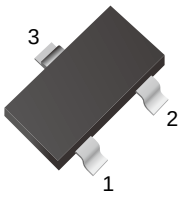
LT619

Transistor(NPN)

Features

- Low Saturation Voltage
- Lead free in comply with EU RoHS 2011/65/EU directives

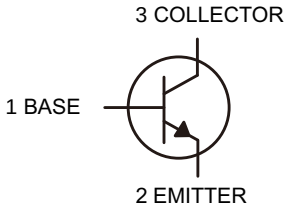


Mechanical Data

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

Ordering Information

Part Number	Marking	Shipping	Reel
LT619-TR3	619	3000PCS Tape&Reel	7 inchs
LT619-TR12	619	12000PCS Tape&Reel	13 inchs



Maximum Ratings (Ta=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	2	A
P_C	Power Dissipation	0.35	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	357	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

Electrical characteristics (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA,I_E=0	50			V
Collector-emitter breakdown voltage (note 1)	$V_{(BR)CEO}$	I_C=10mA,I_B=0	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA ,I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=40V,I_E=0			100	nA
Emitter cut-off current	I_{EBO}	V_{EB}=4V,I_C=0			100	nA
DC current gain (note 1)	$h_{FE(1)}$	V_{CE}=2V, I_C=10mA	200			
	$h_{FE(2)}$	V_{CE}=2V, I_C=0.2A	300			
	$h_{FE(3)}$	V_{CE}=2V, I_C=1A	200			
	$h_{FE(4)}$	V_{CE}=2V, I_C=2A	100			
	$h_{FE(5)}$	V_{CE}=2V, I_C=6A		40		
Collector-emitter saturation voltage (note 1)	$V_{CE(sat)1}$	I_C=0.1A,I_B=10mA			20	mV
	$V_{CE(sat)2}$	I_C=1A,I_B=10mA			200	mV
	$V_{CE(sat)3}$	I_C=2A,I_B=100mA			220	mV
Base-emitter saturation voltage (note 1)	$V_{BE(sat)}$	I_C=2A,I_B=50mA			1	V
Base-emitter on voltage (note 1)	$V_{BE(on)}$	I_C=2A, V_{CE}=2V			1	V
Output capacitance	C_{ob}	V_{CB}=10V, f=1MHz			20	pF
Turn-on time	$t_{(on)}$	V_{CC}=10V, I_C=1A, I_{B1}=-I_{B2}=10mA		170		ns
Turn-off time	$t_{(off)}$			750		ns
Transition frequency	f_T	V_{CE}=10V,I_C=50mA, f=100MHz	100			MHz

Notes :
1. Pulse test: Pulse width≤300μs,duty cycle≤2.0%.

Characteristics Curves

Fig.1 Static Characteristic

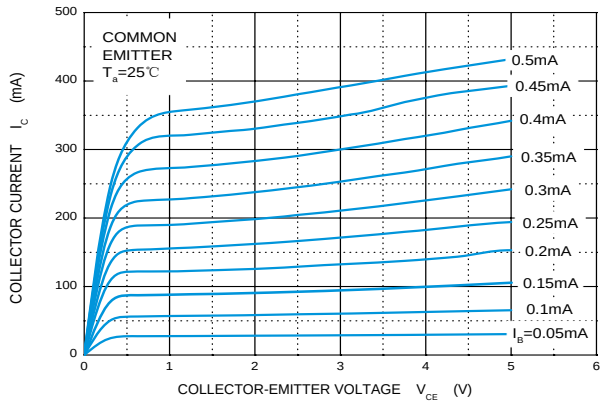


Fig.2 h_{FE} vs I_C

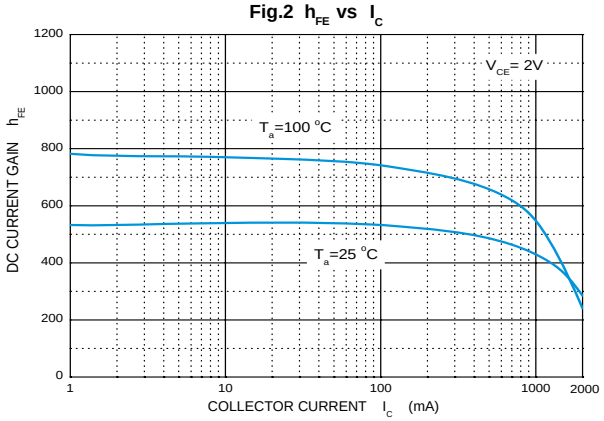


Fig.3 V_{BEsat} vs I_C

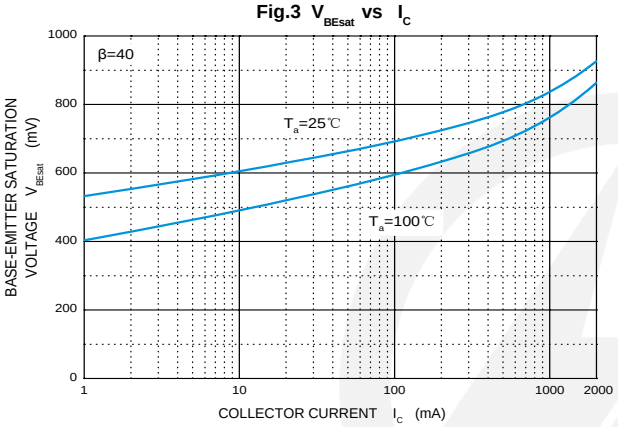


Fig.4 V_{CEsat} vs I_C

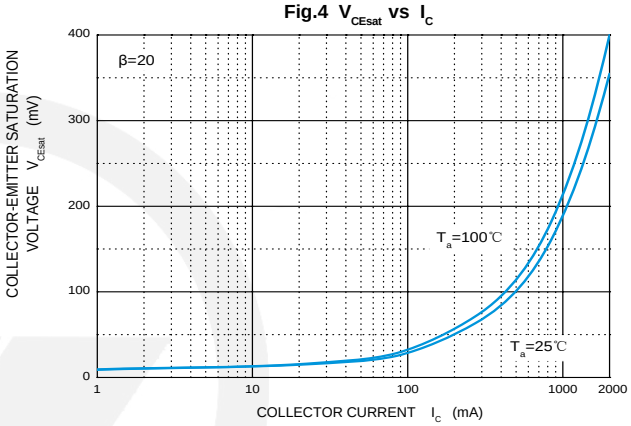


Fig.5 f_T vs I_C

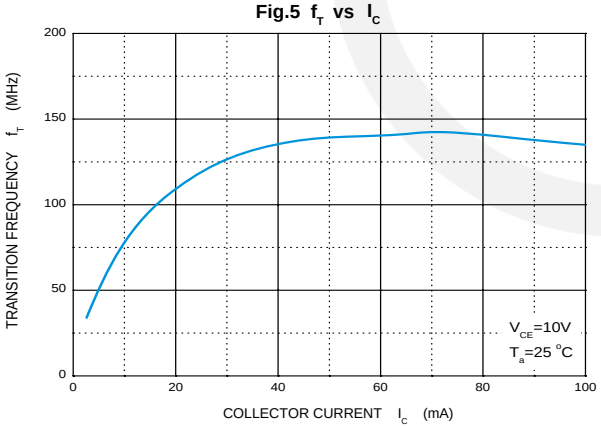


Fig.6 C_{ob}/ C_{ib} vs V_{CB}/ V_{EB}

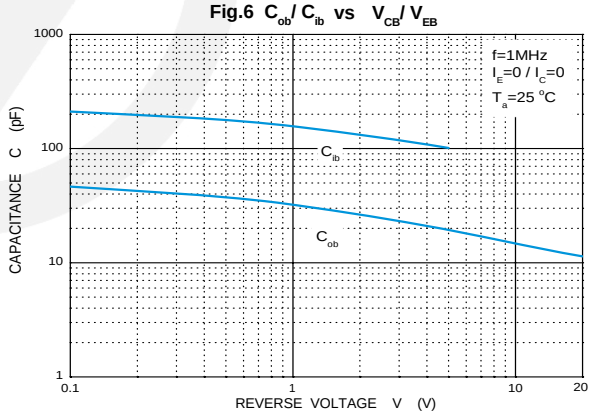


Fig.7 V_{BE} vs I_C

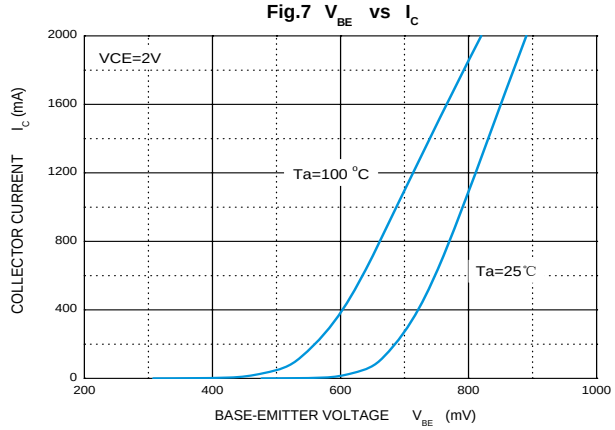
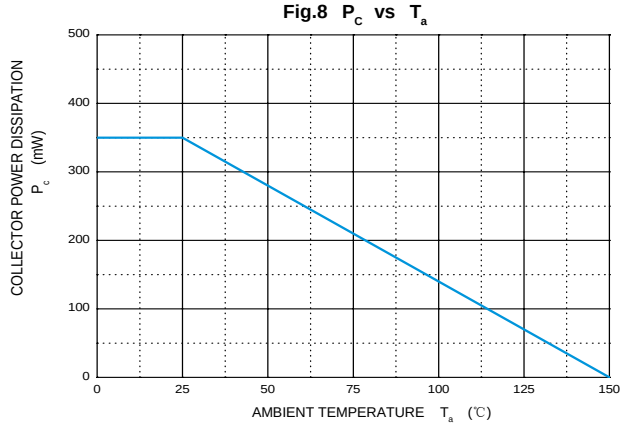
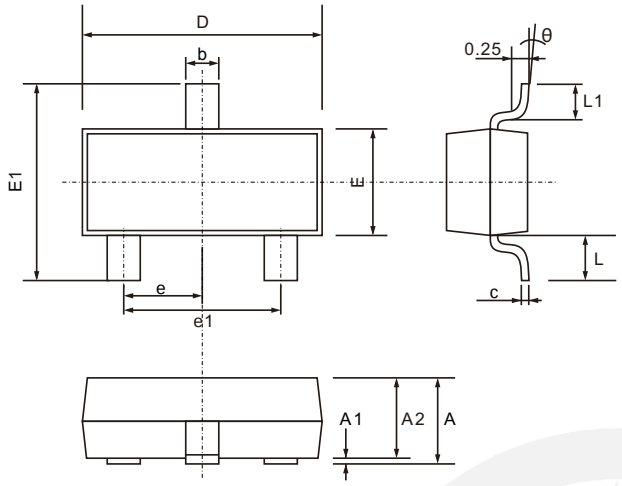


Fig.8 P_C vs T_a



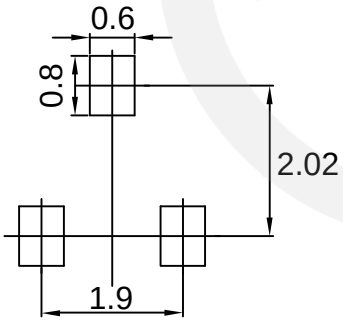
SOT-23 Package Outline

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°

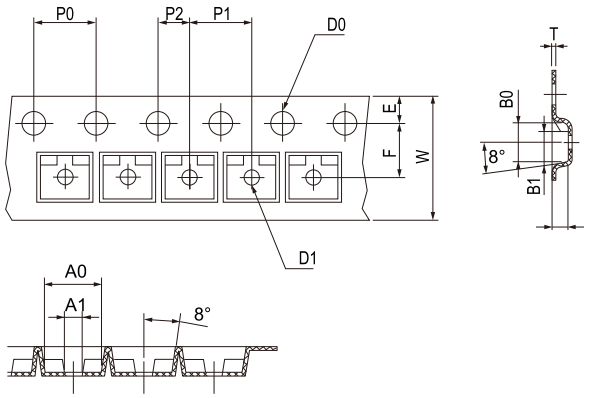
SOT-23 Suggested Pad Layout



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

Carrier Tape Diemensions

Unit：mm

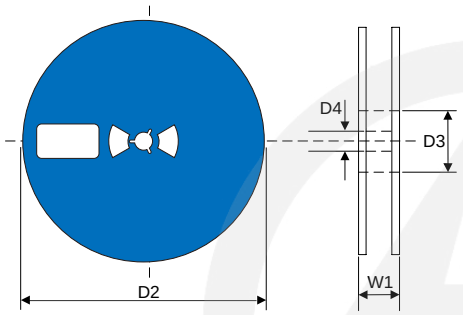


Symbol	Spec	Symbol	Spec
A0	3.15±0.10	P0	4.00±0.05
A1	1.09±0.10	P1	4.00±0.02
B0	2.77±0.10	W	8.00±0.10
B1	2.15±0.10	E	1.75±0.10
K0	1.22±0.10	F	3.50±0.05
D0	1.50±0.10	T	2.00±0.10
D1	1.00±0.10		

Reel Diemensions

Unit：mm

7” Reel

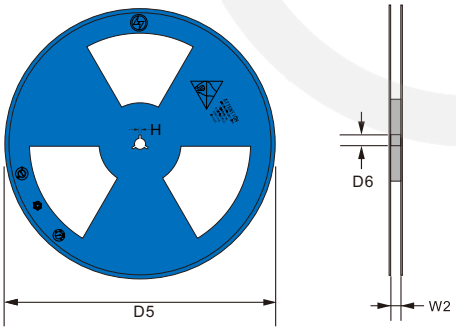


D2	Φ178.0±2.0
D3	Φ50
D4	13.0±0.5
W1	12±0.5
Quantity: 3000PCS	

Reel Diemensions

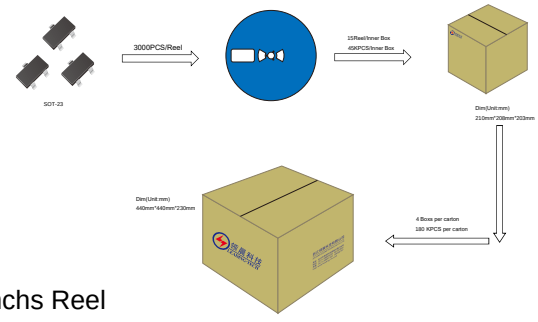
Unit：mm

13” Reel

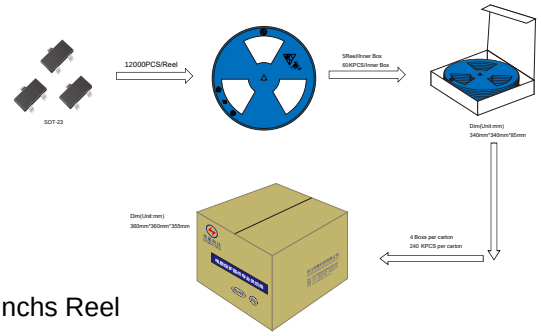


D5	Φ330.0±2.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0
Quantity: 12000PCS	

Packaging



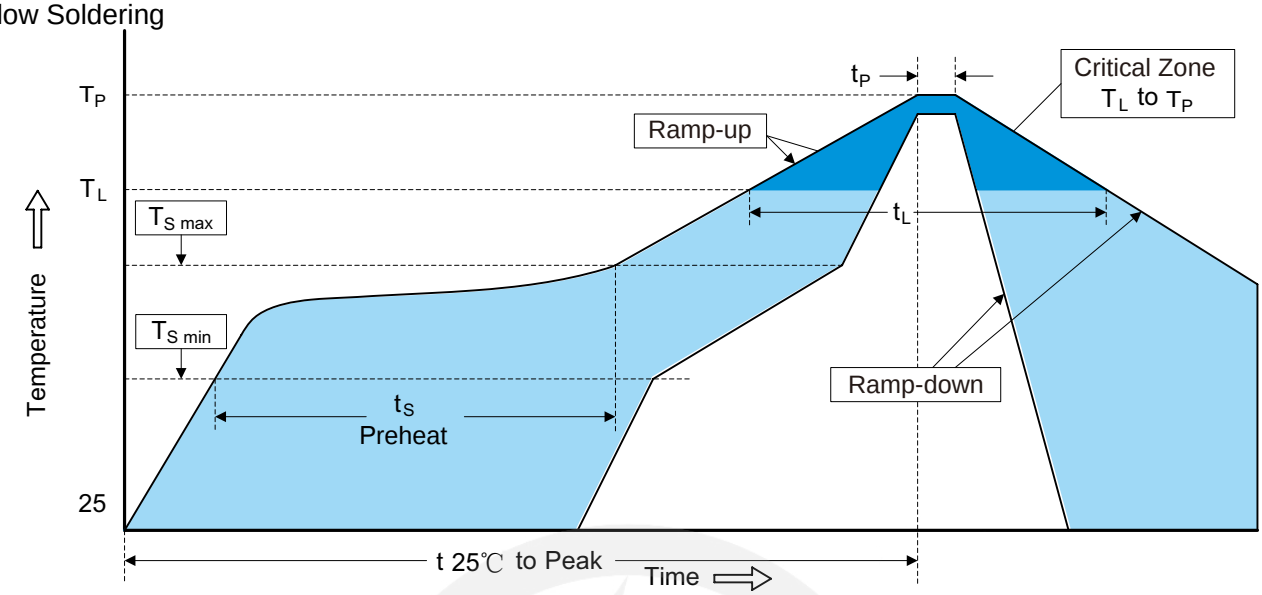
7 inchs Reel



13 inchs Reel

Recommended Soldering Conditons

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	2025.02.06	2025.02.06	3.0	New file	/	Ding	
02	2026.03.06	2026.03.06	3.1	Package outline E1(max)=2.6mm	/	Ding	