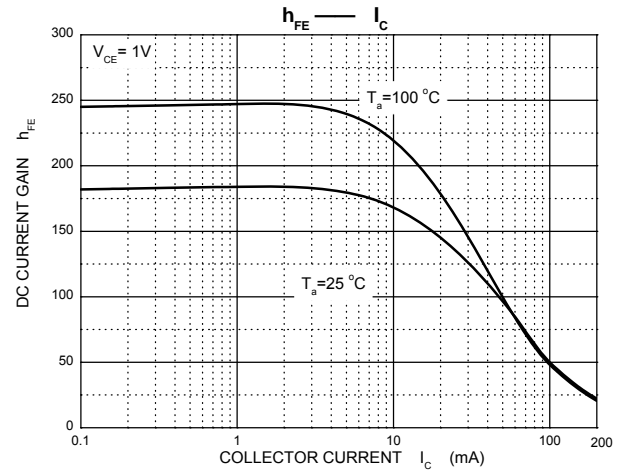
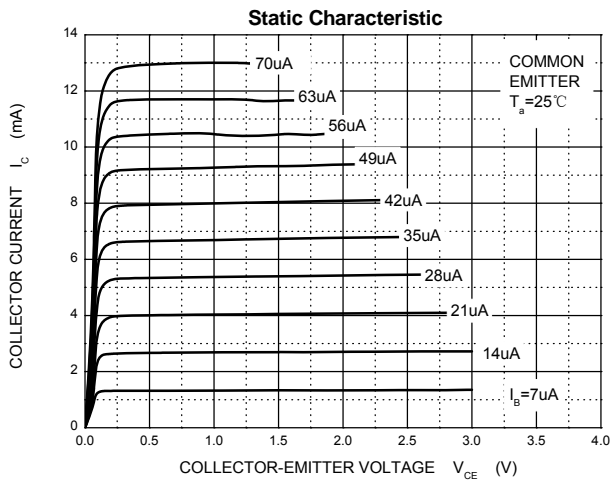
Pin arrangement	Corresponding polarity	Marking

工业型号	公司型号	封装形式	包装规格
MMDT3904	HMDT3904	SOT-363	3000Pcs/卷盘, 45000Pcs/盒, 180Kpcs/箱

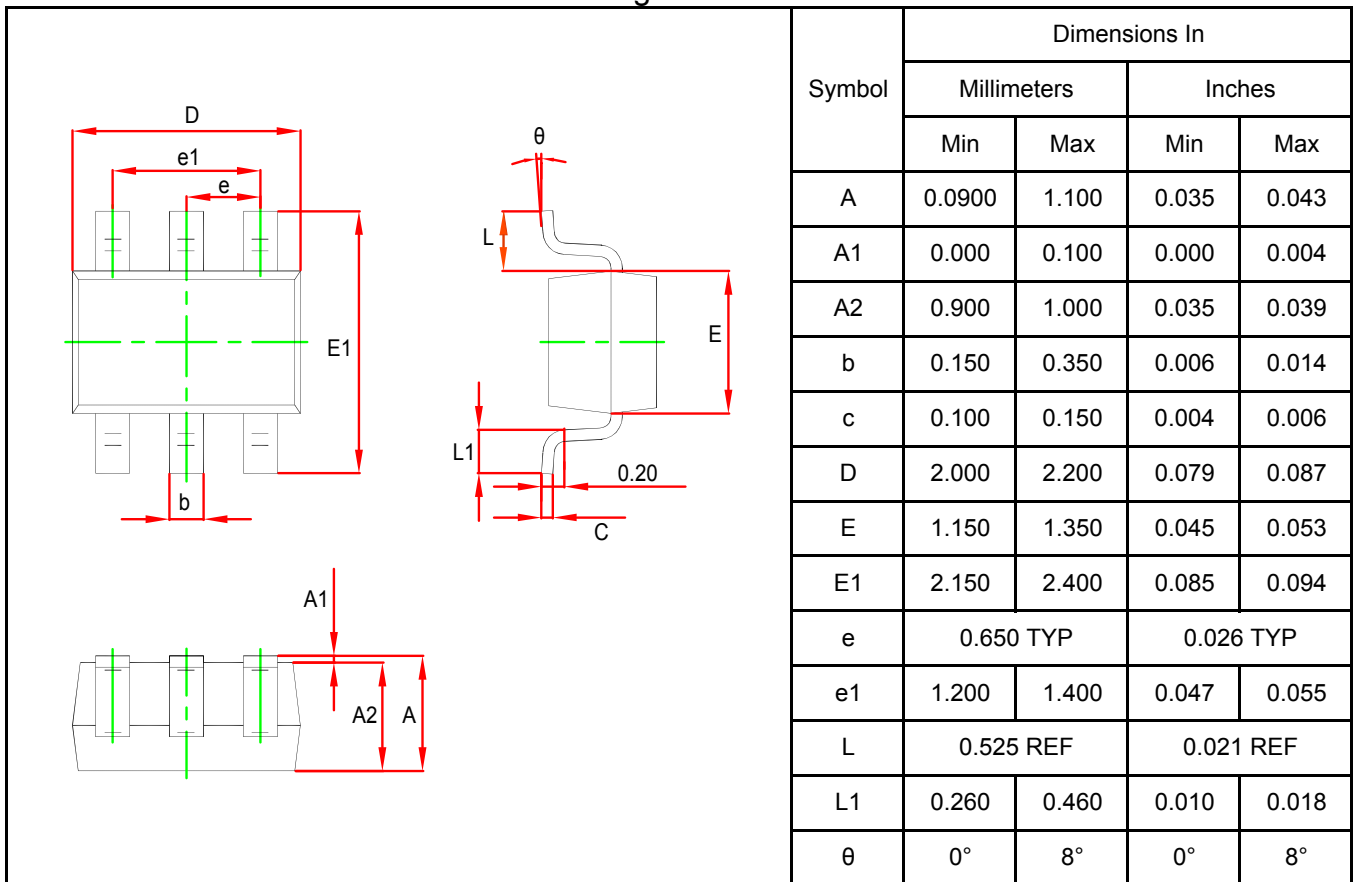
ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	40			
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	5			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C=10mA, I_B=1mA$			0.2	
	$V_{CE(sat)2}$	$I_C=50mA, I_B=5mA$			0.3	
Base-emitter saturation voltage	$V_{BE(sat)1}$	$I_C=10mA, I_B=1mA$	0.65		0.85	
	$V_{BE(sat)2}$	$I_C=50mA, I_B=5mA$			0.95	
Collector cut-off current	I_{CBO}	$V_{CB}=30V, I_E=0$			0.05	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			0.05	
Collector cut-off current	I_{CEX}	$V_{CE}=30V, V_{BE(off)}=3V$			0.05	
DC current gain	$h_{FE(1)}$	$V_{CE}=1V, I_C=0.1mA$	40			
	$h_{FE(2)}$	$V_{CE}=1V, I_C=1mA$	70			
	$h_{FE(3)}$	$V_{CE}=1V, I_C=10mA$	100		300	
	$h_{FE(4)}$	$V_{CE}=1V, I_C=50mA$	60			
	$h_{FE(5)}$	$V_{CE}=1V, I_C=100mA$	30			
Transition frequency	f_T	$V_{CE}=20V, I_C=10mA, f=100MHz$	300			MHz
Collector output capacitance	C_{ob}	$V_{CB}=5V, I_E=0, f=1MHz$			4	pF
Noise figure	NF	$V_{CE}=5V, I_C=0.1mA, f=1kHz, R_S=1K\Omega$			5	dB
Delay time	t_d	$V_{CC}=3V, V_{BE(off)}=-0.5V$ $I_C=10mA, I_{B1}=-I_{B2}=1mA$			35	nS
Rise time	t_r				35	
Storage time	t_s				200	
Fall time	t_f				50	

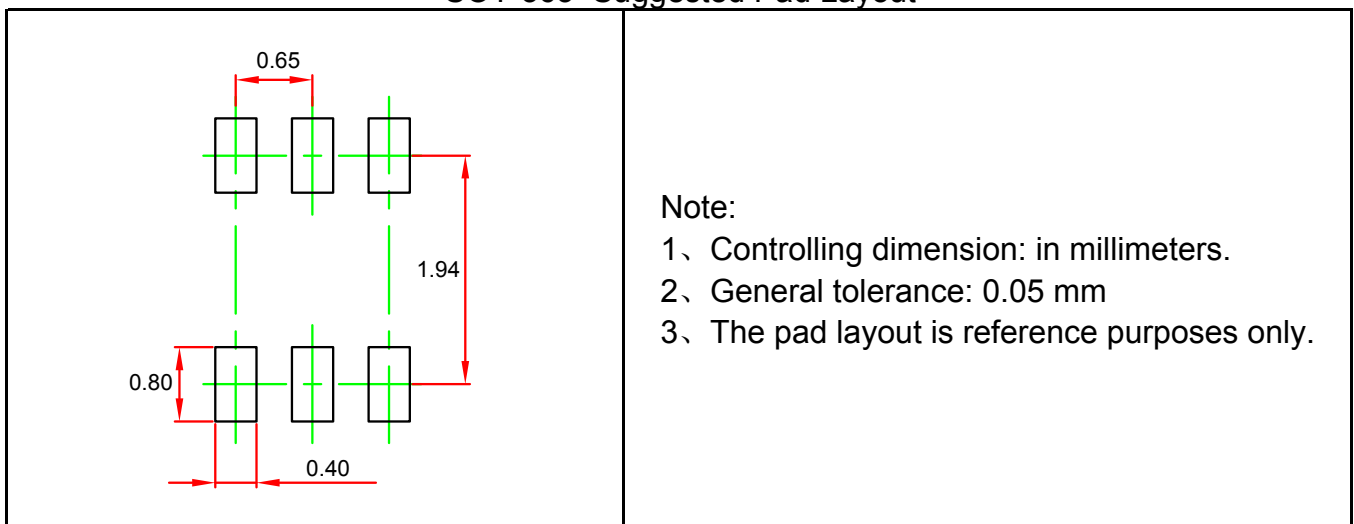
Typical Characteristics



SOT-363 Package Outline Dimensions



SOT-363 Suggested Pad Layout



NOTICE

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SOT-363 Tape and Reel

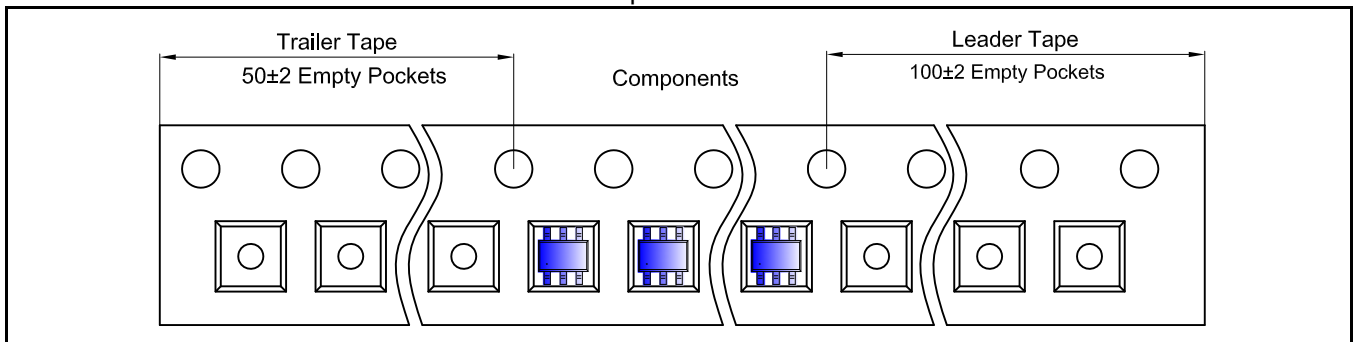
SOT-363 Embossed Carrier Tape

Package Description:
 SOT-363 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Aahhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8 cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated) .

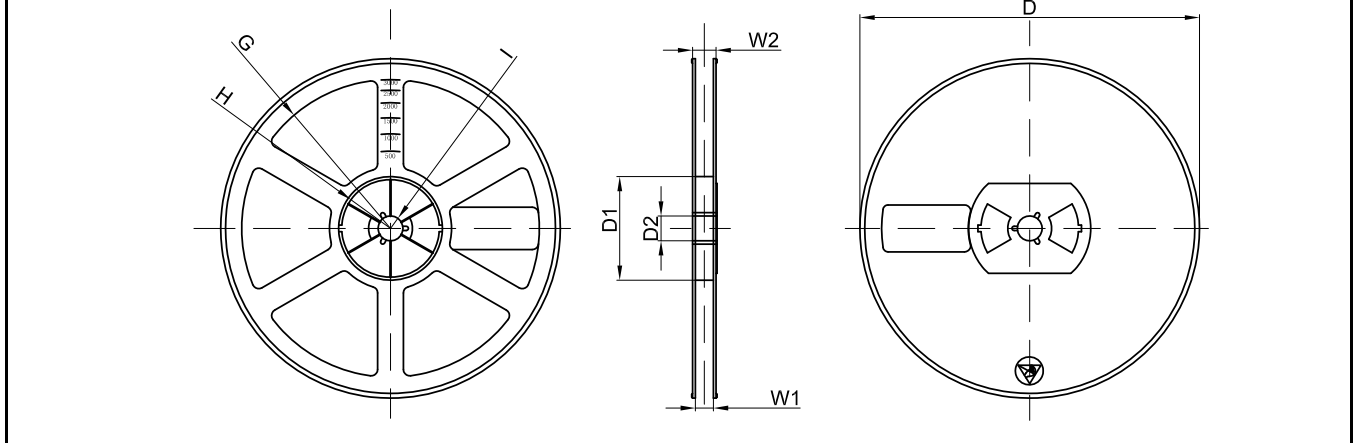
Dimensions are in millimeter

Pkg Type	a	B	C	d	E	F	P0	P	P1	W
SOT-363	2.25	2.55	1.20	Φ1.55	1.75	3.50	4.00	4.00	2.00	8.00

SOT-363 Tape Leader and Trailer



SOT-363 Reel



Dimensions are in millimeter

Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dis	Φ178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

Reel	Reel Size	BOX	BOX Size (mm)	Cartin	Carton Size (mm)	G.W. (Kg)
3000 Pcs	7 inch	45,000 Pcs	203×203×195	180,000 Pcs	438×438×220	



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深圳市浩海电子有限公司

SHENZHEN HAOHAI ELECTRONICS CO., LTD.

2 floor(whole floor), BAOXIN Building. 0 Lane on the 8th. Yufeng Garden.
82 District. BAOAN District, Shenzhen City, Guangdong Province, China.

TEL: +86-755-29955080、29955081、29955082、29955083

FAX: +86-755-27801767

E-mail: kkg@kkg.com.cn

<http://www.szhhe.com>

<http://www.kkg.com.cn>