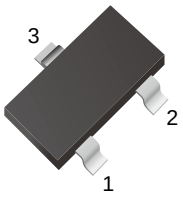
LT2222A

Transistor(NPN)

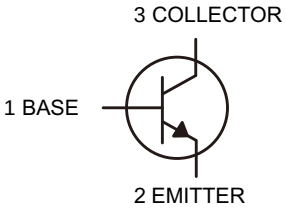


Features

- Epitaxial planar die construction
- Lead free in comply with EU RoHS 2011/65/EU directives

Mechanical Data

- Case: SOT-23
- Approx. Weight: 8.1mg



Ordering Information

Part Number	Marking	Shipping	Reel
LT2222A-TR3	1P or ṢG3	3000PCS Tape&Reel	7 inchs
LT2222A-TR12	1P or ṢG3	12000PCS Tape&Reel	13 inchs

Limiting Values (Absolute Maximum Ratings)

Symbol	Parameter	Value	Unit
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	600	mA
P_C	Collector Power Dissipation	300	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	417	˚C/W
T_j , T_{stg}	Junction and Storage Temperature Range	-55 to +150	˚C

Elecreical Characteristics (Ta=25°C)

Parameter	Symbol	Test conditions	Min	Typ	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			0.01	μA
Collector cut-off current	I_{CEX}	V_{CE}=30V,$V_{EB(off)}$=3V			0.01	μA
Emitter cut-off current	I_{EBO}	V_{EB}= 3V, I_C=0			0.1	μA
DC current gain	$h_{FE(1)}$*	V_{CE}=10V, I_C= 150mA	100		300	
	$h_{FE(2)}$	V_{CE}=10V, I_C= 0.1mA	40			
	$h_{FE(3)}$*	V_{CE}=10V, I_C= 500mA	42			
Collector-emitter saturation voltage	$V_{CE(sat)}$*	I_C=500 mA, I_B= 50mA I_C=150 mA, I_B=15mA			1 0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$*	I_C=500 mA, I_B= 50mA I_C=150 mA, I_B=15mA			2.0 1.2	V
Transition frequency	f_T	V_{CE}=20V, I_C= 20mA, f=100MHz	250			MHz
Delay time	t_d	V_{CC}=30V, $V_{BE(off)}$=-0.5V I_C=150mA , I_{B1}= 15mA			10	ns
Rise time	t_r				25	ns
Storage time	t_S	V_{CC}=30V, I_C=150mA I_{B1}=-I_{B2}=15mA			225	ns
Fall time	t_f				60	ns

*pulse test: Pulse Width ≤300μs, Duty Cycle≤ 2.0%.

Characteristics Curves

Fig.1 Static Characteristic

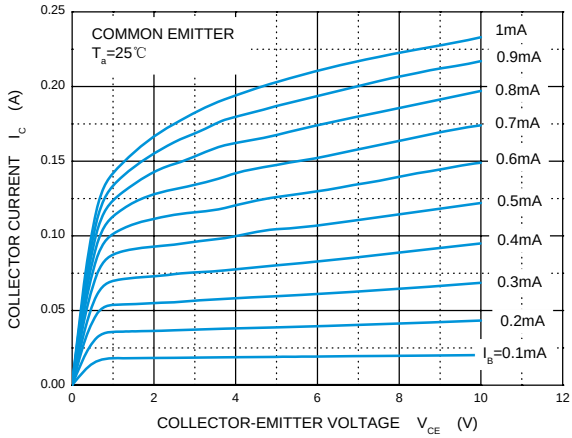


Fig.2 h_{FE} vs I_C

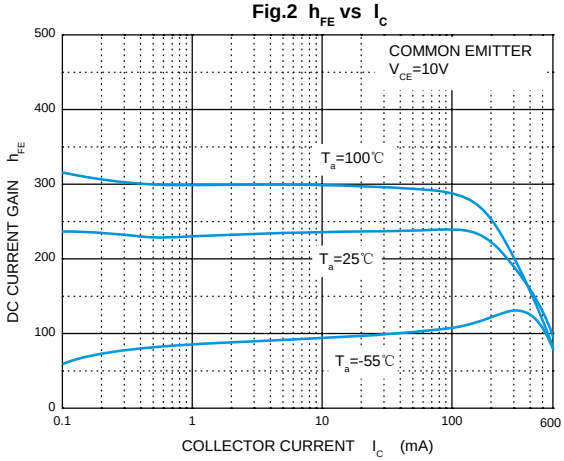


Fig.3 V_{CEsat} vs I_C

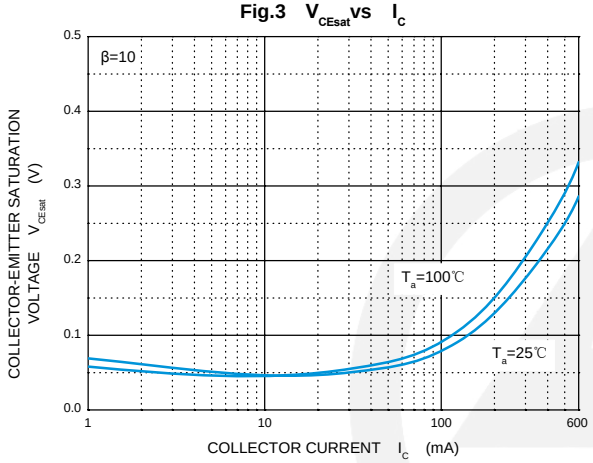


Fig.4 V_{BEsat} vs I_C

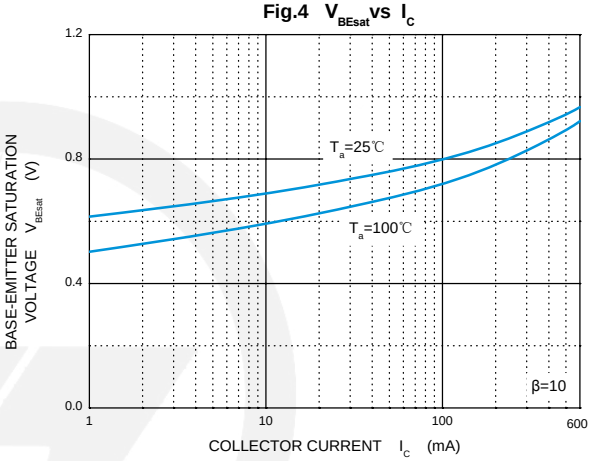


Fig.5 I_C vs V_{BE}

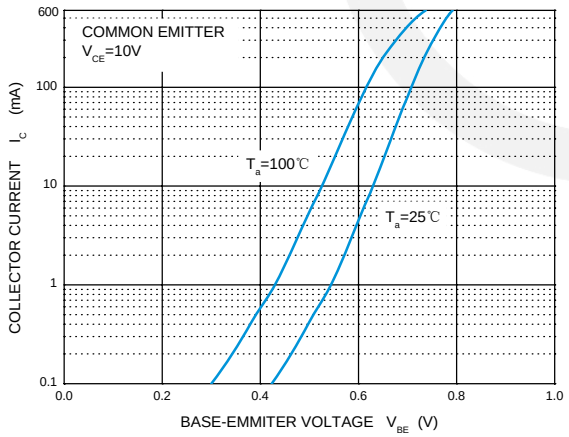


Fig.6 C_{ob}/C_{ib} vs V_{CB}/V_{EB}

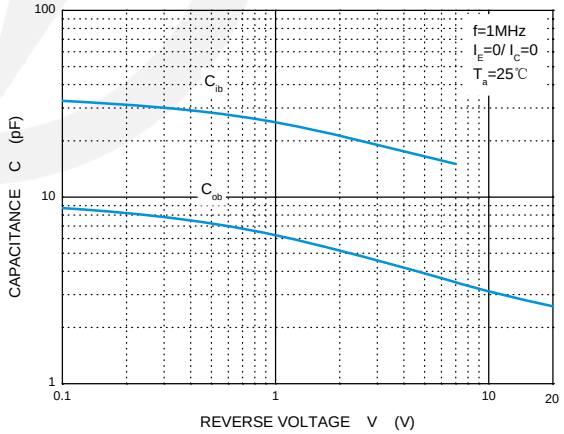


Fig.7 f_T vs I_C

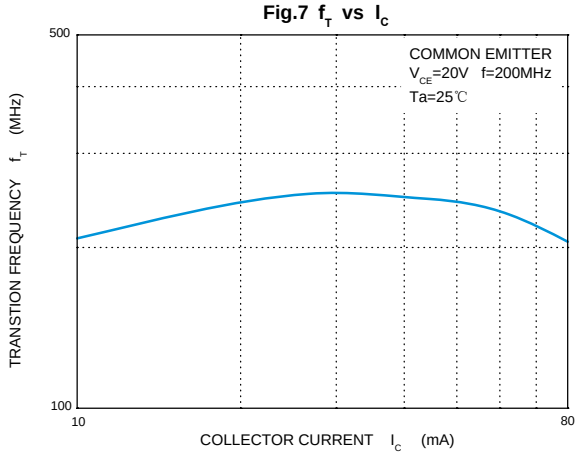
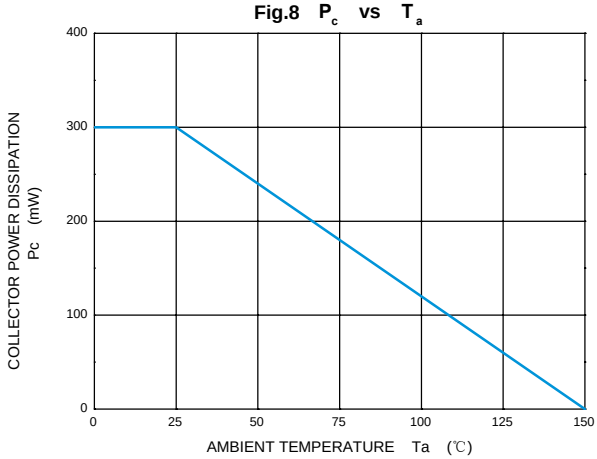
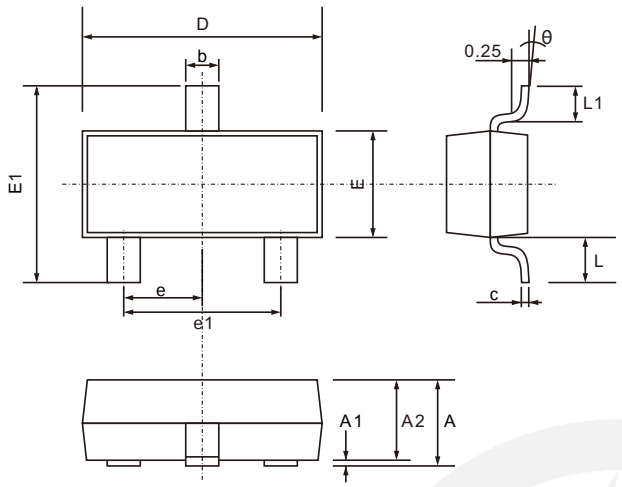


Fig.8 P_c vs T_a



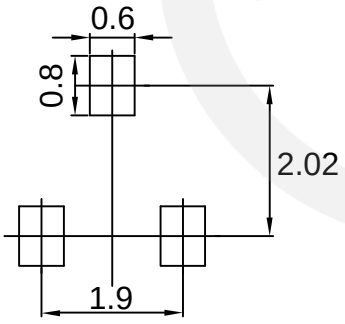
SOT-23 Package Outline



Unit: mm

SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.200
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.200
D	2.700	3.100
E	1.200	1.400
E1	2.200	2.600
e	0.950 TYP.	
e1	1.750	2.050
L	0.550 TYP.	
L1	0.300	0.500
θ	0°	8°

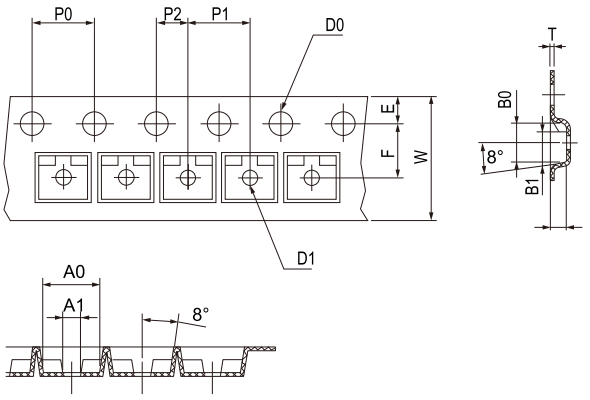
SOT-23 Suggested Pad Layout



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

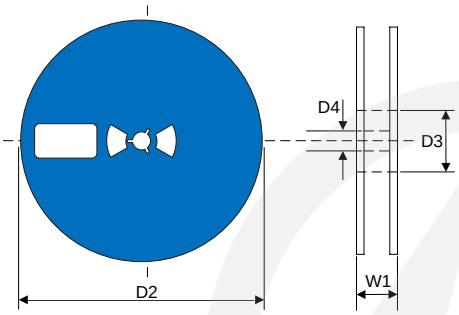


Symbol	Spec	Symbol	Spec
A0	3.15±0.10	P0	4.00±0.05
A1	1.09±0.10	P1	4.00±0.02
B0	2.77±0.10	W	8.00±0.10
B1	2.15±0.10	E	1.75±0.10
K0	1.22±0.10	F	3.50±0.05
D0	1.50±0.10	T	2.00±0.10
D1	1.00±0.10		

Reel Dimensions

Unit：mm

7” Reel

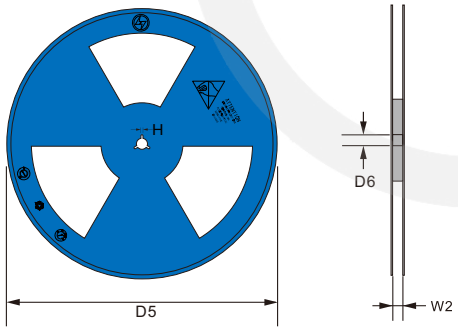


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Dimensions

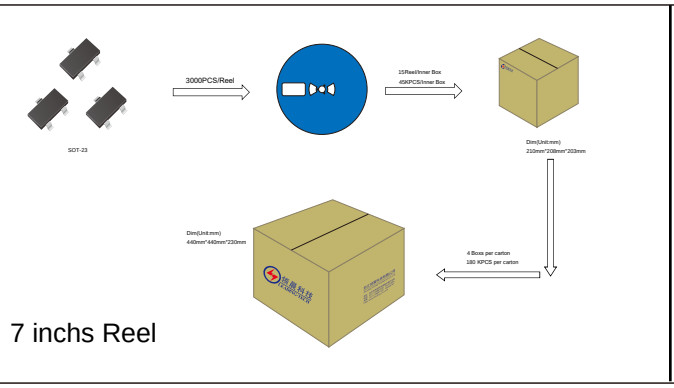
Unit：mm

13” Reel

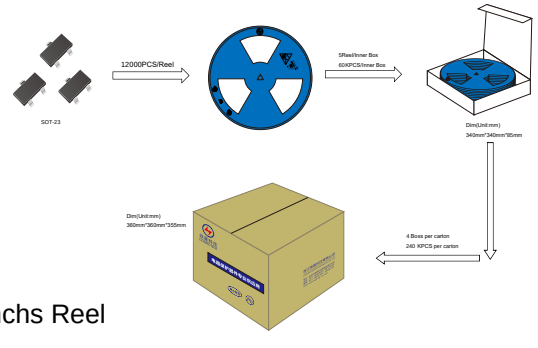


D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±0.5
Quantity: 12000PCS	

Packaging



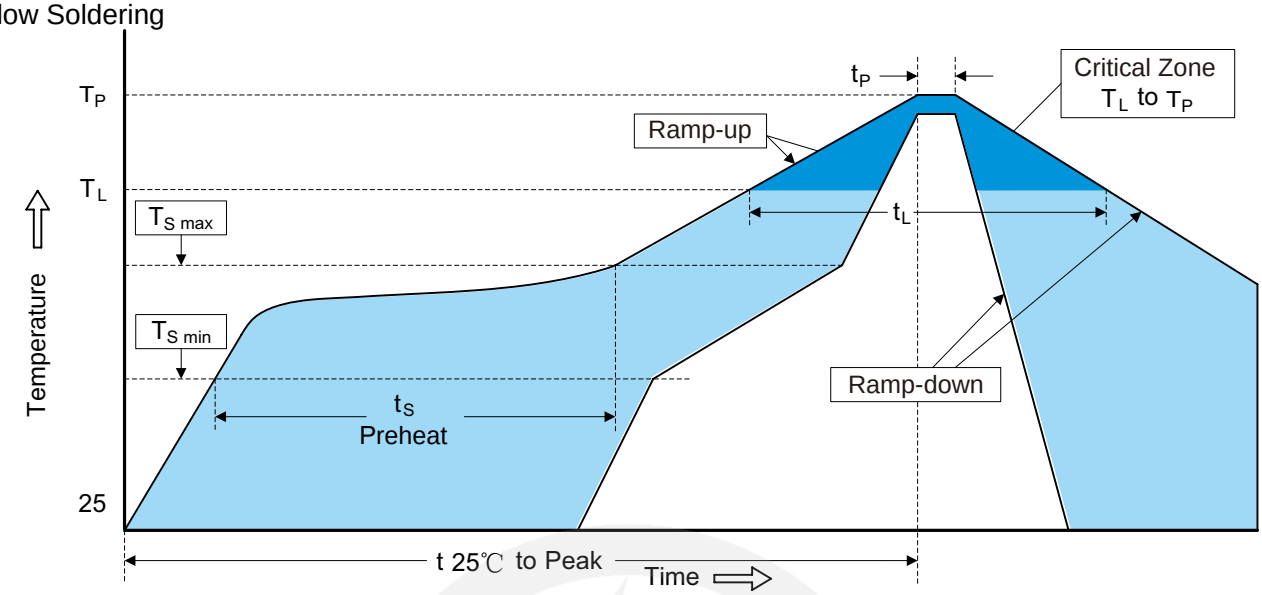
7 inchs Reel



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.

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Version Update Information

Series NO.	Enactment/Revision Date	Effective Date	Version	Revision Content	Revision Reason	Revision Person	Note
01	2024.03.01	2024.03.01	3.0	New file	/	Ding	
02	2025.03.19	2025.03.19	3.1	Modify the low-temperature curve	/	Ding	
03	2025.06.13	2025.06.13	3.2	Modify junction temperature T_j	/	Ding	
04	2026.03.06	2026.03.06	3.3	Package outline E1(max)=2.6mm	/	Ding	