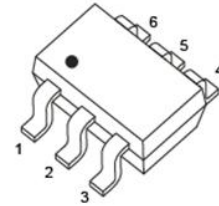


General Characteristics

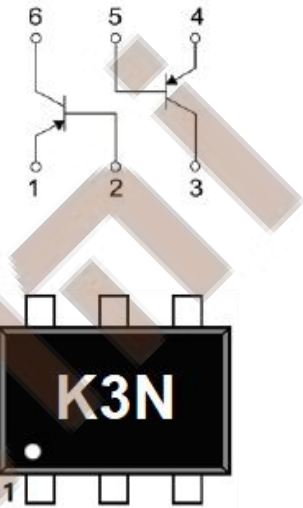
VCEO	IC	VCE(sat)	fT	Tjmax
-40V	-200mA	-0.25V@IC=-10mA	250MHz	150℃
		-0.4V@IC=-50mA		



Features

- SOT363 Package
- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 3
- High temperature soldering guaranteed 260℃/10seconds

at terminals



Package Marking and Ordering Information

Product ID	Package	Marking	Qty(PCS)
MMDT3906	SOT-363	K3N	3000

Maximum Ratings & Thermal Characteristics (Ratings at 25℃ ambient temperature unless otherwise specified.)

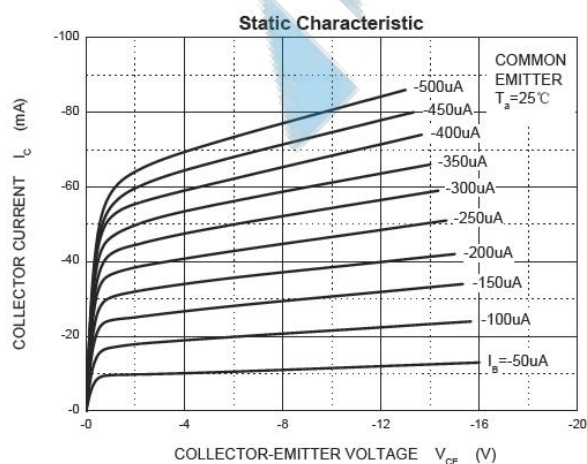
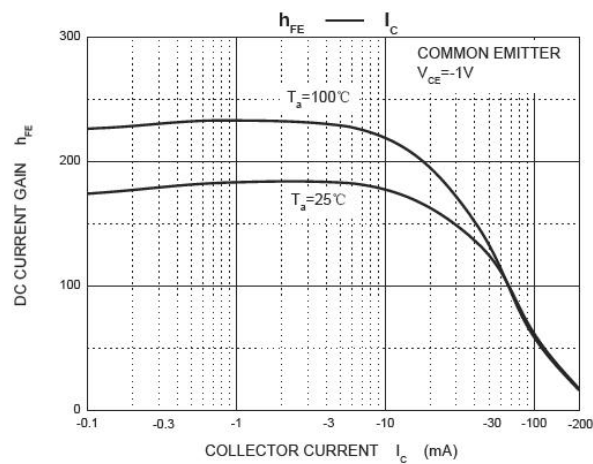
Parameters	Symbol	Value	Unit
Collector-Base Voltage	VCBO	-40	V
Collector-Emitter Voltage	VCEO	-40	V
Emitter -Base Voltage	VEBO	-5	V
Collector Current-Continuous	IC	-200	mA
Collector Power Dissipation	PC	200	mW
Junction Temperature	Tj	150	℃
Storage Temperature	Tstg	-55-+150	℃
Thermal resistance From junction to ambient	RθJA	625	℃/W

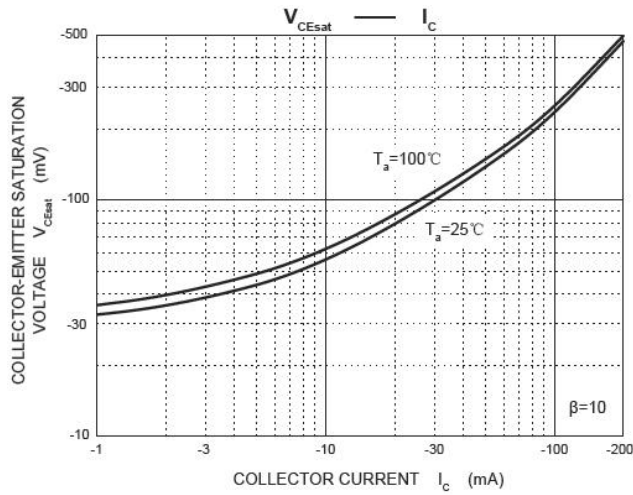
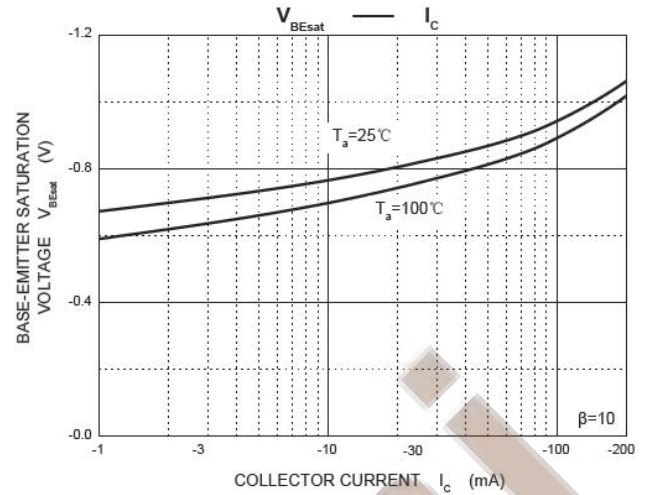
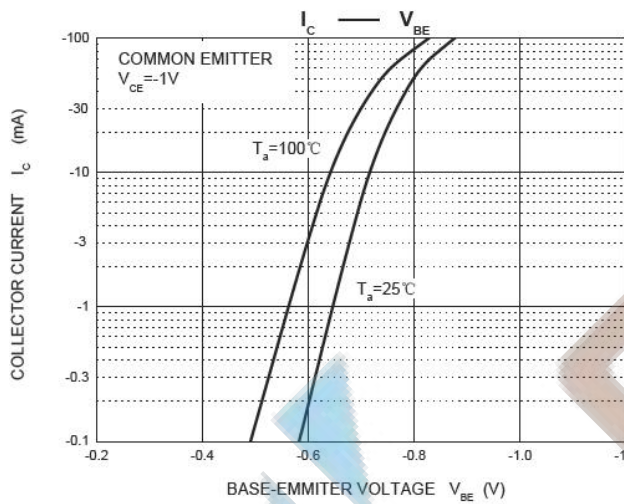
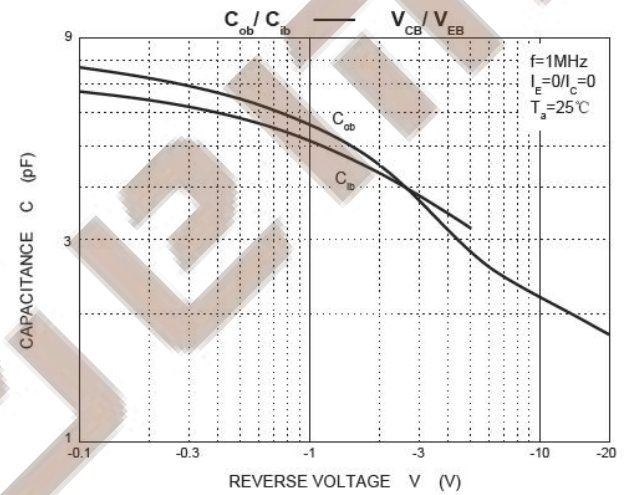
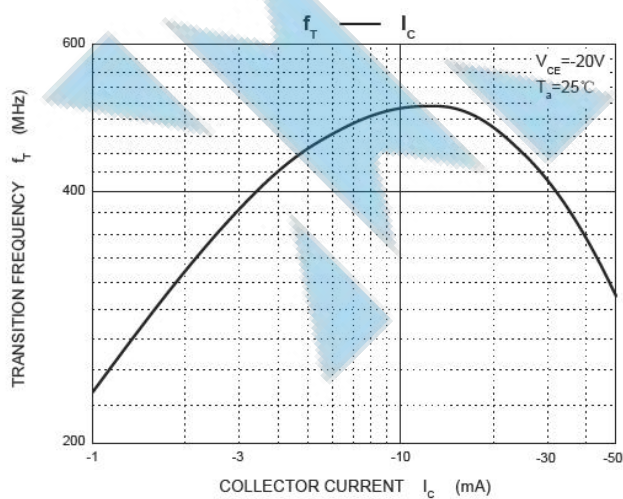
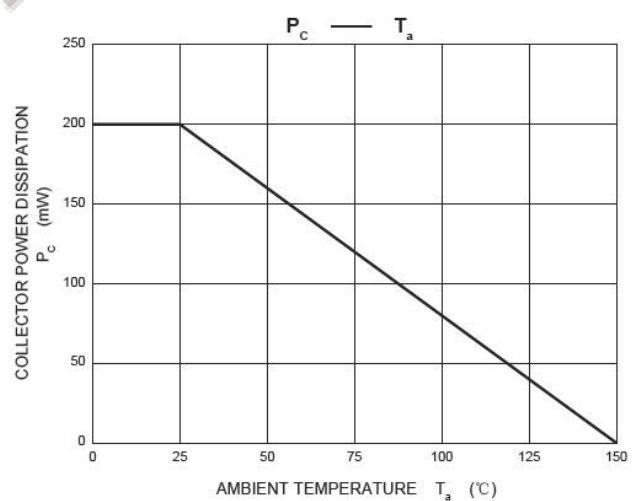
Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified).

Parameter	Symbols	Test Condition	Limits		Unit
			Min	Max	
Collector-base breakdown voltage	V(BR)CBO	IC=-10uA, IE=0	-40		V
Collector-emitter breakdown voltage	V(BR)CEO	IC=-1mA, IB=0	-40		V
Emitter-base breakdown voltage	V(BR)EBO	IE=-10uA, IC=0	-5		V
Collector cut-off current	ICBO	VCB=-40V, IE=0		-100	nA
Collector cut-off current	ICEX	VCE=-30V, VEB(off)=-3V		-50	nA
Base cut-off current	IEBO	VEB=-5V, IC=0		-50	nA
DC current gain	hFE(1)	VCE=-1V, IC=-0.1mA	60		
	hFE(2)	VCE=-1V, IC=-1mA	80		
	hFE(3)	VCE=-1V, IC=-10mA	100	300	
	hFE(4)	VCE=-1V, IC=-50mA	60		
	hFE(5)	VCE=-1V, IC=-100mA	30		
Collector-emitter saturation voltage	VCE(sat)	IC=-10mA, IB=-1mA		-0.25	V
		IC=-50mA, IB=-5mA		-0.40	V
Base -emitter saturation voltage	VBE(sat)	IC=-10mA, IB=-1mA	-0.65	-0.85	V
		IC=-50mA, IB=-5mA		-0.95	V
Transition frequency	fT	VCE=-20V, IC=-10mA, f=100MHz	250		MHz
Collector output capacitance	Cob	VCB=-5V, IE=0, f=1MHz		4.5	pF
Noise figure	NF	VEB=-5V, IE=0, f=1MHz		4	dB
Delay time	td	VCC=-3V, VBE(off)=-0.5V, IC=-10mA, IB1=-1mA		35	nS
Rise time	tr			35	nS
Storage time	ts	VCC=-3V, IC=-10mA, IB1=IB2=-1mA		225	nS
Fall time	tf			75	nS

*Pulse test: pulse width≤300us,duty cycle≤2.0%

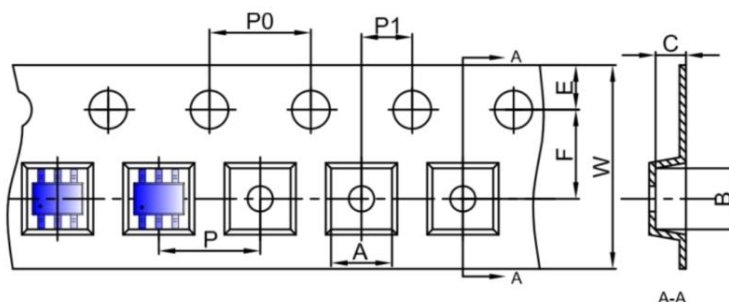
Typical characteristics





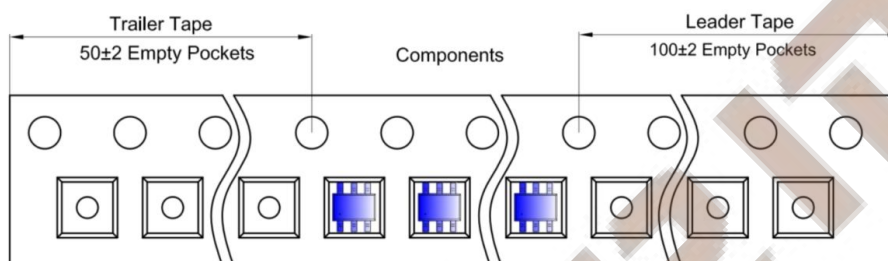
Package Information

Carrier Dimension(mm)

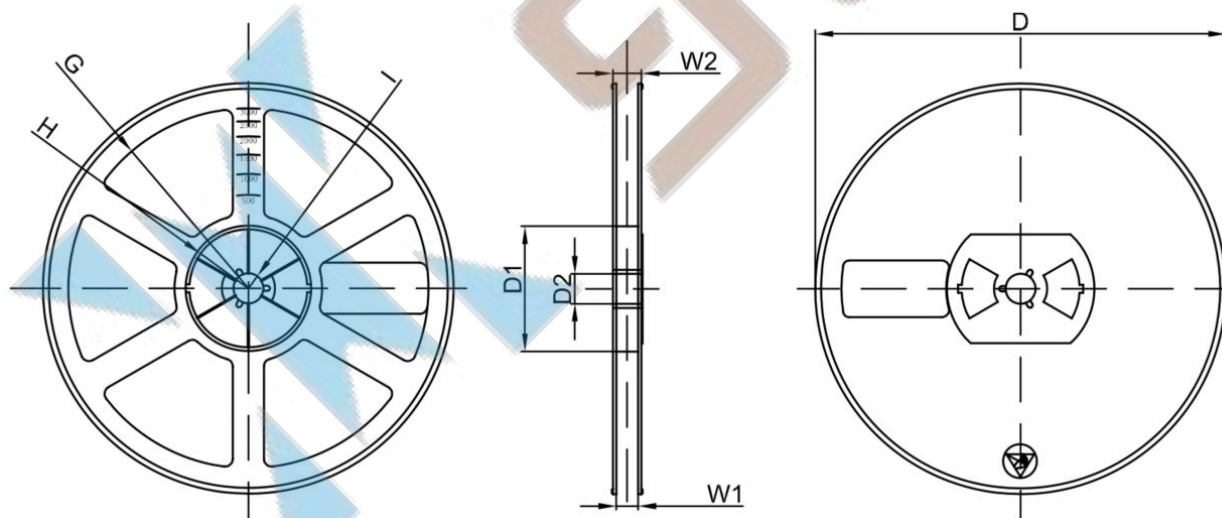


Dimensions are in millimeter

Pkg Type	A	B	C	d	E	F	P0	P	P1	W
SOT-363	2.25	2.55	1.20	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00



Reel Dimension(mm)



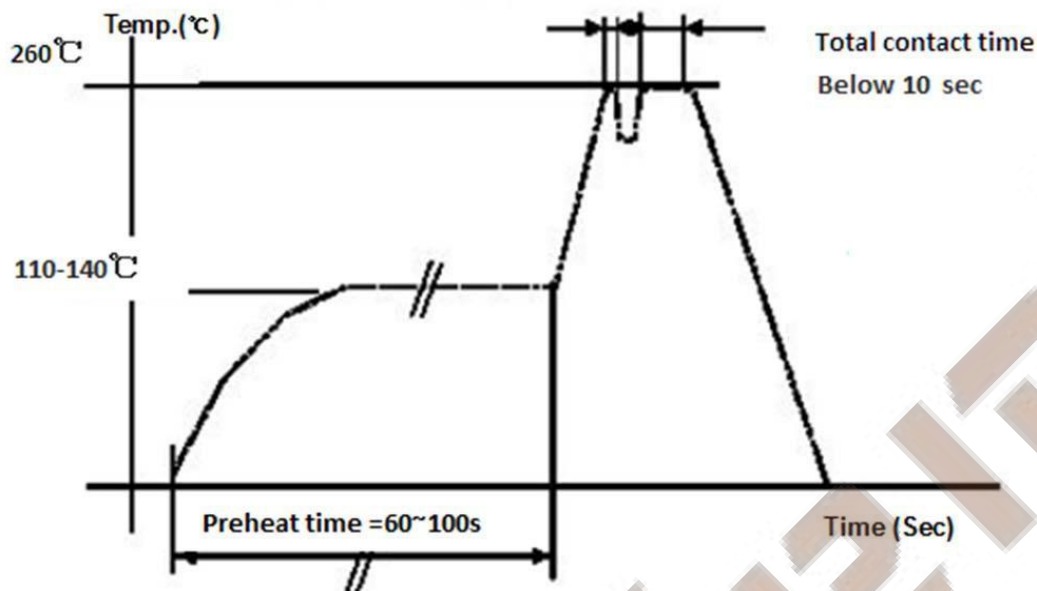
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Φ178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	±2	±1	±1	±1	±1	±1	±1	±1

Package Specifications

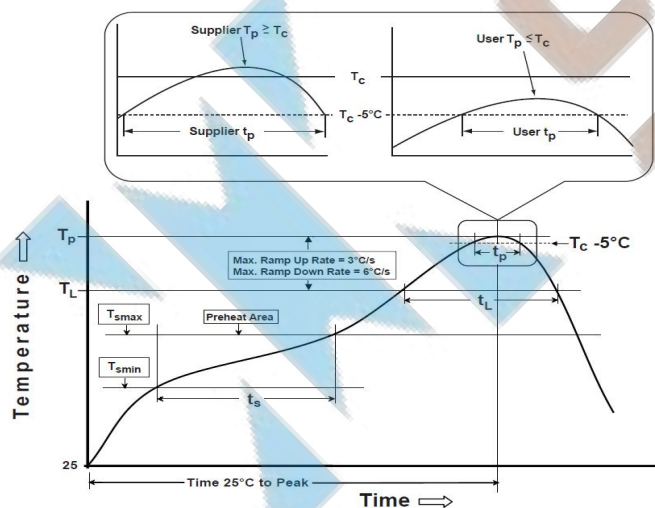
Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SOT363	7'	178	3	210*208*203	45	440*400*230	180

Recommended Soldering Profile for Rectifier Diodes (Pb Free)

a) Wave Soldering Profile



b) Reflow Soldering Profile (Pb Free Application), refer to IPC/JEDEC J-STD-020

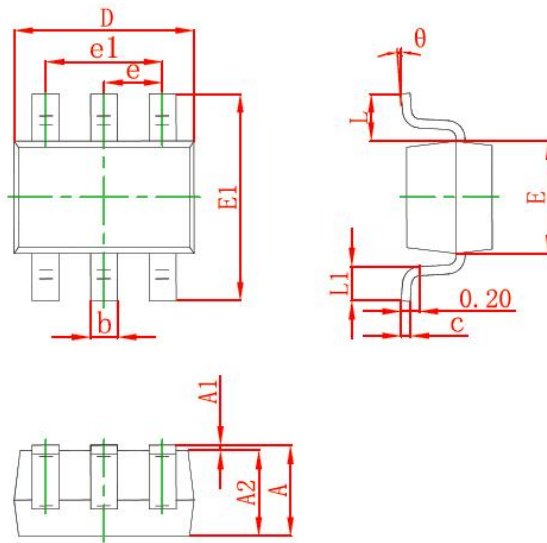


Preheat/Soak Temperature Min (T _{min}) Temperature Max (T _{max}) Time (ts) from (T _{min} to T _{max})	50 °C 200 °C 60-120 seconds
Melting Point of Solder (Sn Ag Cu)	217°C
Ramp-up Rate to 217°C (Melting Point of Solder)	3°C/sec
Time at Temp. > 217°C (Melting Point of Solder)	60~150 Sec
Peak Temperature	255±5°C
Time within 5°C below Peak Temp.	20~40 Sec
Cooling Rate	6°C/sec (max)
Time from 25°C to Peak Temp.	8min (max)

c) Manual Soldering

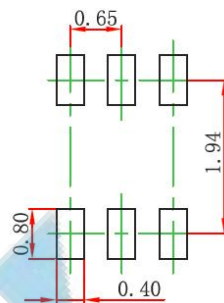
When using an electric soldering iron for manual soldering, it is recommended that the temperature does not exceed 300°C and the soldering time is less than 10 seconds.

Package Mechanical Data



Symbol	Dimensions In Millimeters	
	Min	Max
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.100	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.400
e	0.650 TYP	
e1	1.200	1.400
L	0.525 REF	
L1	0.260	0.460
θ	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 purposes only.

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