WILLAS

RoHS COMPLIANT

General Purpose Transistors

2SA812xLT1

FEATURE

- High Voltage: V_{CEO} = -50 V.
- Epitaxial planar type.
- NPN complement: 2SC1623
- We declare that the material of product compliance with RoHS requirements.

Pb-Free package is available

RoHS product for packing code suffix "G"

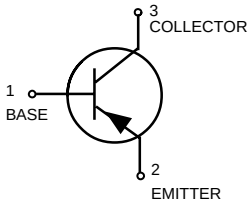
Halogen free product for packing code suffix "H"

Moisture Sensitivity Level 1

SOT-23

DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
2SA812QLT1	M8	3000/Tape&Reel
2SA812RLT1	M6	3000/Tape&Reel
2SA812SLT1	M7	3000/Tape&Reel



MAXIMUM RATINGS

Rating	Symbol	2SA812	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)	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

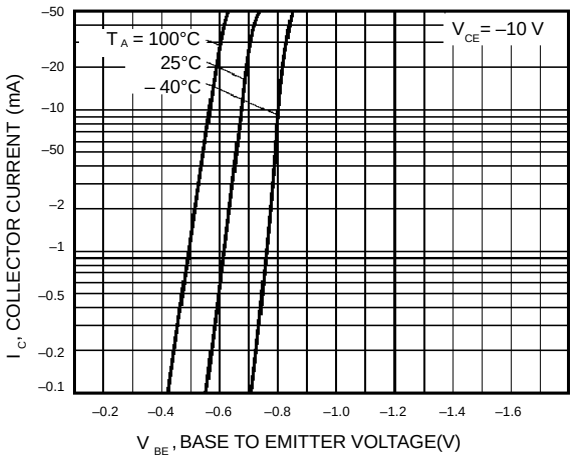


Fig.2 Grounded emitter output characteristics(Ⅰ)

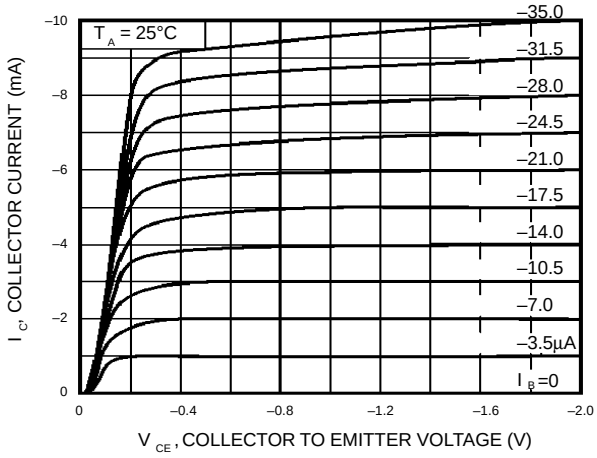


Fig.3 Grounded emitter output characteristics(Ⅱ)

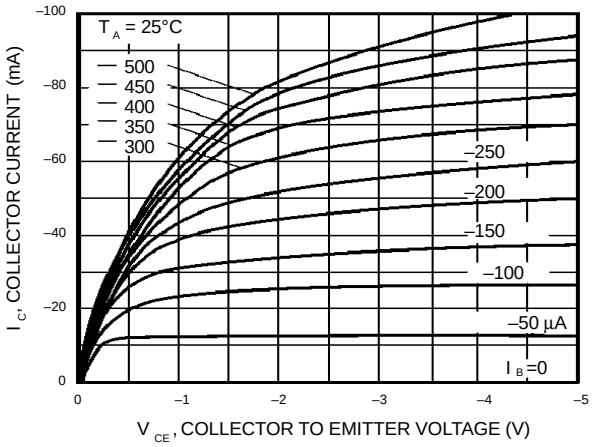


Fig.4 DC current gain vs. collector current (Ⅰ)

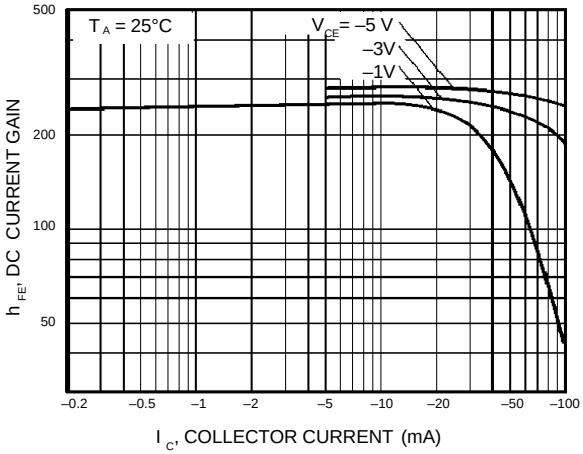


Fig.5 DC current gain vs. collector current (Ⅱ)

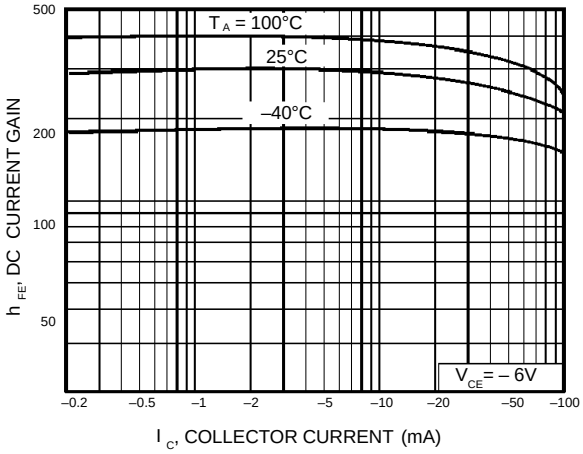


Fig.6 Collector-emitter saturation voltage vs. collector current (Ⅰ)

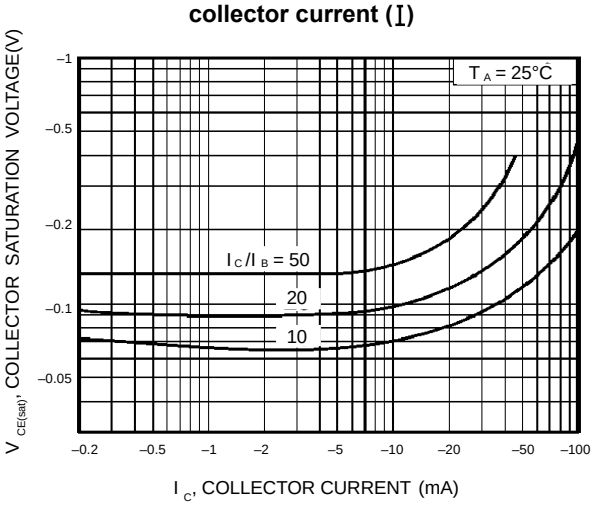


Fig.7 Collector-emitter saturation voltage vs. collector current (Ⅱ)

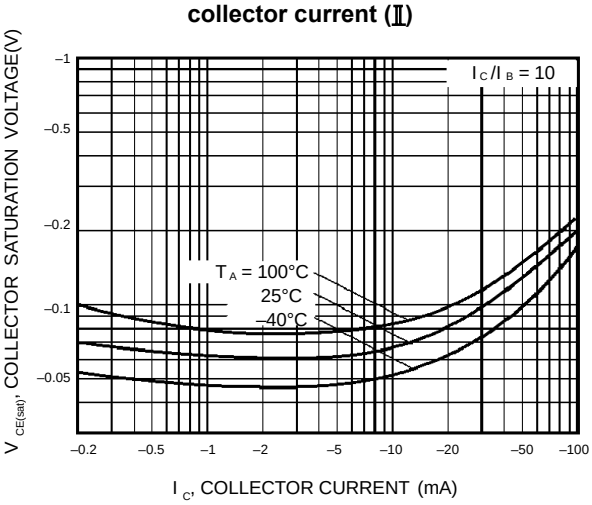


Fig.8 Gain bandwidth product vs. emitter current

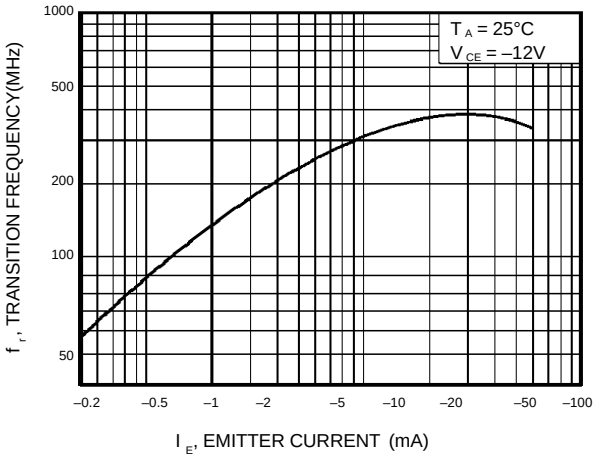
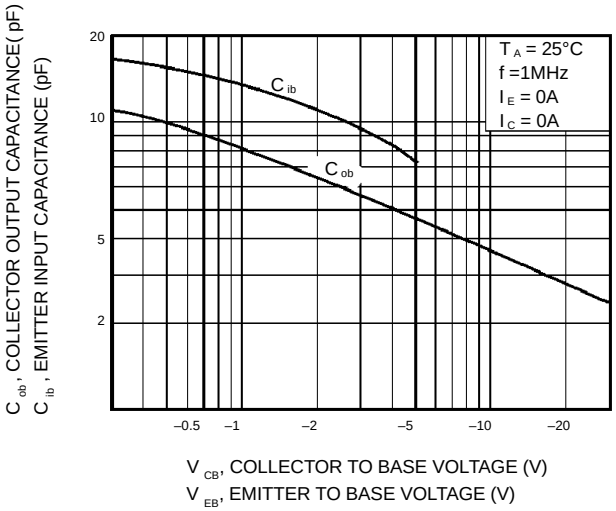
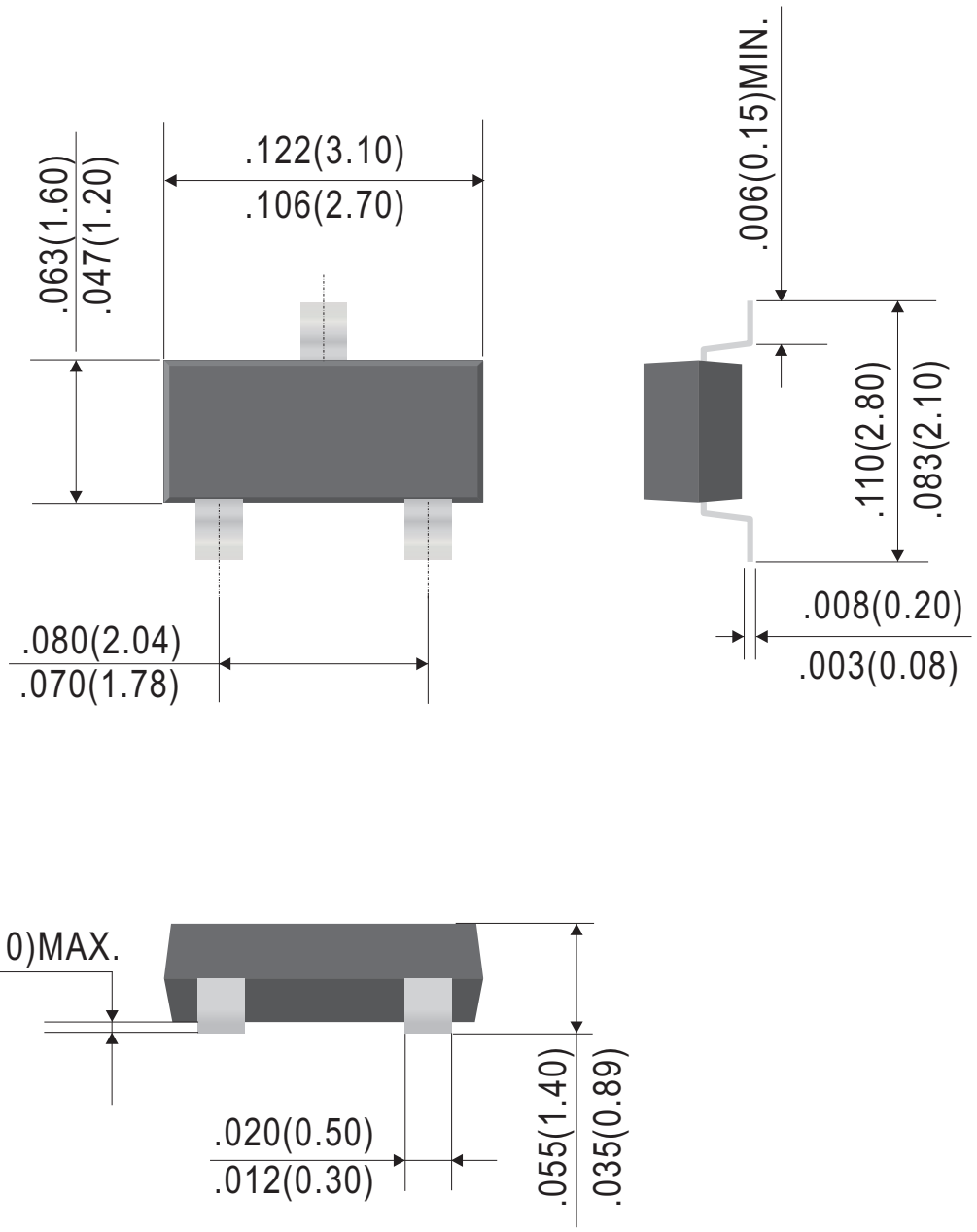


Fig.9 Collector output capacitance vs.collector-base voltage
Emitter inputcapacitance vs. emitter-base voltage



SOT–23



Dimensions in inches and (millimeters)

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Ordering Information:

Device PN	Packing
2SA812 x[(2)]LT1 G[(1)]-WS	Tape&Reel: 3 Kpcs/Reel

Note: (1) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

(2) CLASSIFICATION OF h_{FE} RANK