

# General Purpose Transistors

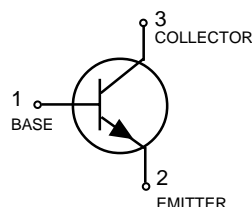
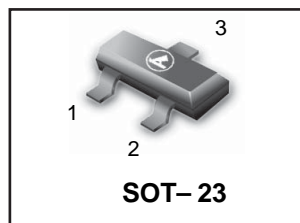
## FEATURE

- High Voltage:  $V_{CEO} = 50\text{ V}$ .
- Epitaxial planar type.
- PNP complement: L2SA812
- Pb-Free Package is available.

## DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
L2SC1623QLT1	L5	3000/Tape&Reel
L2SC1623QLT1G	L5 (Pb-Free)	3000/Tape&Reel
L2SC1623RLT1	L6	3000/Tape&Reel
L2SC1623RLT1G	L6 (Pb-Free)	3000/Tape&Reel
L2SC1623SLT1	L7	3000/Tape&Reel
L2SC1623SLT1G	L7 (Pb-Free)	3000/Tape&Reel

## L2SC1623\*LT1



## MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	50	V
Collector-Base Voltage	$V_{CBO}$	60	V
Emitter-Base Voltage	$V_{EBO}$	7	V
Collector current-continuoun	$I_C$	150	mAdc

## THERMAL CHARATEERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (1) $T_A=25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	225 1.8	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate, (2) $T_A=25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	300 2.4	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	$T_j, T_{stg}$	-55 to +150	$^\circ\text{C}$

**L2SC1623\*LT1**

**ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)**

Characteristic	Symbol	Min	Typ	Max	Unit
----------------	--------	-----	-----	-----	------

**OFF CHARACTERISTICS**

Collector Cutoff Current (V <sub>CB</sub> =60V)	I <sub>CBO</sub>	-	-	0.1	μA
Emitter Cutoff Current (V <sub>BE</sub> =5V)	I <sub>EBO</sub>			0.1	μA

**ON CHARACTERISTICS**

DC Current Gain (I <sub>C</sub> =1.0mA, V <sub>CE</sub> =6V)	h <sub>FE</sub>	120	-	560	
Collector-Emitter Saturation Voltage (I <sub>C</sub> =100mA, I <sub>B</sub> =10mA)	V <sub>CE(sat)</sub>	-	0.15	0.3	V
Base-Emitter Saturation Voltage (I <sub>C</sub> =100mA, I <sub>B</sub> =10mA)	V <sub>BE(sat)</sub>	-	0.86	1.0	V
Base -Emitter On Voltage (I <sub>C</sub> =1mA, V <sub>CE</sub> =6.0V)	V <sub>BE</sub>	0.55	0.62	0.65	V

**SMALL-SIGNAL CHARACTERISTICS**

Current-Gain-Bandwidth Product (V <sub>CE</sub> =6.0V, I <sub>E</sub> = 1.0MHz)	F <sub>t</sub>	-	250	-	MHz
Output Capacitance(V <sub>CE</sub> = 6V, I <sub>E</sub> =0, f=1.0MHz)	C <sub>ob</sub>	-	3	-	pF

**h<sub>FE</sub> Values are classified as follows**

NOTE:

*	Q	R	S
h <sub>FE</sub>	120~270	180~390	270~560

L2SC1623\*LT1

Fig.1 Grounded emitter propagation characteristics

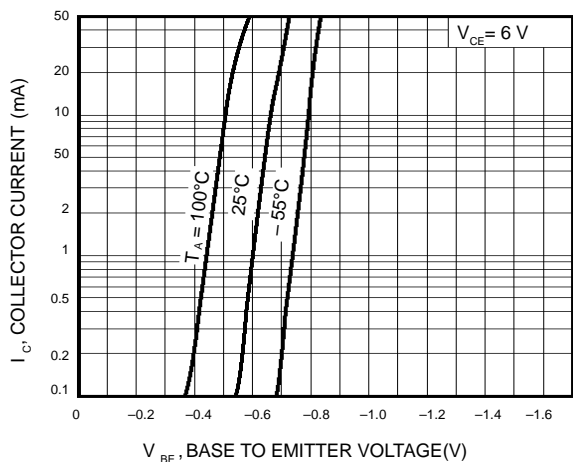


Fig.2 Grounded emitter output characteristics(I)

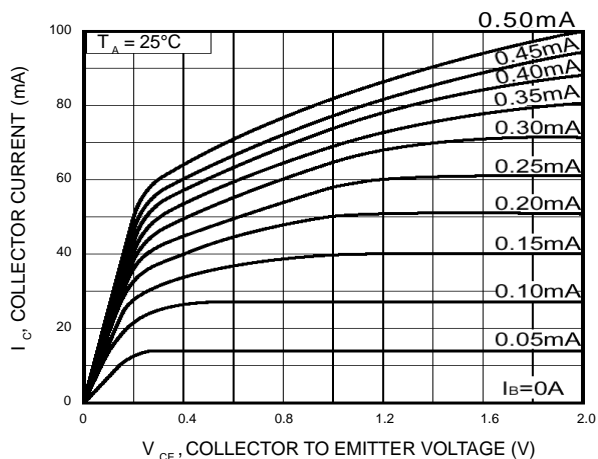


Fig.3 Grounded emitter output characteristics(II)

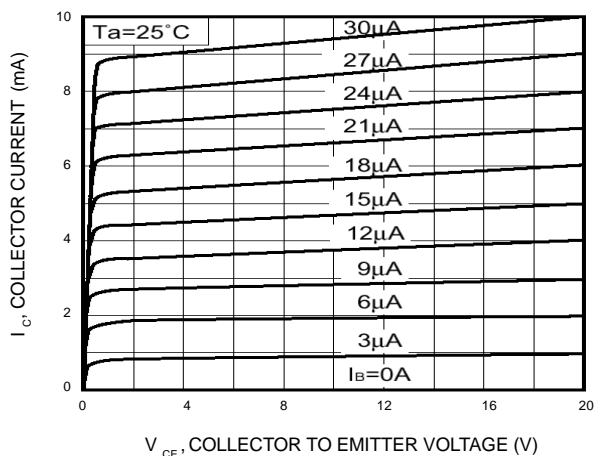


Fig.4 DC current gain vs. collector current (I)

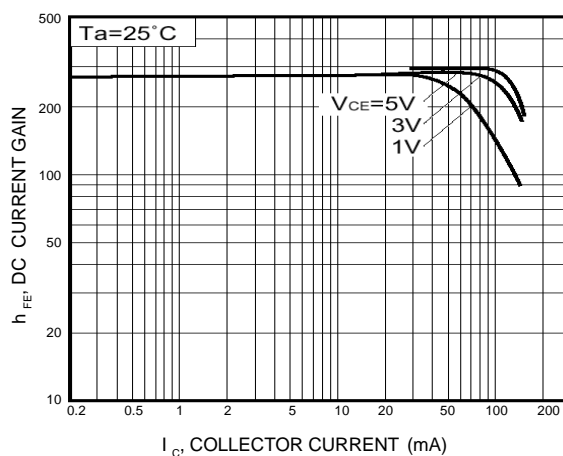


Fig.5 DC current gain vs. collector current (II)

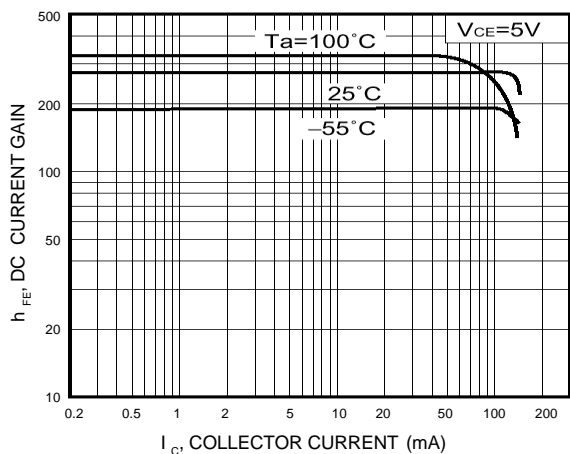
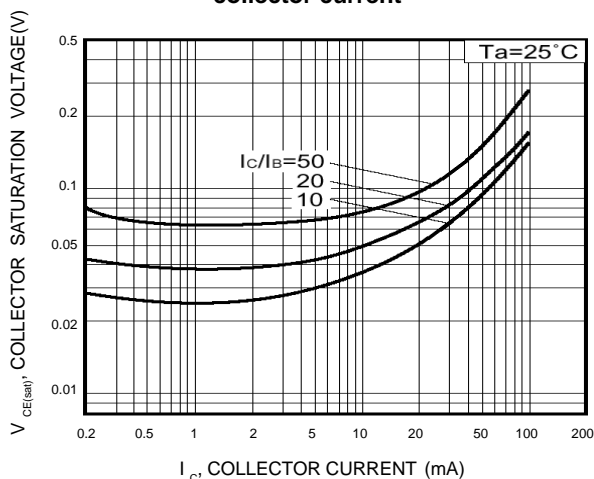


Fig.6 Collector-emitter saturation voltage vs. collector current



L2SC1623\*LT1

Fig.7 Collector-emitter saturation voltage vs. collector current (I)

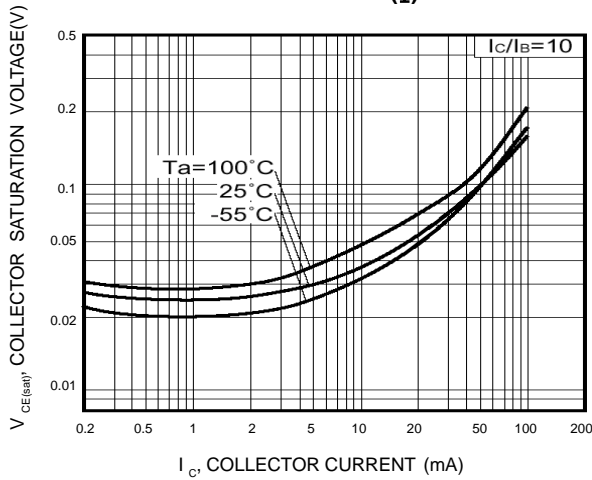


Fig.8 Collector-emitter saturation voltage vs. collector current (II)

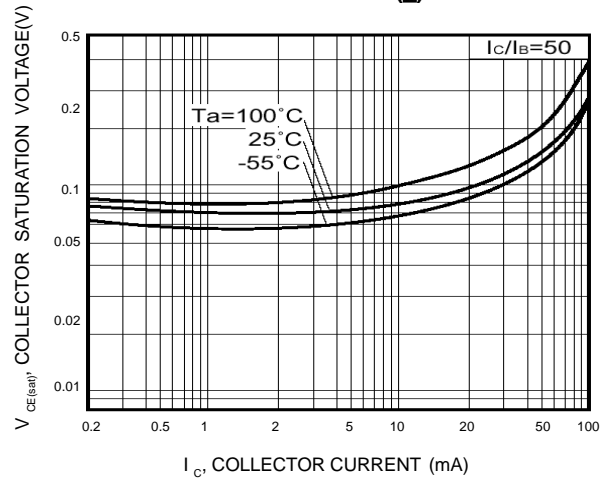


Fig.9 Gain bandwidth product vs. emitter current

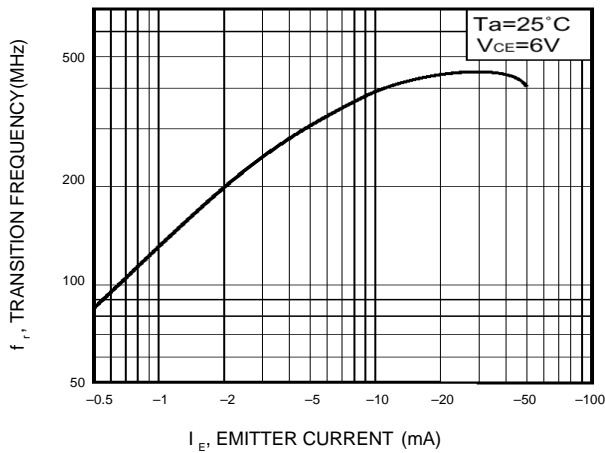


Fig.10 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

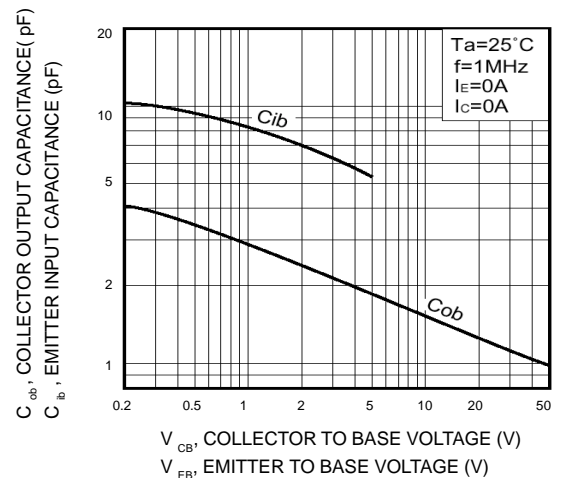
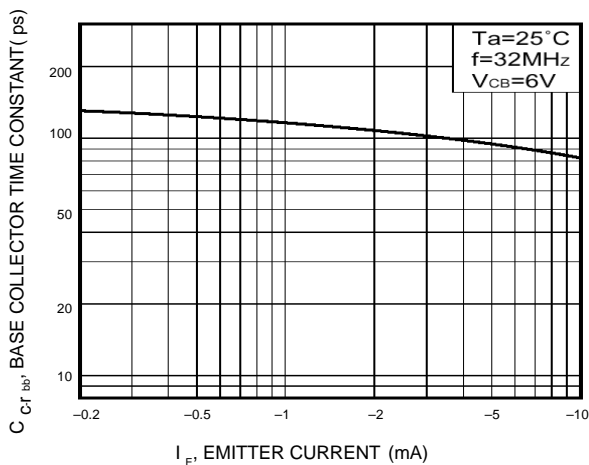
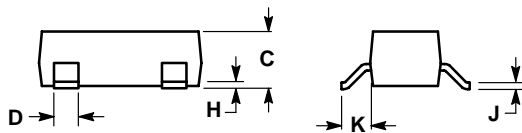
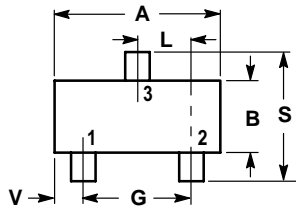


Fig.11 Base-collector time constant vs. emitter current



**L2SC1623\*LT1**

**SOT-23**



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

- PIN 1. BASE  
 2. EMITTER  
 3. COLLECTOR

