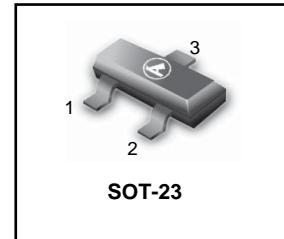


## General Purpose Transistors

### FEATURE

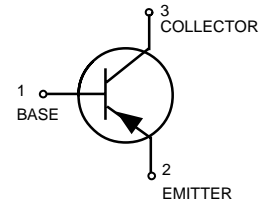
- High Voltage:  $V_{CEO} = -50\text{ V}$ .
- Epitaxial planar type.
- NPN complement: L2SC1623
- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

### L2SA812QLT1G Series S-L2SA812QLT1G Series



### DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
L2SA812QLT1G S-L2SA812QLT1G	M8	3000/Tape&Reel
L2SA812QLT3G S-L2SA812QLT3G	M8	10000/Tape&Reel
L2SA812RLT1G S-L2SA812RLT1G	M6	3000/Tape&Reel
L2SA812RLT3G S-L2SA812RLT3G	M6	10000/Tape&Reel
L2SA812SLT1G S-L2SA812SLT1G	M7	3000/Tape&Reel
L2SA812SLT3G S-L2SA812SLT3G	M7	10000/Tape&Reel



### MAXIMUM RATINGS

Rating	Symbol	L2SA812	Unit
Collector-Emitter Voltage	$V_{CEO}$	-50	V
Collector-Base Voltage	$V_{CBO}$	-60	V
Emitter-Base Voltage	$V_{EBO}$	-6	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 $25^\circ\text{C}$	$P_D$	200 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 $25^\circ\text{C}$	$P_D$	200 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	$^\circ\text{C}$

**L2SA812QLT1G Series**  
**S-L2SA812QLT1G Series**

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

Characteristic	Symbol	Min	Typ	Max	Unit
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**OFF CHARACTERISTICS**

Collector-Emitter Breakdown Voltage (IC=-1mA)	V <sub>(BR)CEO</sub>	-50	-	-	V
Emitter-Base Breakdown Voltage (IE=-50 μA )	V <sub>(BR)EBO</sub>	-6	-	-	V
Collector-Base Breakdown Voltage (IC=-50 μA)	V <sub>(BR)CBO</sub>	-60	-	-	V
Collector Cutoff Current (V <sub>CB</sub> =-50V)	I <sub>CBO</sub>	-	-	-0.1	μA
Emitter Cutoff Current (V <sub>BE</sub> =-6V)	I <sub>EBO</sub>	-	-	-0.1	μA

**ON CHARACTERISTICS**

DC Current Gain (IC=-1mA, V <sub>CE</sub> =-6.0V)	h <sub>FE</sub>	120	-	560	
Collector-Emitter Saturation Voltage (IC=-100mA, I <sub>B</sub> =-10mA)	V <sub>CE(sat)</sub>	-	-0.18	-0.3	V
Base -Emitter On Voltage I <sub>E</sub> =-1.0mA, V <sub>CE</sub> =-6.0V)	V <sub>BE</sub>	-0.58	-0.62	-0.68	V

**SMALL-SIGNAL CHARACTERISTICS**

Current-Gain-Bandwidth Product (V <sub>CE</sub> =-6.0V, I <sub>E</sub> =-10mA)	F <sub>t</sub>	-	180	-	MHz
Output Capacitance(V <sub>CE</sub> = -10V, I <sub>E</sub> =0, f=1.0MHz)	C <sub>obo</sub>	-	4.5	-	pF

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

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

## L2SA812QLT1G Series S-L2SA812QLT1G Series

Fig.1 Grounded emitter propagation characteristics

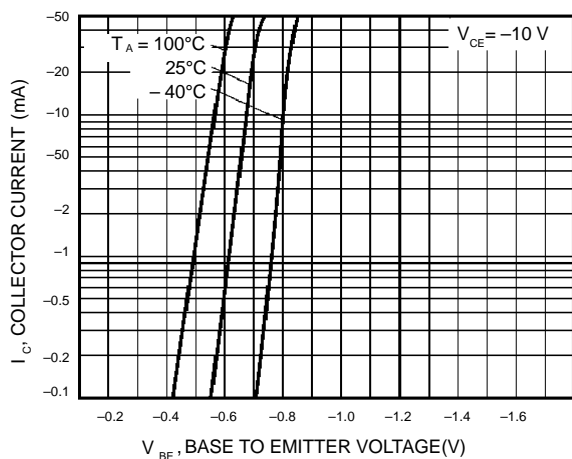


Fig.2 Grounded emitter output characteristics(I)

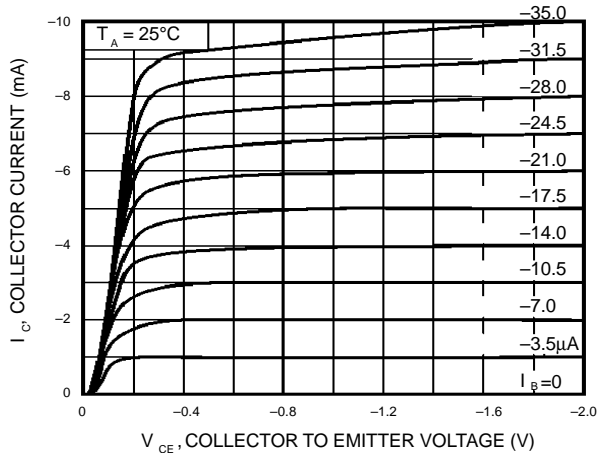


Fig.3 Grounded emitter output characteristics(II)

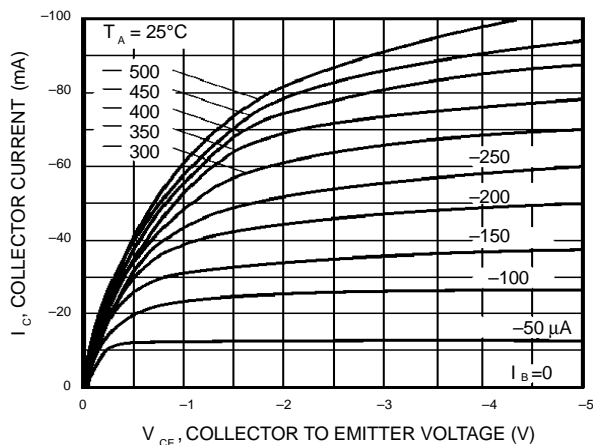


Fig.4 DC current gain vs. collector current (I)

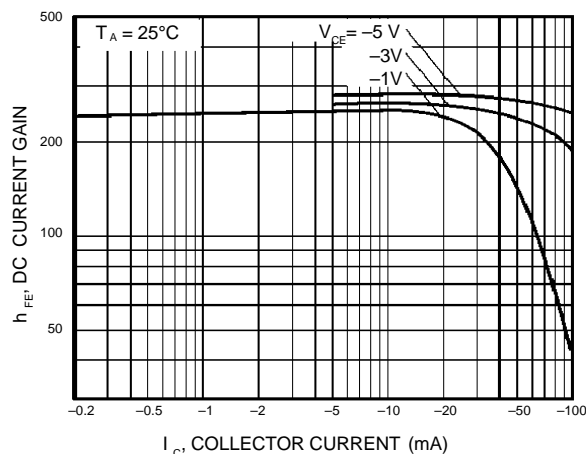


Fig.5 DC current gain vs. collector current (II)

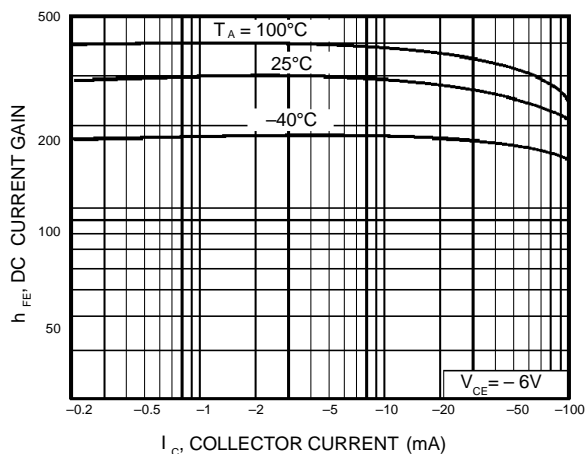
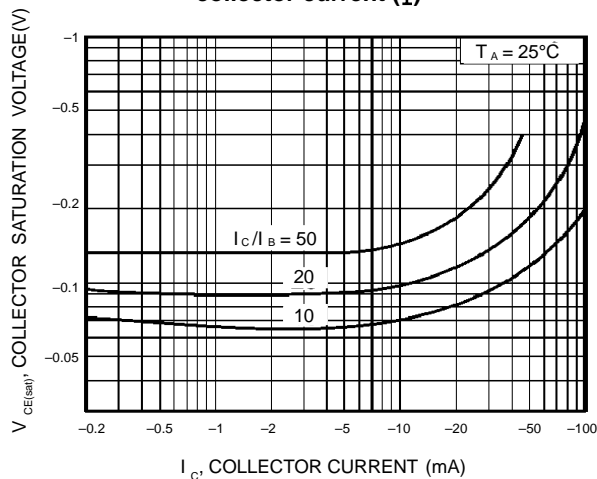
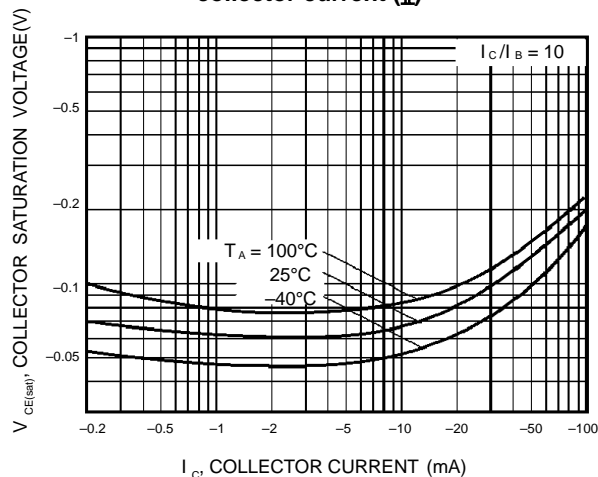


Fig.6 Collector-emitter saturation voltage vs. collector current (I)

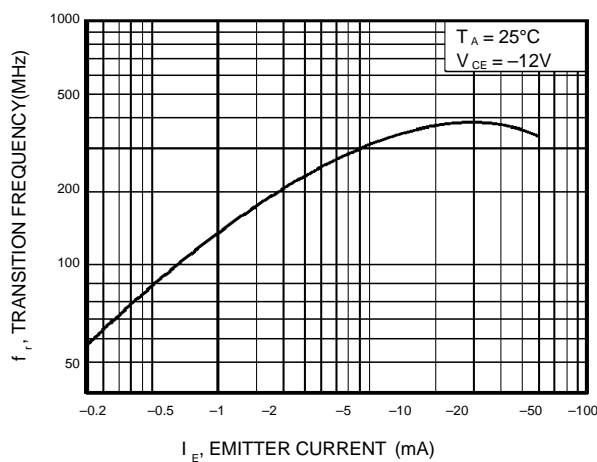


## L2SA812QLT1G Series S-L2SA812QLT1G Series

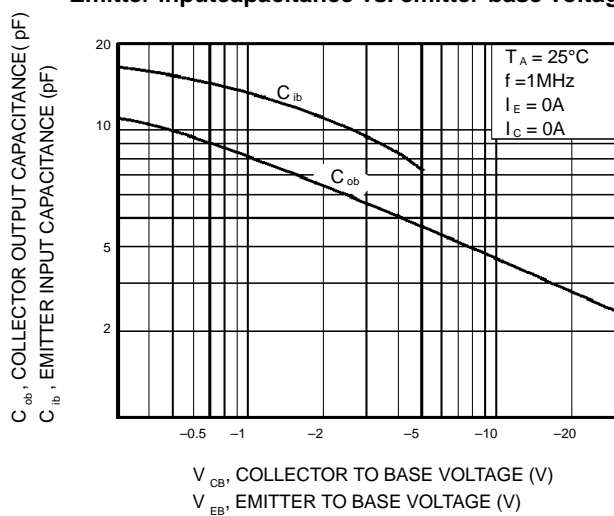
**Fig.7 Collector-emitter saturation voltage vs. collector current (I)**



**Fig.8 Gain bandwidth product vs. emitter current**



**Fig.9 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage**

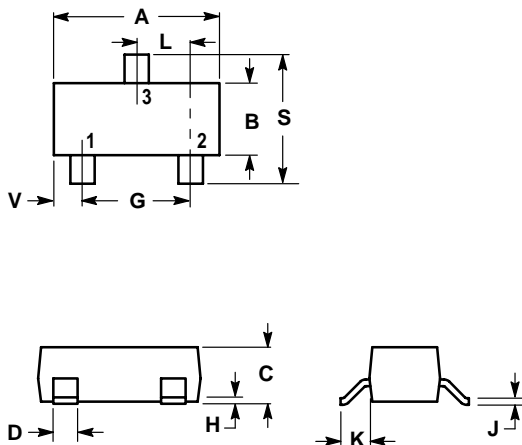


**L2SA812QLT1G Series**  
**S-L2SA812QLT1G Series**

**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

