

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"

### 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) $T_A=25^\circ\text{C}$	$P_D$	225	mW
Derate above $25^\circ\text{C}$		1.8	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate, (2) $T_A=25^\circ\text{C}$	$P_D$	300	mW
Derate above $25^\circ\text{C}$		2.4	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	$^\circ\text{C}$

### DEVICE MARKING

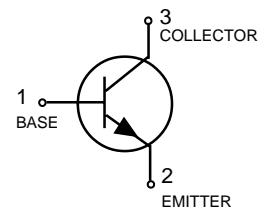
2SC1623QLT1=L5	2SC1623RLT1=L6	2SC1623SLT1=L7
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### ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
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### OFF CHARACTERISTICS

Collector Cutoff Current ( $V_{CB}=60\text{V}$ )	$I_{CBO}$	-	-	0.1	$\mu\text{A}$
Emitter Cutoff Current ( $V_{BE}=5\text{V}$ )	$I_{EBO}$			0.1	$\mu\text{A}$



**ON CHARACTERISTICS**

DC Current Gain ( $I_C=1.0mA, V_{CE}=6V$ )	$h_{FE}$	120	-	560	
Collector-Emitter Saturation Voltage ( $I_C=100mA, I_B=10mA$ )	$V_{CE(sat)}$	-	0.15	0.3	V
Base-Emitter Saturation Voltage ( $I_C=100mA, I_B=10mA$ )	$V_{BE(sat)}$	-	0.86	1.0	V
Base -Emitter On Voltage ( $I_C=1mA, V_{CE}=6.0V$ )	$V_{BE}$	0.55	0.62	0.65	V

**SMALL-SIGNAL CHARACTERISTICS**

Current-Gain-Bandwidth Product ( $V_{CE}=6.0V, I_E=1.0MHz$ )	$F_t$	-	250	-	MHz
Output Capacitance( $V_{CE}=6V, I_E=0, f=1.0MHz$ )	$C_{ob}$	-	3	-	Pf

$h_{FE}$  Values are classified as follows

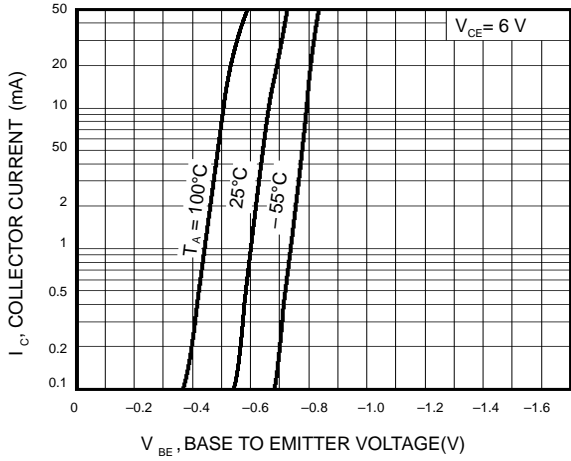
NOTE:

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

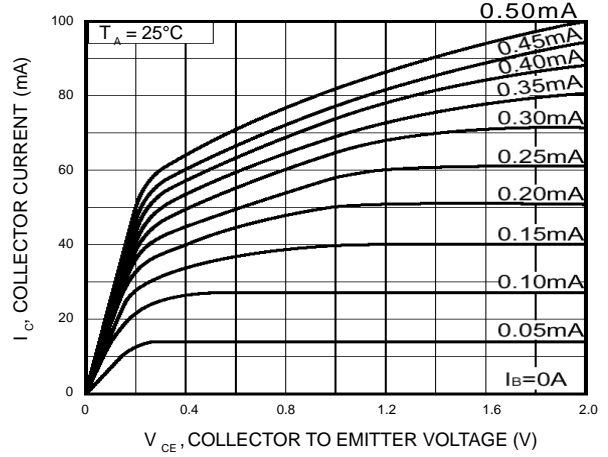
**DEVICE MARKING AND ORDERING INFORMATION**

Device	Marking	Shipping
2SC1623QLT1	L5	3000/Tape&Reel
2SC1623RLT1	L6	3000/Tape&Reel
2SC1623SLT1	L7	3000/Tape&Reel

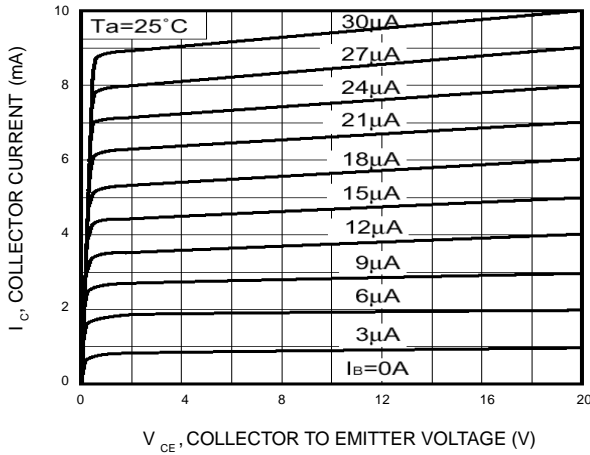
**Fig.1** Grounded emitter propagation characteristics



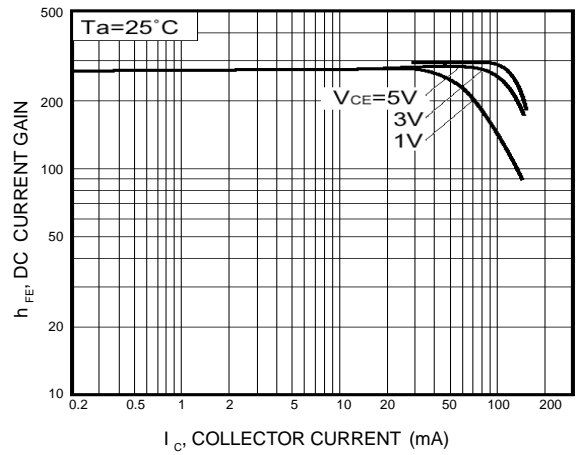
**Fig.2** Grounded emitter output characteristics(I)



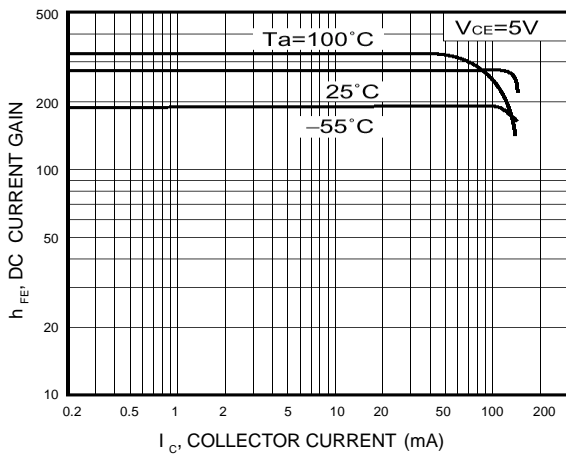
**Fig.3** Grounded emitter output characteristics(II)



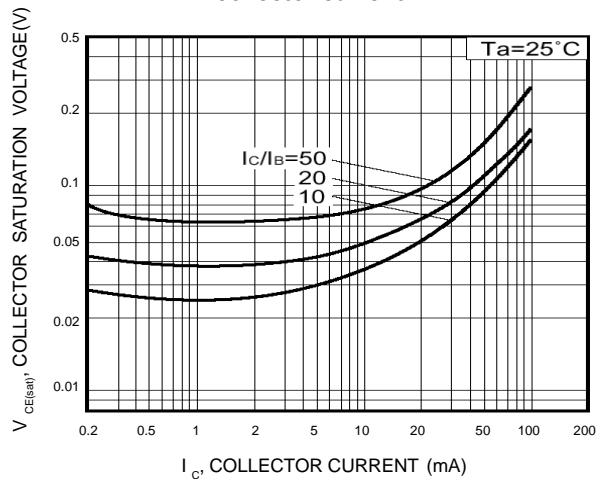
**Fig.4** DC current gain vs. collector current (I)



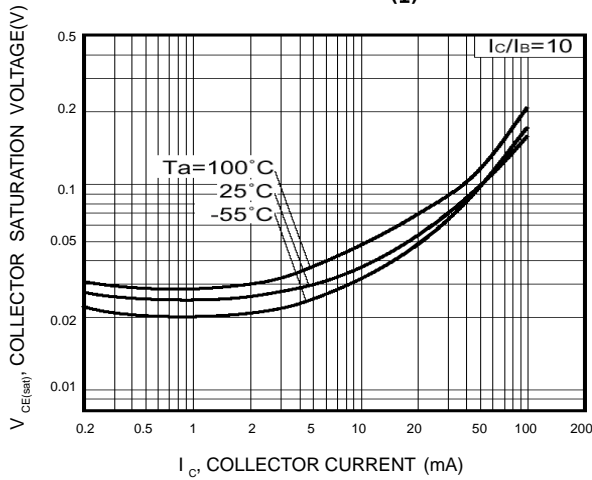
**Fig.5** DC current gain vs. collector current (II)



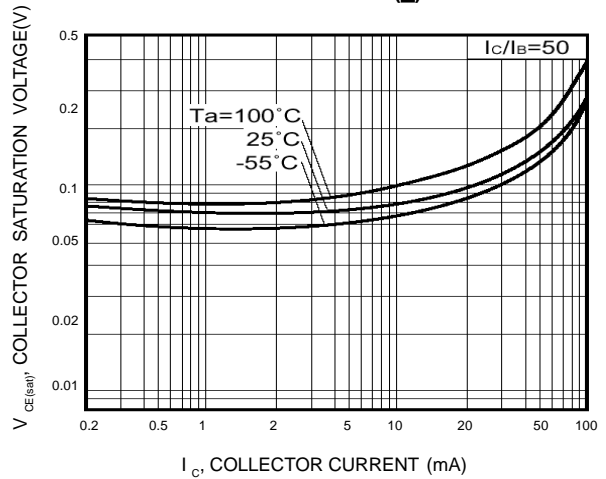
**Fig.6** Collector-emitter saturation voltage vs. collector current



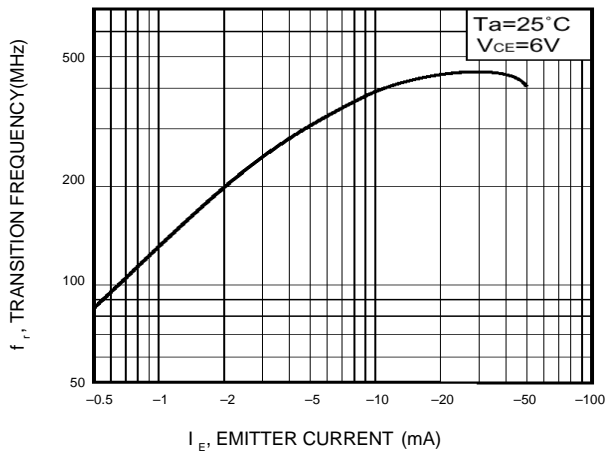
**Fig.7 Collector-emitter saturation voltage vs. collector current (I)**



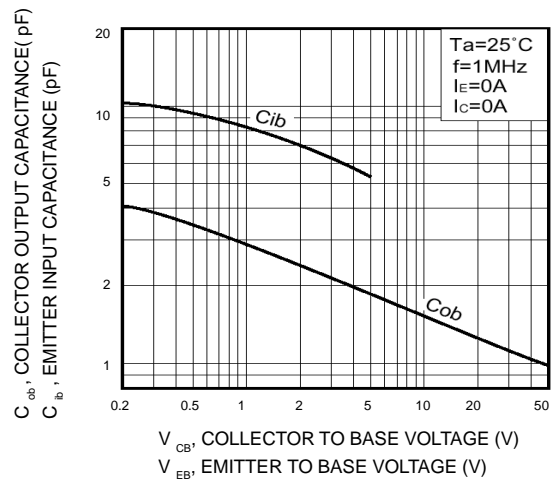
**Fig.8 Collector-emitter saturation voltage vs. collector current (II)**



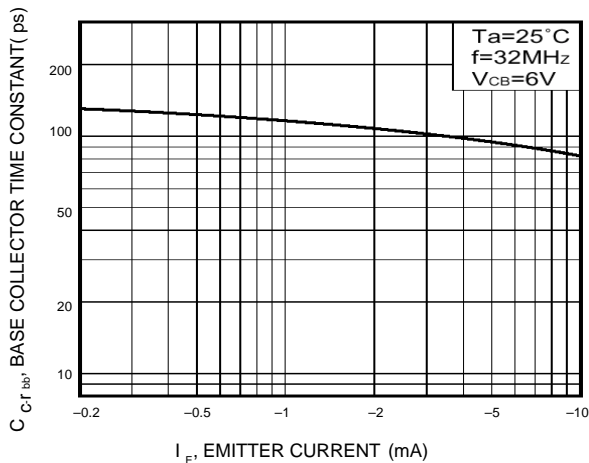
**Fig.9 Gain bandwidth product vs. emitter current**



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



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





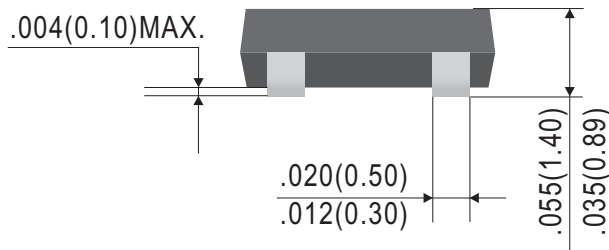
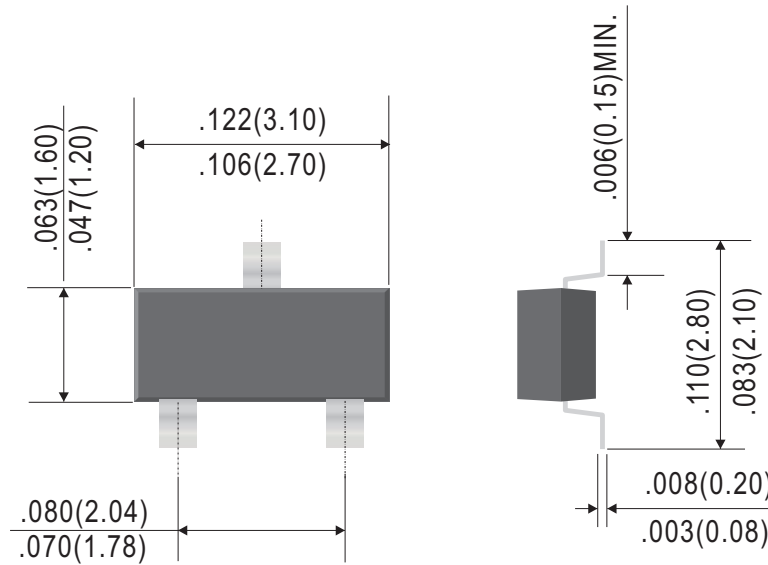
# WILLAS



## General Purpose Transistors

# 2SC1623xLT1

### SOT-23



Dimensions in inches and (millimeters)

