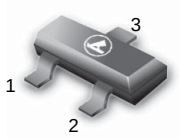
General Purpose Transistors

L2SA812*LT1

FEATURE

- High Voltage: V_{CEO} = -50 V.
- Epitaxial planar type.
- NPN complement: L2SC1623
- Pb-Free Package is available.



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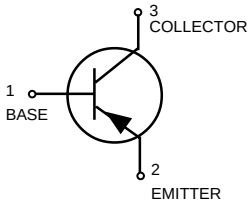

DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
L2SA812QLT1	M8	3000/Tape&Reel
L2SA812QLT1G	M8 (Pb-Free)	3000/Tape&Reel
L2SA812RLT1	M6	3000/Tape&Reel
L2SA812RLT1G	M6 (Pb-Free)	3000/Tape&Reel
L2SA812SLT1	M7	3000/Tape&Reel
L2SA812SLT1G	M7 (Pb-Free)	3000/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	Ic	-150	mAdc

THERMAL CHARATEERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (1)	P_D		
T_A=25°C		200	mW
Derate above 25°C		1.8	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation	P_D		
Alumina Substrate, (2) T_A=25 °C		200	mW
Derate above 25°C		2.4	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	Tj ,Tstg	-55 to +150	°C

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ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I_C=-1mA)	$V_{(BR)CEO}$	-50	-	-	V
Emitter-Base Breakdown Voltage (I_E=-50 μA)	$V_{(BR)EBO}$	-6	-	-	V
Collector-Base Breakdown Voltage (I_C=-50 μA)	$V_{(BR)CBO}$	-60	-	-	V
Collector Cutoff Current (V_{CB}=-50V)	I_{CBO}	-	-	-0.1	μA
Emitter Cutoff Current (V_{BE}=-6V)	I_{EBO}			-0.1	μA
ON CHARACTERISTICS					
DC Current Gain (I_C=−1mA,V_{CE}=−6.0V)	h_{FE}	120	-	560	
Collector-Emitter Saturation Voltage (I_C=−100mA,I_B=−10mA)	$V_{CE(sat)}$	-	-0.18	-0.3	V
Base -Emitter On Voltage I_E=−1.0mA,V_{CE}=−6.0V)	V_{BE}	-0.58	-0.62	-0.68	V
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain-Bandwidth Product (V_{CE}=−6.0V,I_E =−10mA)	Ft	-	180	-	MHz
Output Capacitance(V_{CE} = −10V, I_E=0, f=1.0MHz)	Cobo	-	4.5	-	pF

h_{FE} Values are classified as followes

NOTE:

*	Q	R	S
h_{FE}	120~270	180~390	270~560

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Fig.1 Grounded emitter propagation characteristics

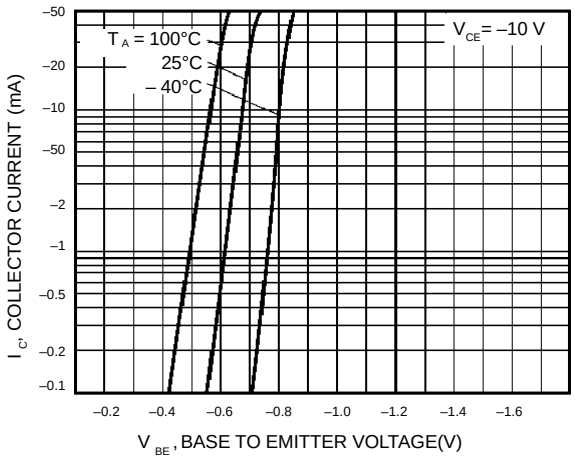

Fig.2 Grounded emitter output characteristics(Ⅰ)

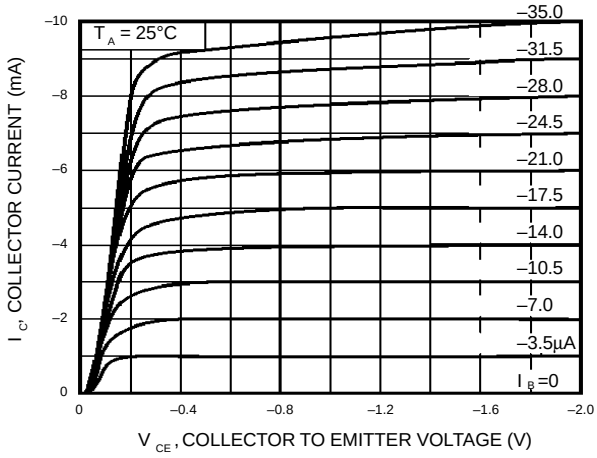

Fig.3 Grounded emitter output characteristics(Ⅱ)

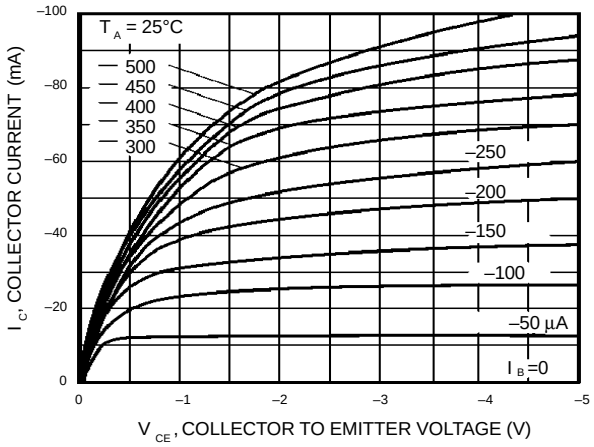

Fig.4 DC current gain vs. collector current (Ⅰ)

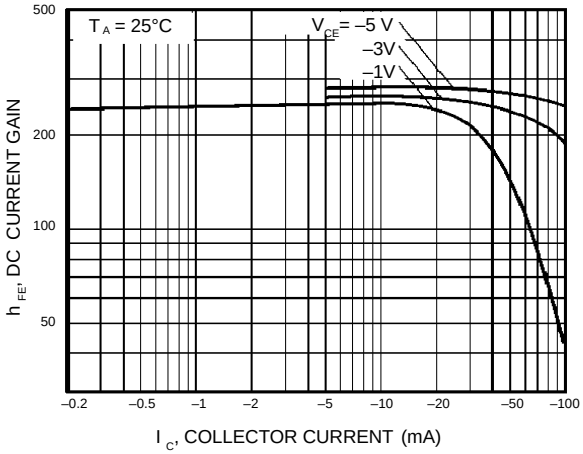

Fig.5 DC current gain vs. collector current (Ⅱ)

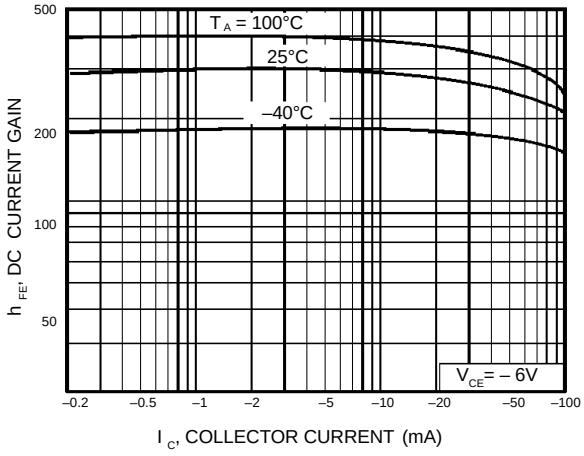

Fig.6 Collector-emitter saturation voltage vs. collector current (Ⅰ)

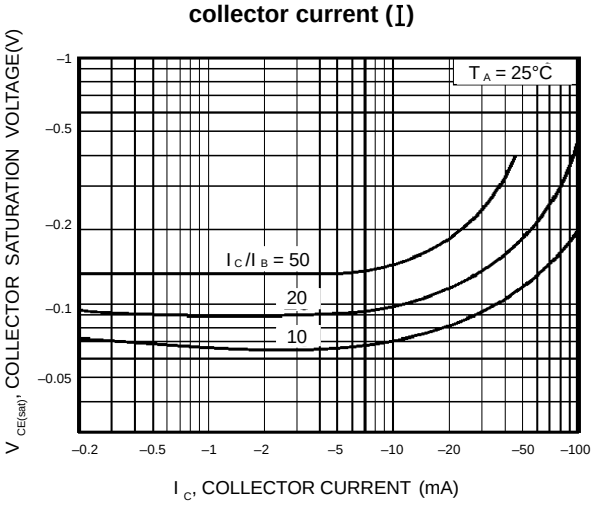

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Fig.7 Collector-emitter saturation voltage vs. collector current (Ⅱ)

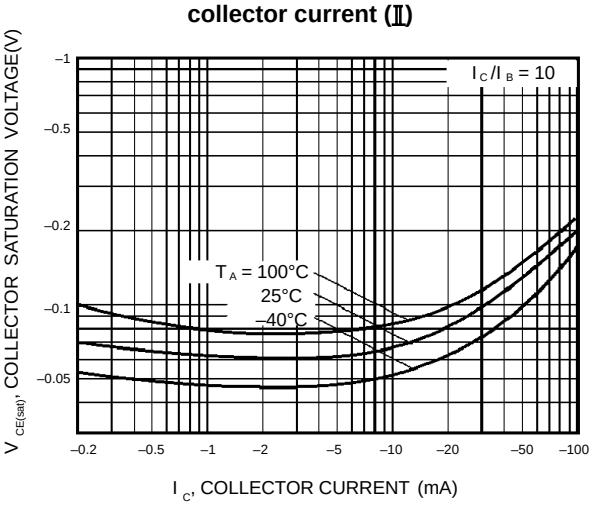


Fig.8 Gain bandwidth product vs. emitter current

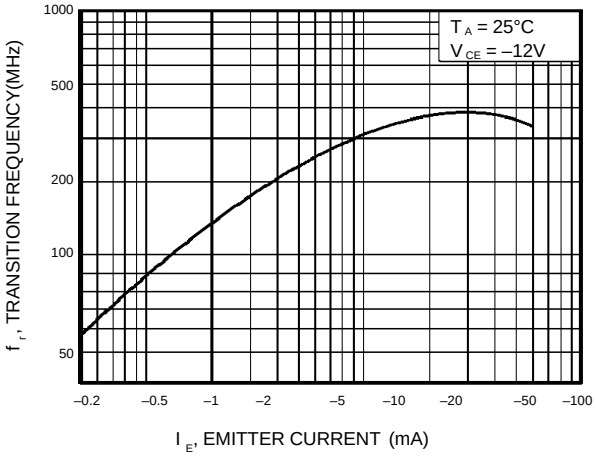
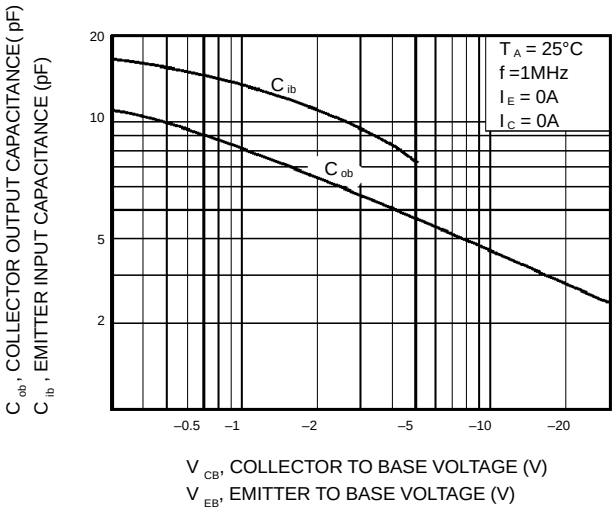


Fig.9 Collector output capacitance vs.collector-base voltage
Emitter inputcapacitance vs. emitter-base voltage



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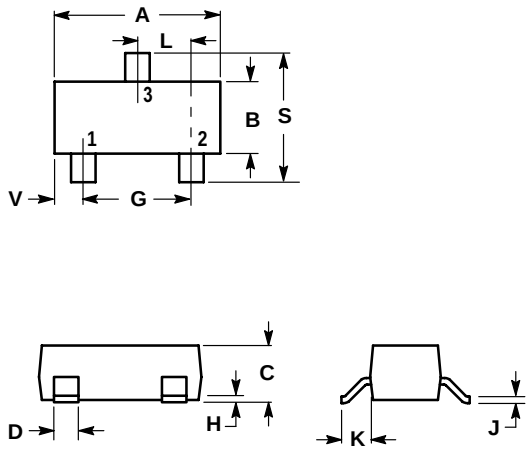
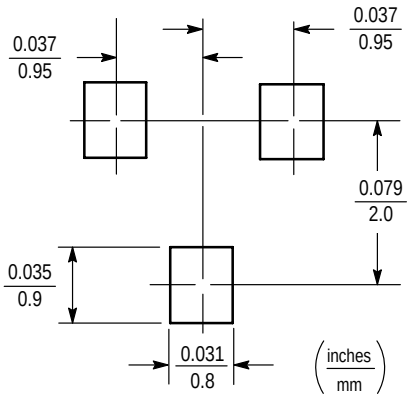


NOTES:

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