

1. Electrical Characteristics

1.1 Maximum Ratings

Parameter	Symbol	Rating	Unit
Maximum Input Current	I_{max}	20 (at 25°C)	mA
Maximum Power Dissipation	P_{max}	150 (at 25°C)	mW
Operating Temperature Range	T_{op}	-40 ~ +110	°C
Storage Temperature Range	T_{st}	-40 ~ +125	°C

1.2 Electrical Characteristics (Measured at 25°C)

Parameter	Symbol	Measurement Conditions	Min	Max	Unit
Output Hall Voltage	V_H	$V_{in}=1V, B=500 GS$	196	370	mV
Input Resistance	R_{in}	$I=0.1mA$	240	550	Ω
Output Resistance	R_{out}	$I=0.1mA$	240	550	Ω
Offset Voltage	V_o	$V_{in}=1V, B=0G$	-7	+7	mV
Temp. Coeff. of V_H	α	$T_a=0\sim +40^\circ C$	-	-1.8	% /°C
Temp. Coeff. Of R_{in}, R_{out}	β	$T_a=0\sim +40^\circ C$	-	-1.8	% /°C

1.3 Rank Classification and Mark on Output Hall Voltage

Output Hall Voltage, V_H (mV)	Rank	Mark	Measurement Conditions
196 -236	D	X D	$V_{in}=1V, B=500 GS$ (Constant Voltage)
228-274	E	X E	
266-320	F	X F	
320-370	G	X G	

2. Method for Mounting

2.1 Lead Frame

1、The material of lead frame is phosphor bronze alloy and the die bonded surface is plated by silver. The minimum thickness of plating is 3.0 μm .

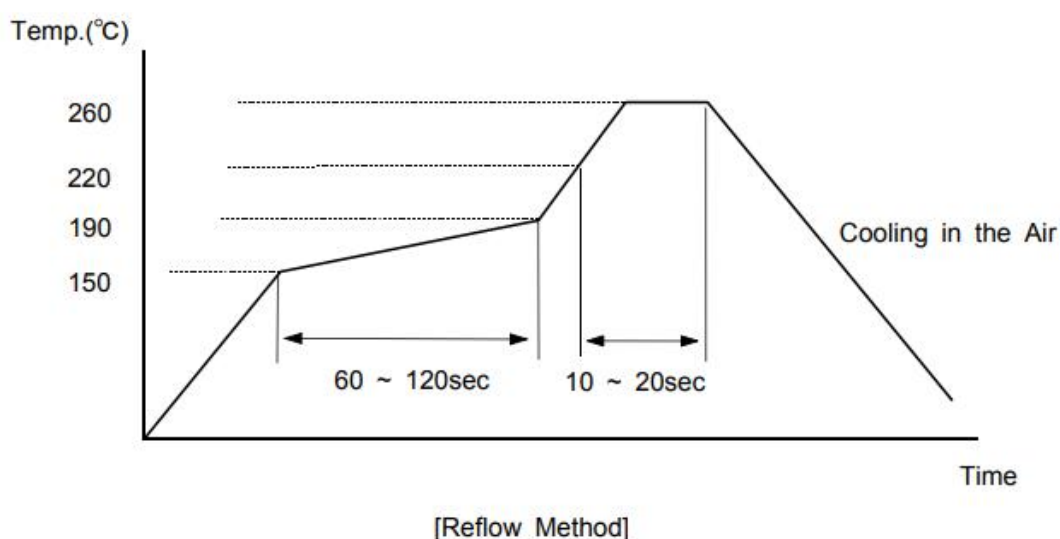
2、Lead Frame is plated by pure Sn and the thickness is controlled by 4-12 μm .

2.2 Soldering Conditions on PCB

- 1、No rapid heating and cooling is desired.
- 2、Preheating is recommended for 1~2minutes at 150~190°C.
- 3、Reflowing is recommended for 10~20seconds at 220~260°C.

2.3 Soldering Method and Temperature

Items	Methods	Temperature
Reflow	Soldering by passing the heated zone	Max 260°C in 10sec
Solder Iron	Soldering by solder-iron	Max 350°C in 3sec

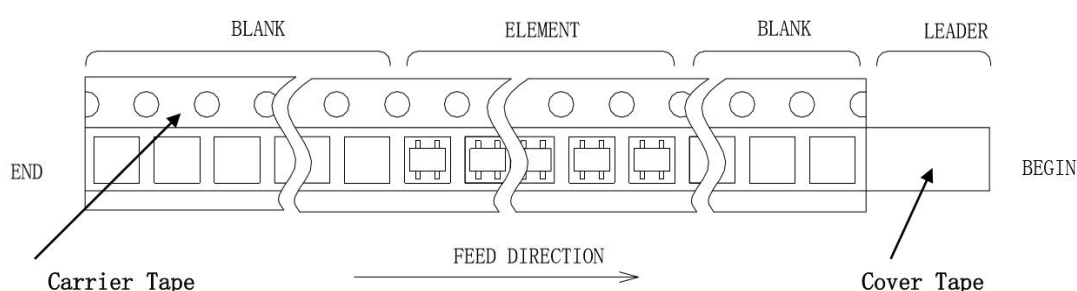


3. Packaging

3.1 Taping

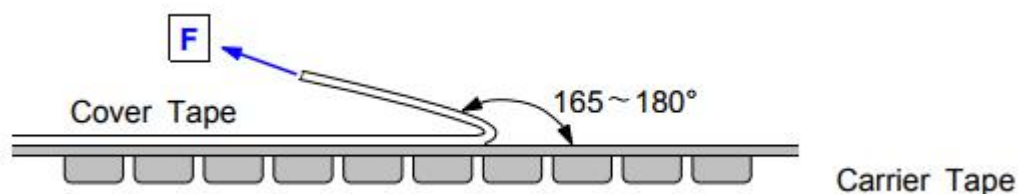
1、ES101 should be packed marking side to cover tape side and put long side to tape running direction. 180° rotation has no effect on the application.

2、At least, 40mm vacant parts are made both front and rear side of tape.



3.2 Handling Methods of Tape

1、Pull Strength(F) = 20~70g



2、Devices should not run out of a pocket when tape is bent down 15mm curvature.

3、Devices should not stick to cover tape.

4、Devices should be kept below 40°C and below RH80% in the shade.

5、Tape has no joint.

3.3 Packing Unit

1、3,000pcs of devices are packed in one reel.

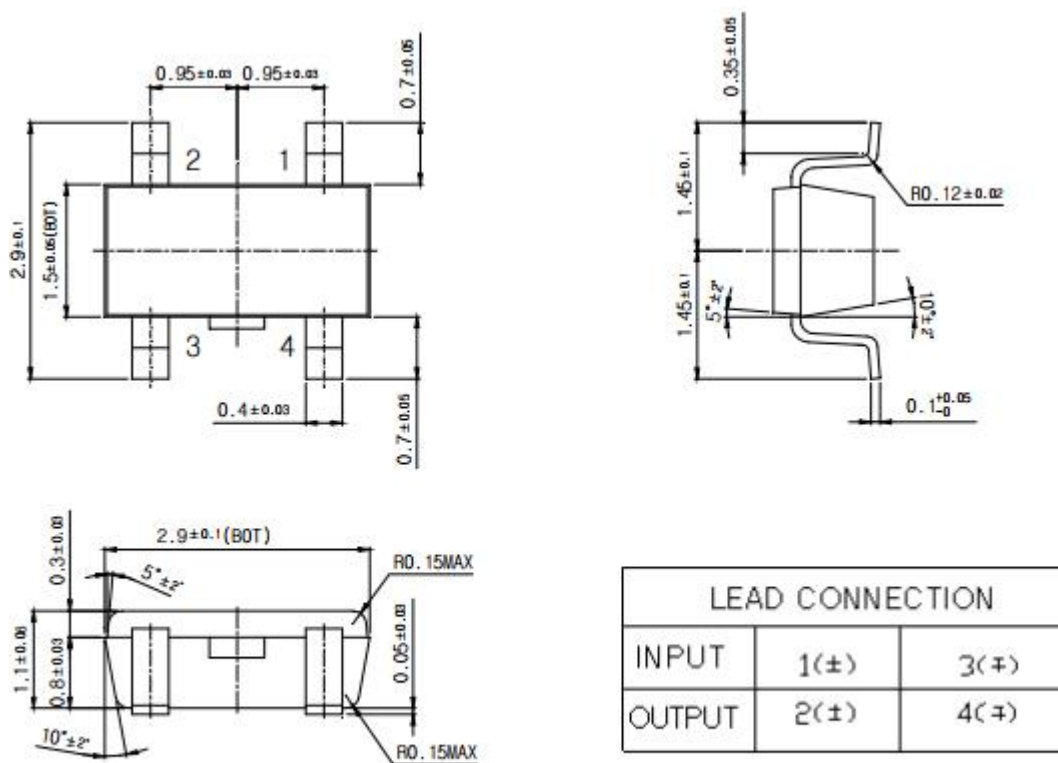
2、Five reels are packed in one inner box.

3、Four inner boxes, 60,000pcs of devices, are packed in one outer box.

4. External Dimensions and Appearance

4.1 Package (SOT143 Unit:mm)

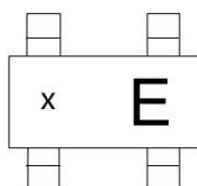
Four leads of input-output terminals are designed in the diagonally symmetric mode and are equal in dimensions. ES101 could be used without considering on the rotation of 180°.



[Package Dimensions]

4.2 Marking Method

Devices should be marked by LASER beam in the form of **【x + “Rank”】**.



X Inside Symbol: A、B、C、...
E Rank Symbol: D、E、F、G

5. Test Item and Condition

No	TEST Item	TEST Condition
1	HIGH TEMP. STORAGE	Ta=125°C, t=1000HR
2	HIGH TEMP. OPERATION	Ta=110°C, Iopr=10mA, t=1000HR
3	LOW TEMP. OPERATION	Ta=-40°C, Iopr=6mA, t=1000HR
4	HIGH TEMP. HIGH HUMIDITY OPERATION	Ta=85°C, HR=85%, Iopr=9mA, t=1000HR
5	PCT	Ta=121°C, HR=100%, Pv=2atm, t=24HR
6	THERMAL SHOCK	T (L)=-55°C, T (H)=125°C, t=(L, H)=30min, M=30CYCLE
7	HIGH HUMIDITY TEMPERATURE CYCLE	T (L)=-20°C, T (H)=85°C, t (L, H)=30min, HR=95%, M=40 CYCLE
8	SOLDERING HEAT RESISTANCE	Peak Temp=260°C, t=10sec, REFLOW
9	ESD (MM)	V=500V, C=200pF, R=0Ω (EIAJ TEST CONDITION)

6. Ordering Information

Part No.	Lead Type	Rank	Tape
ES101	A:Gull wing type	D、E、F、G	U: upward
	B: Straight type		D: downward