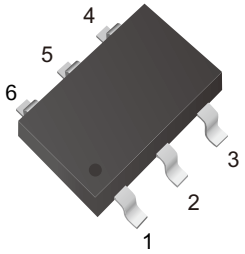
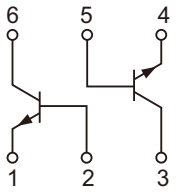
LT36T3904

Dual Transistor (NPN+NPN)

Features



- PowerDissipationof 200mW
- Epitaxial Planar Die Construction
- Ideal for Low Power Amplification and Switching
- Lead free in comply with EU RoHS 2011/65/EU directives



Ordering Information

Part Number	Marking	Shipping	Reel
LT36T3904-TR3	K6N	3000PCS Tape&Reel	7 inchs
LT36T3904-TR10	K6N	10000PCS Tape&Reel	13 inchs

Maximum Ratings (Ta=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
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 -Continuous	0.2	A
P_C	Collector Power Dissipation	0.2	W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

Electrical Characteristics (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C = 10μA, I_E=0	60		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 1mA, 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}= 30 V , I_E=0		0.05	μA
Collector cut-off current	I_{CEX}	V_{CE}= 30 V , V_{BE}(off)=3V		0.05	μA
Emitter cut-off current	I_{EBO}	V_{EB}= 5V , I_C=0		0.05	μA
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		
Collector-emitter saturation voltage	$V_{CE(sat)1}$	I_C=10 mA, I_B= 1mA		0.2	V
	$V_{CE(sat)2}$	I_C=50 mA, I_B= 5mA		0.3	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	I_C= 10 mA, I_B= 1mA	0.65	0.85	V
	$V_{BE(sat)2}$	I_C= 50 mA, I_B= 5mA		0.95	V
Transition frequency	f_T	V_{CE}=20V,I_C=10mA, f=100MHz	300		MHz
Delay time	t_d	V_{CC}=3V, V_{BE}=0.5V		35	nS
Rise time	t_r	I_C=10mA , I_{B1}=- I_{B2}=1mA		35	nS
Storage time	t_S	V_{CC}=3V, I_C=10mA		200	nS
Fall time	t_f	I_{B1}=-I_{B2}= 1mA		50	nS

Characteristics Curves

Fig.1 Static Characteristic

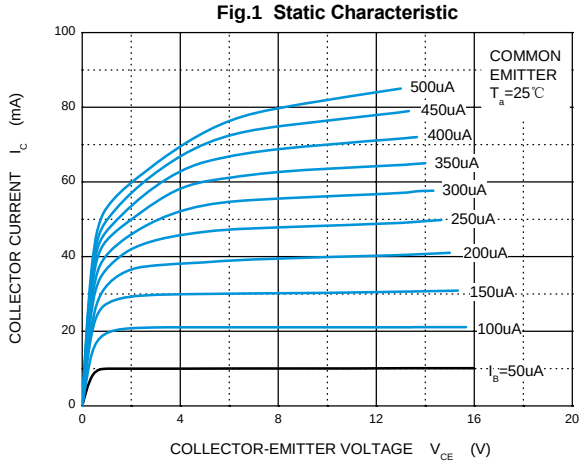


Fig.2 h_{FE} vs I_C

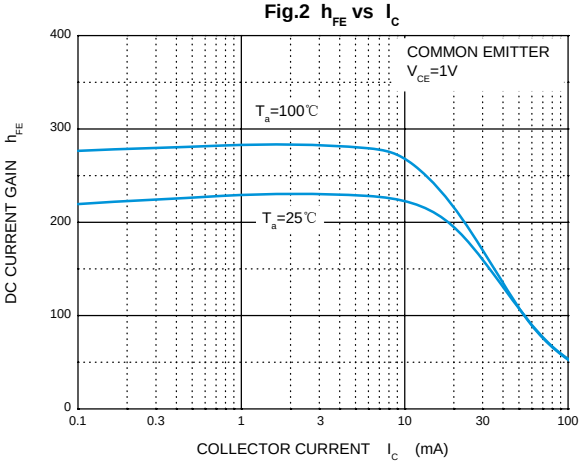


Fig.3 V_{CEsat} vs I_C

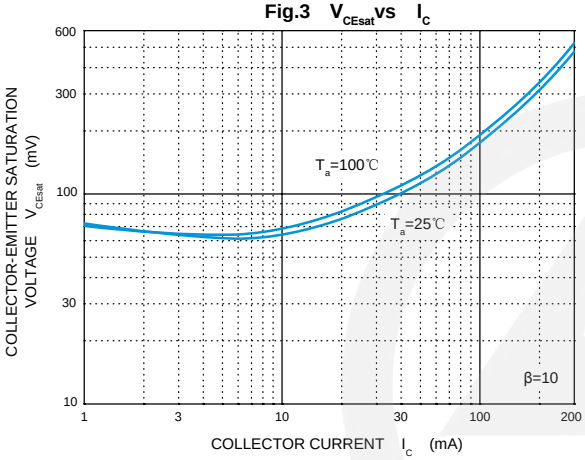


Fig.4 V_{BEsat} vs I_C

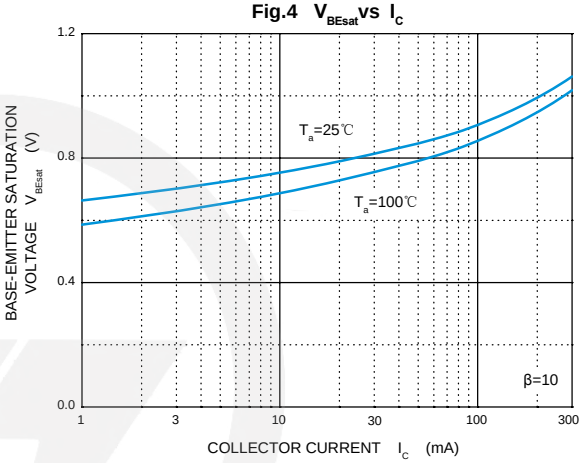


Fig.5 I_C vs V_{BE}

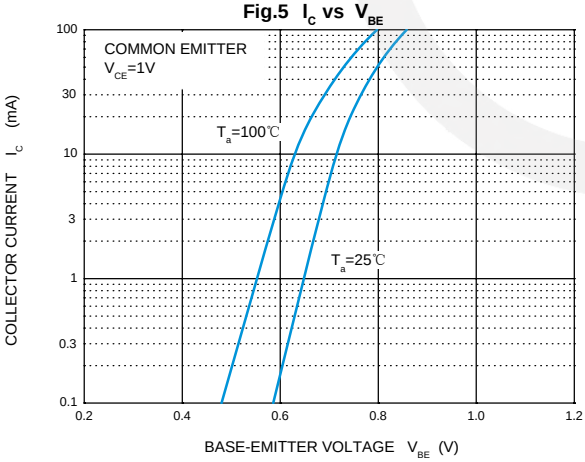


Fig.6 C_{ob}/ C_{ib} vs V_{CB}/ V_{EB}

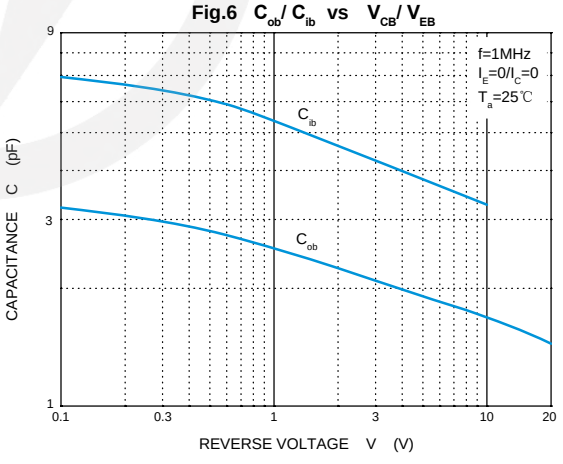


Fig.7 f_T vs I_C

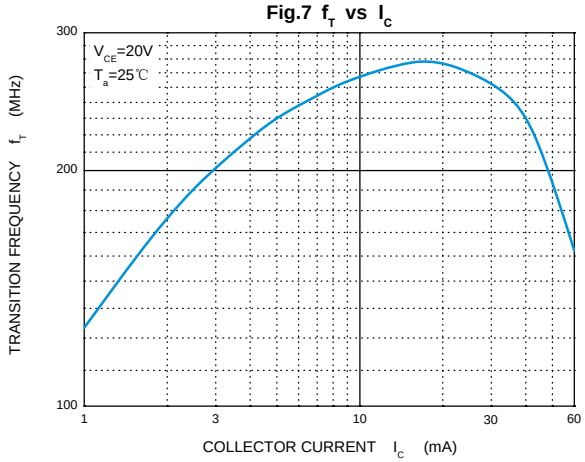
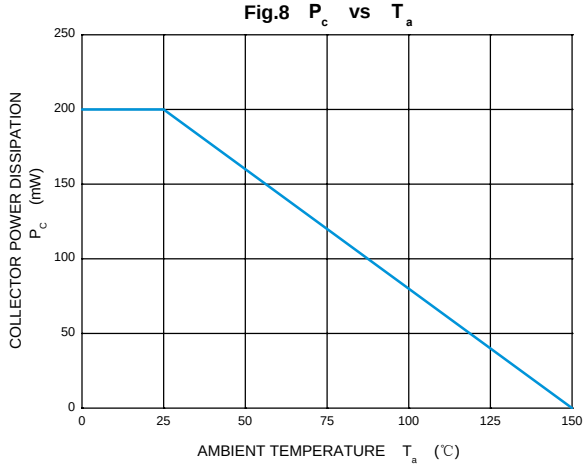
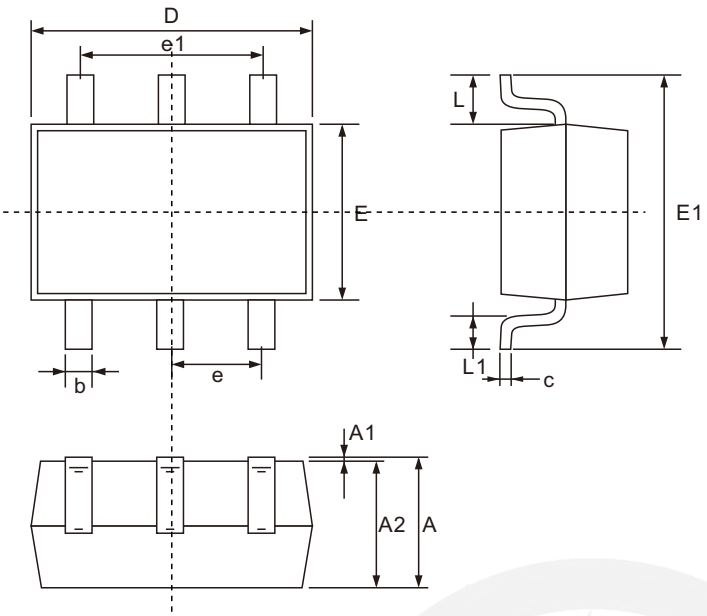


Fig.8 P_c vs T_a



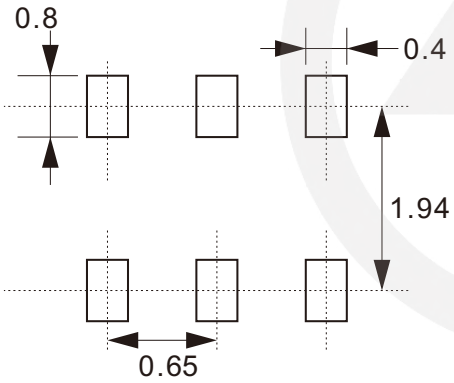
SOT-363 Packeage Outline



Unit: mm

SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650TYP.	
e1	1.200	1.400
L	0.525 TYP.	
L1	0.260	0.460
θ	0°	8°

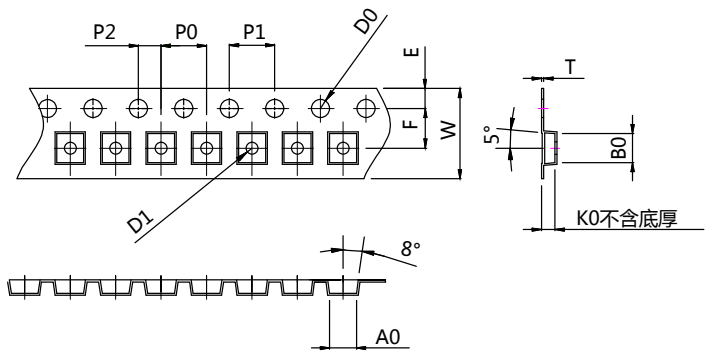
SOT-363 Suggested Pad Layout



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

Carrier Tape Dimensions

Unit：mm

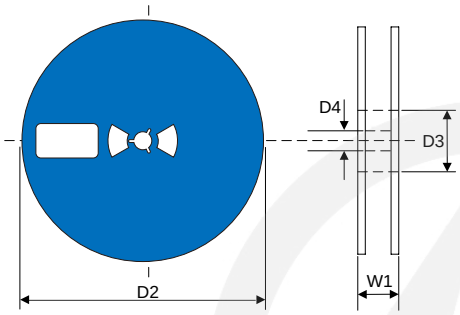


Symbol	Spec	Symbol	Spec
A0	2.36±0.10	P1	4.00±0.10
B0	2.55±0.10	W	8.00±0.10
K0	1.20±0.10	E	1.75±0.10
D0	1.55±0.10	F	3.50±0.05
D1	1.10±0.10	P2	2.00±0.10
P0	4.00±0.10	T	2.00±0.10

Reel Dimensions

Unit：mm

7” Reel

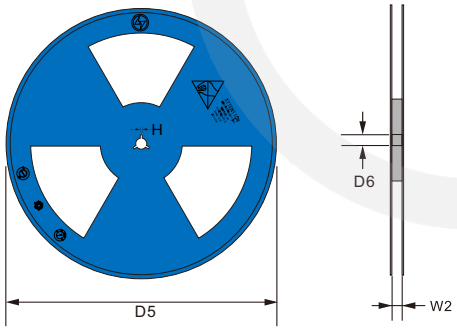


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Dimensions

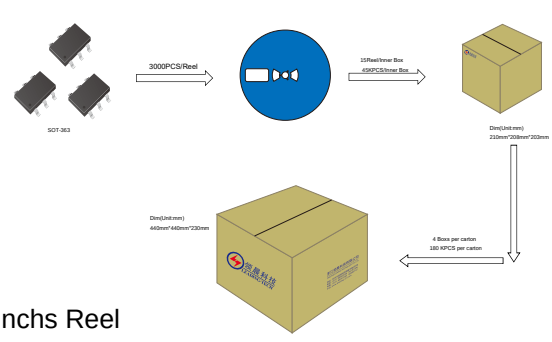
Unit：mm

13” Reel

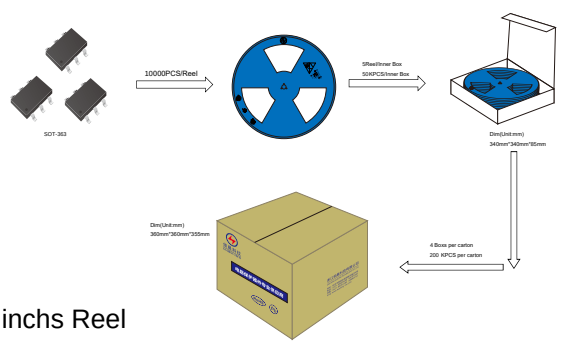


D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±0.5
Quantity: 10000PCS	

Packaging



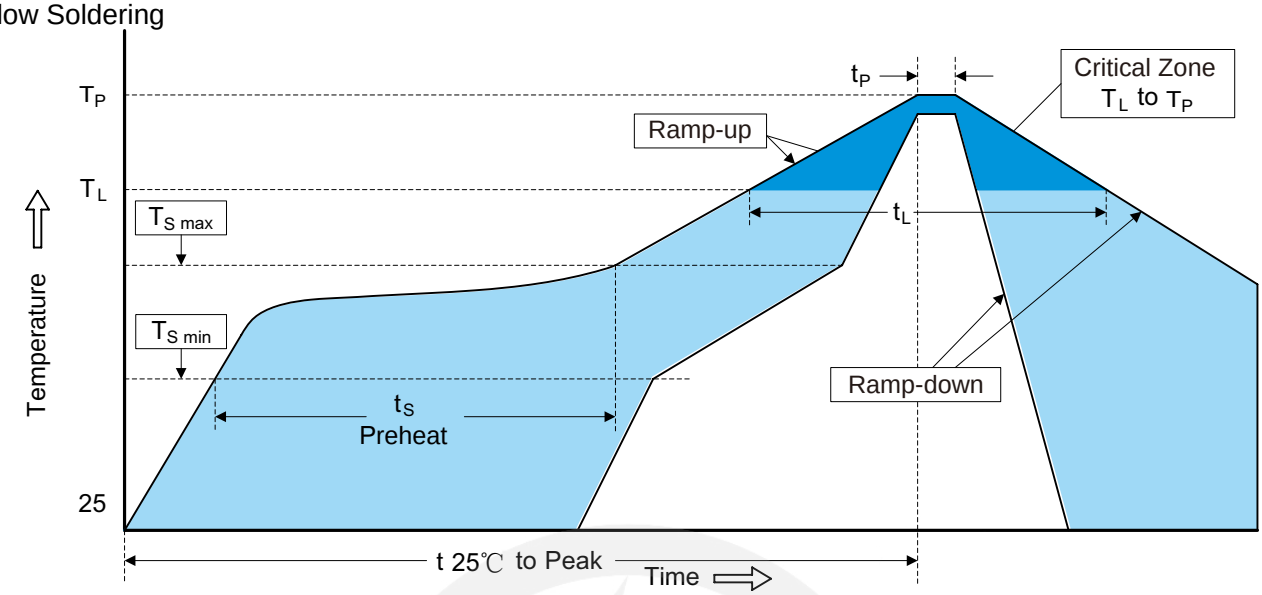
7 inchs Reel



13 inchs Reel

Recommended Soldering Conditions

Reflow Soldering



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3℃/second max.
Preheat -Temperature Min ($T_{S\ min}$) -Temperature Max ($T_{S\ max}$) -Time (min to max) (t_S)	 150℃ 200℃ 60-180 seconds
$T_{S\ max}$ to T_L -Ramp-up Rate	 3℃/second max.
Time maintained above: -Temperature (T_L) -Time (t_L)	 217℃ 60-150 seconds
Peak Temperature (T_P)	260℃
Time within 5℃ of actual Peak Temperature (t_P)	20-40 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8 minutes max.

Important Notice and Disclaimer

Leading-Tech reverses the right to make changes to this document and its products and specifications at any time without notice.

Customers should obtain and confirm the latest product information and specifications before final design,purchase or use.

Leading-Tech makes no warranty,representation or guarantee regarding the suitability of its products for any particular purpose,not does Leading-Tech assume any liability for application assistance or customer product design.

Leading-tech does not warrant or accept any liability with products which are purchase or used for any unintended or unauthorized application.

No license is granted by implication or otherwise under any intellectual property rights of Leading-Tech.

Leading-Tech products are not authorized for use as critical components in life support devices or systems without express written approval of Leading-tech.

Version Update Information

Series NO.	Enactment/Revision Date	Effective Date	Version	Revision content	Revision Reason	Revision Person	Note
01	2024.05.27	2024.05.27	3.0	New File	/	Ding	