

/ Descriptions

Silicon NPN transistor in a SOT-23 Plastic Package.

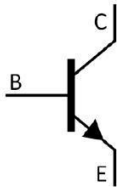
/ Features

Excellent h_{FE} linearity, high h_{FE} , low noise. HF Product.

/ Applications

General amplifier and switching application.

/ Equivalent Circuit



/ Pinning



PIN 1 Base PIN 2 Emitter PIN 3 Collector

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	O	Y	GR	BL
h_{FE} Range	70 140	120 240	200 400	350 700
Marking	HALO	HALY	HALG	HALB

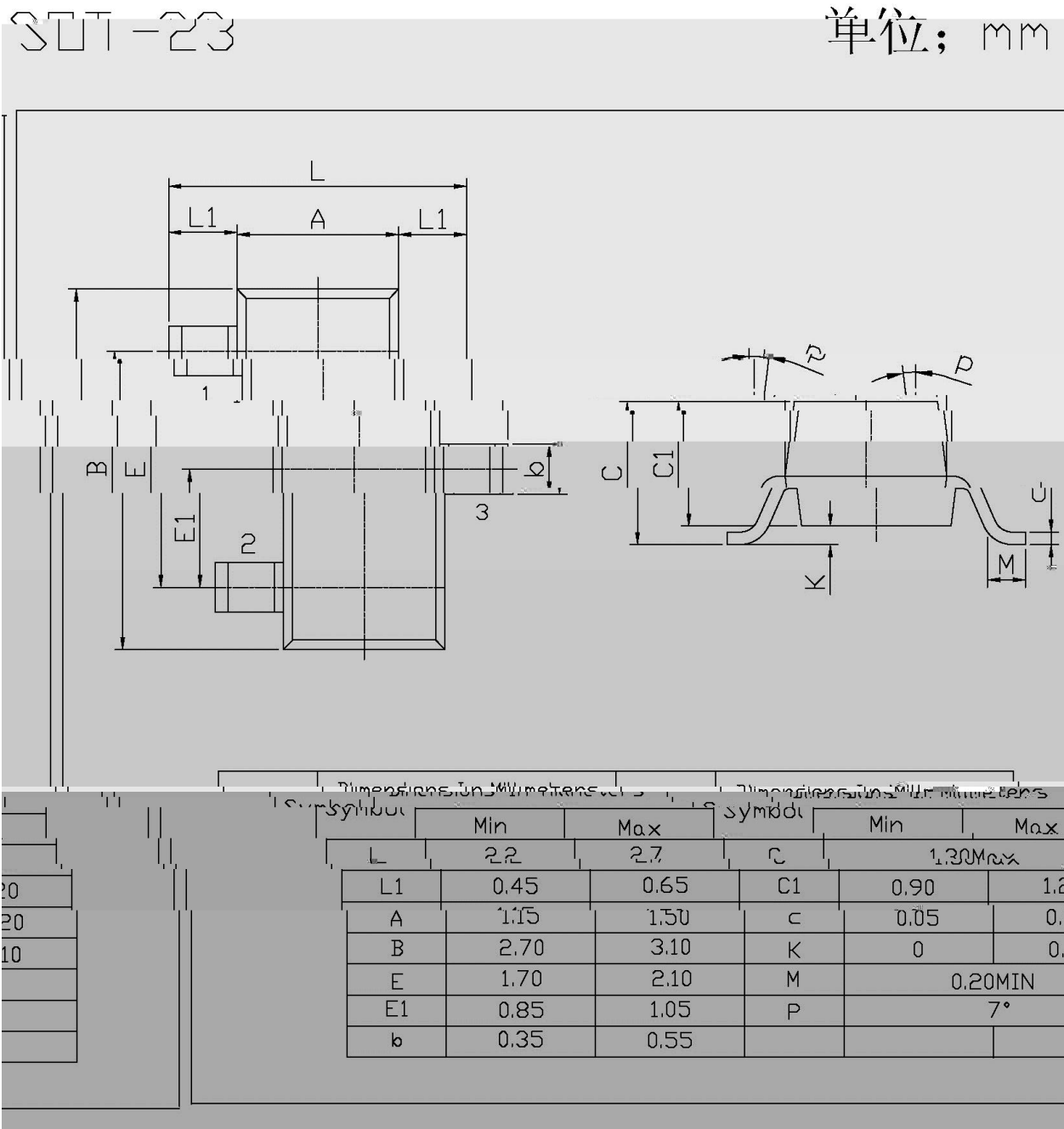
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	50	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	150	mA
Base Current	I_B	30	mA
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Breakdown Voltage	V_{CBO}	I_C $I_E=0$	60			V
Collector to Base Breakdown Voltage	V_{CEO}	I_C $I_B=0$	50			V
Emitter to Base Breakdown Voltage	V_{EBO}	I_E $I_C=0$	5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=60V$ $I_E=0$			0.1	
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5.0V$ $I_C=0$			0.1	
DC Current Gain	h_{FE}	$V_{CE}=6.0V$ $I_C=2.0mA$	70		700	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100mA$ $I_B=10mA$		0.1	0.25	V
Transition Frequency	f_T	$V_{CE}=10V$ $I_C=1.0mA$	80			MHz
Collector output capacitance	C_{ob}	V_C				

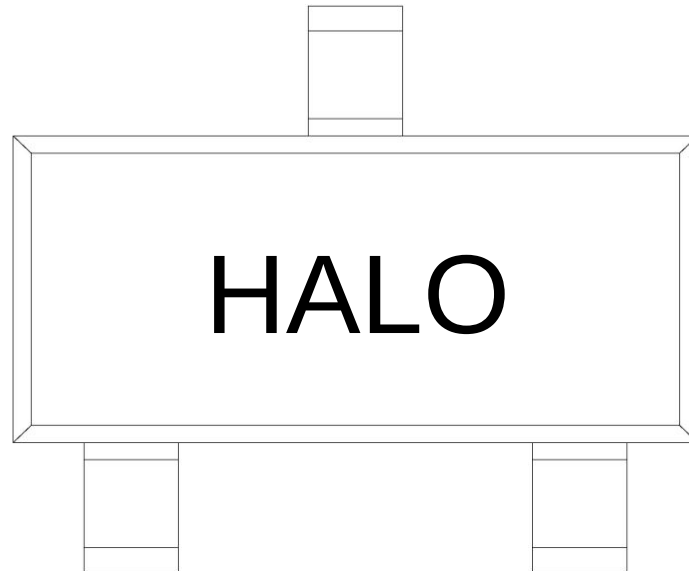
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



Note:

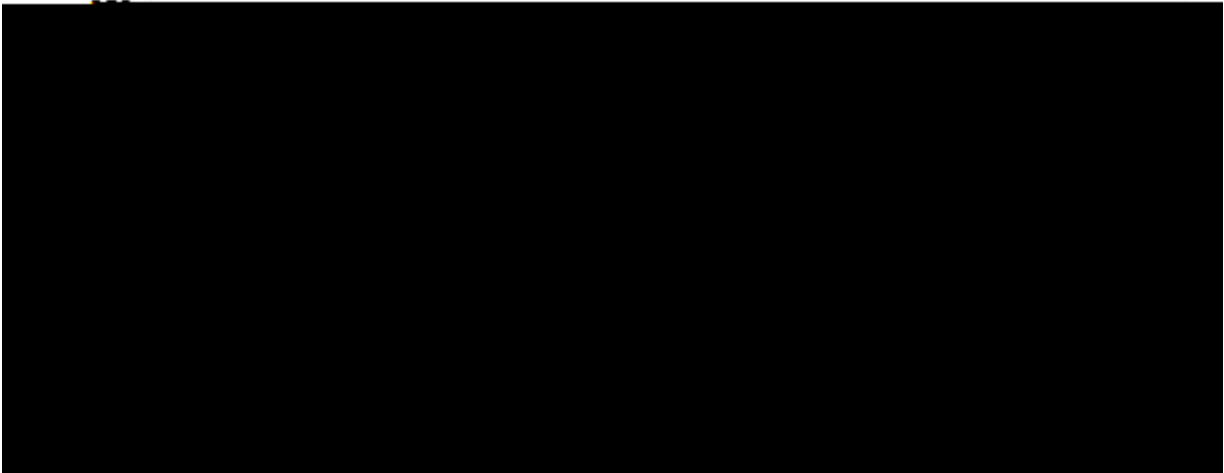
Company Code

AL

Product Type

h_{FE} Classifications Symbol

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Note:

- 1

25 150

60 90sec;
- 2

245 5

5 0.5sec;
- 3

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2 10 /sec.
- 1.Preheating:25~150

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Time:60~90sec.
- 2.Peak Temp.:245 5

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Duration:5 0.5sec.
3. Cooling Speed: 2~10

/sec.

/ Resistance to Soldering Heat Test Conditions

260 5

10 1 sec.

Temp.:260 5

Time:10 1 sec

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	只 卷盘	卷盘 盒	只 盒	盒 箱	只 箱		盒	箱

/ Notices