

SH 3016P-01 B

LOUDSPEAKER

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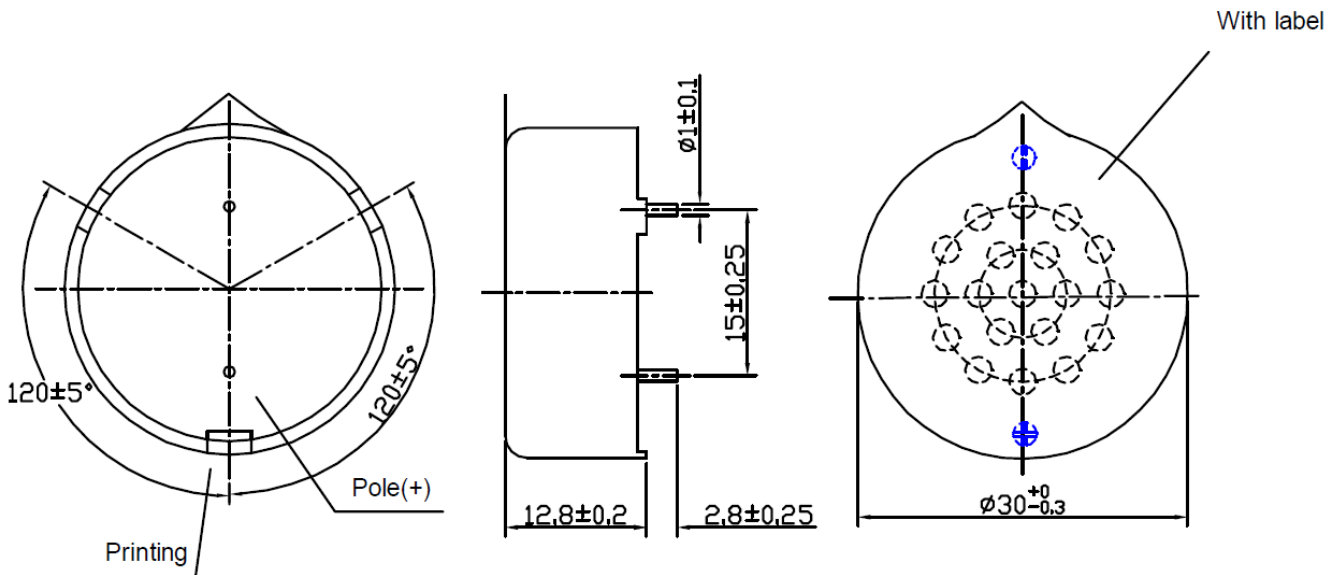
1. SPECIFICATIONS

Parameter	Unit	Conditions / Description	MIN	TYP	MAX
Impedance	Ω	At 2.000Hz	14.4	16	17.6
Input Power	W			0.8	1
Frequency Range	Hz		1.000		4.000
SPL	dB	Values are shown in 3.2			
Buzz & Rattle		Must be normal at sine wave 1.5V			
Voice Coil	\emptyset	Golden Colour		0.055 Cu	
Housing Colour				BLACK	
Contact				PIN	
Packaging				TRAY	
Operating Temperature	$^{\circ}\text{C}$		-40		+85
Storage Temperature	$^{\circ}\text{C}$		-40		+85
Weight	g			10	

DESIGNED BY	Ralf Hinnerichs	DATE	2011.09.26	PART NO.	SH 3016P-01 B	INDEX	B
RELEASED BY	Ralf Hinnerichs	DATE	2011.09.26				
CHANGED BY	Rabea Richter	DATE	2020.08.07				
DRAWING NO.	408124357						

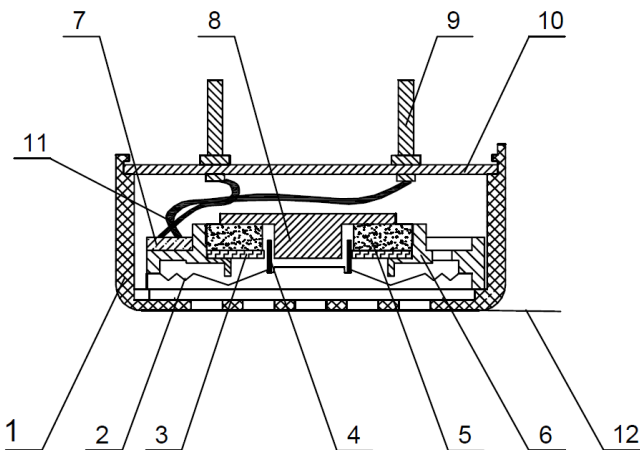
2. DRAWING

2.1 DIMENSIONS



Tolerance ± 0.2 Unit: mm

2.2 BILL OF MATERIAL

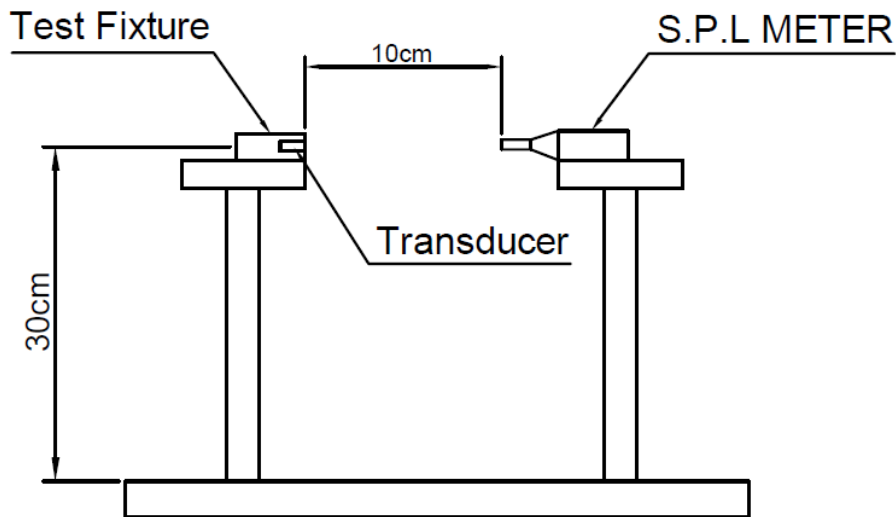


12	Washing Label	Paper
11	Connect wire	Cu and PVC
10	Plugboard	Epoxy and Cu
9	Pin	Cu $\Phi 1.0$ (plating Sn)
8	Yoke	SPCC
7	PCB	Epoxy and Cu (plating Sn)
6	Frame	Plastic MPPO +20% GF
5	Magnet	Nd-Fe-B N35H
4	Voice Coil	$\Phi 0.055$ Cu
3	Piece	SPCC, $\delta=0.6$ mm
2	Diaphragm	PEI, $\delta=0.05$ mm
1	Housing	Plastic MPPO +20% GF
No.	Part Name	Material

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3. TEST METHOD

3.1 TEST SETUP



3.2 SPL VALUES

Frequency Hz	Min SPL /dBA	Max SPL /dBA
720	87	97
750	87	97
900	87	97
1000	95	105
1600	90	100
1900	90	100
2000	90	100

3.3 TEST CONDITIONS

The test assembly is in free field or a test room with min 2m x2m ground and 2m high distance between loudspeaker and SPL meter=10cm

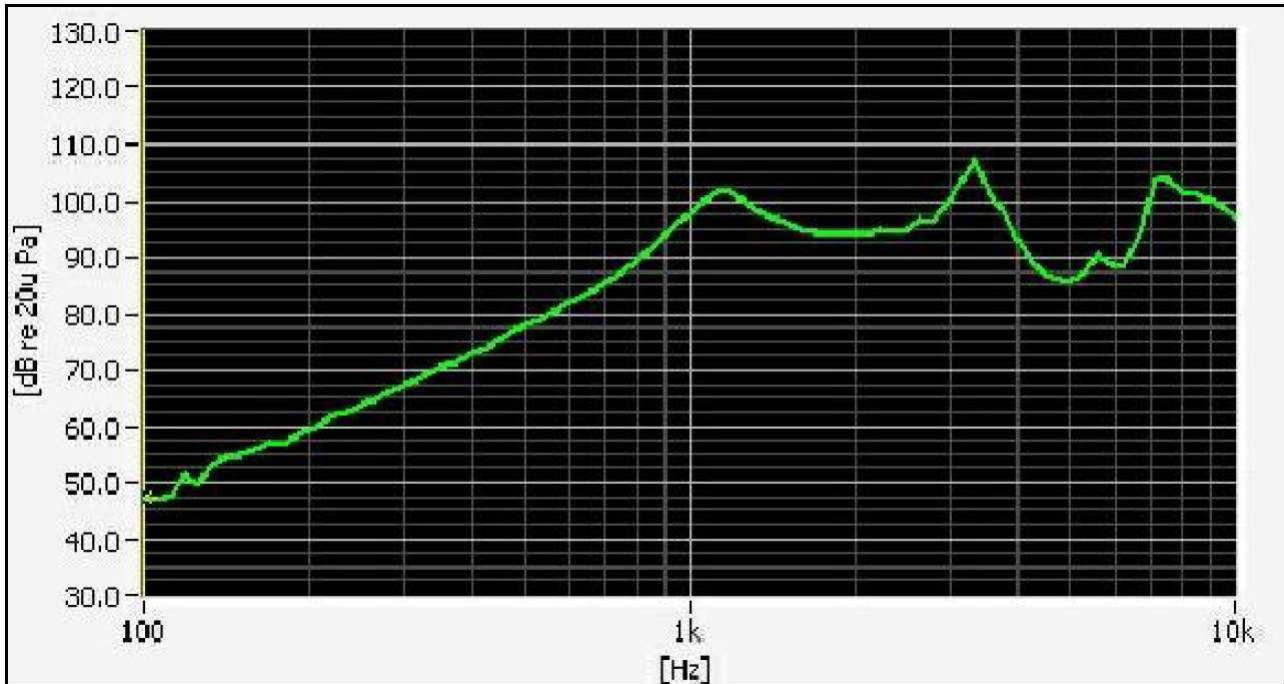
Trigger voltage is 3.6V0-p, 50% duty square wave signal

The trigger signal comes from a function generator FG100.

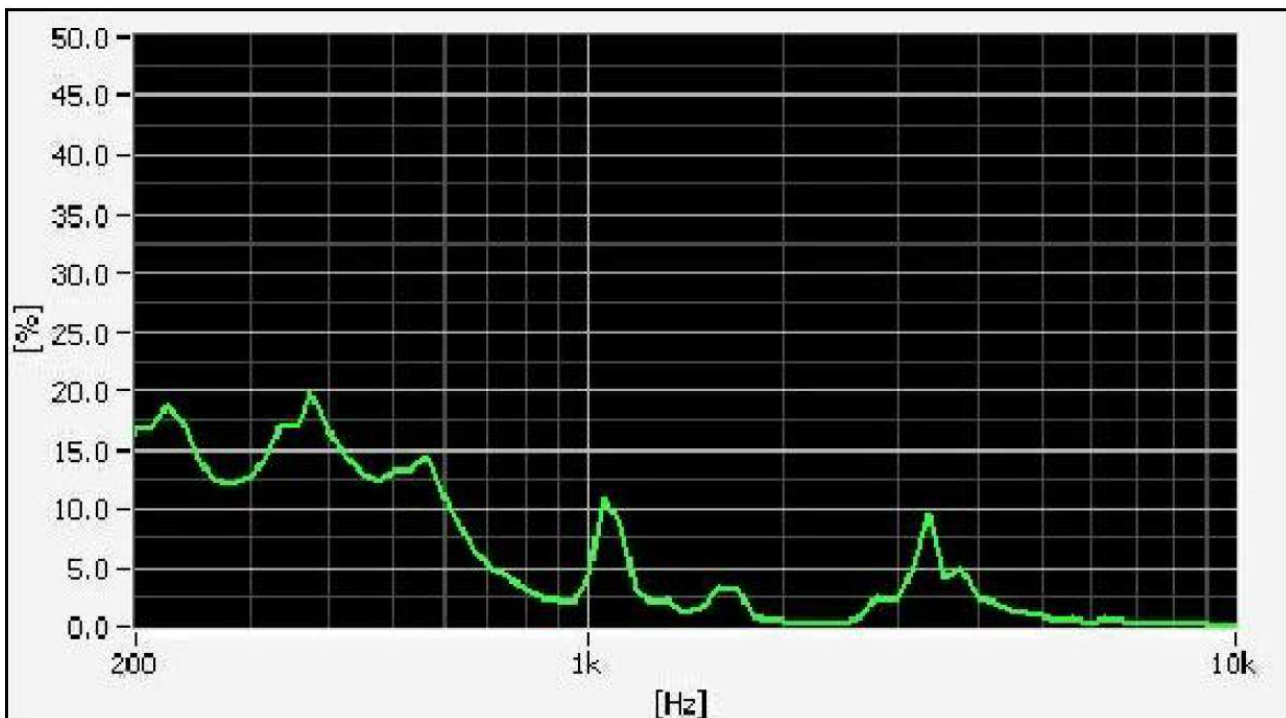
The trigger voltage is adjusted to 3.6V0-p constant voltage (in case of load)

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3.4 FUNDAMENTAL CURVE (sine wave 0.15W, 0.1m) only for reference

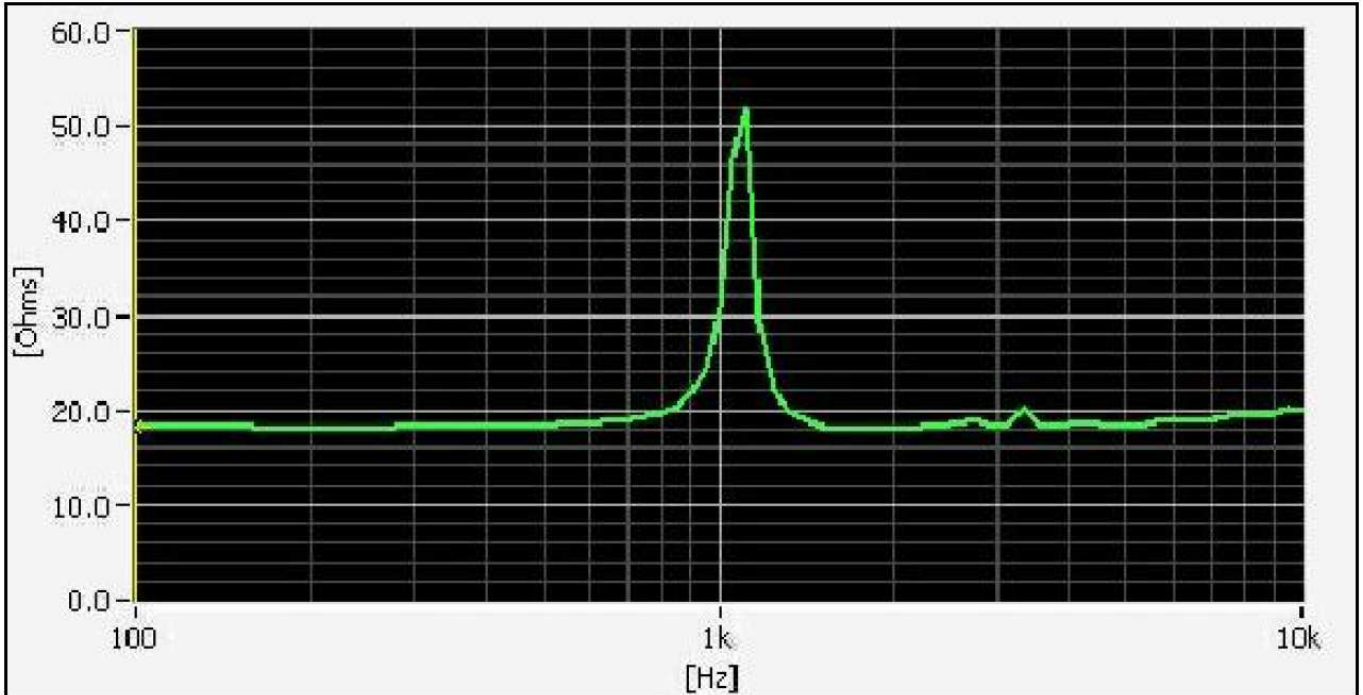


3.5. THD CURVE only for reference

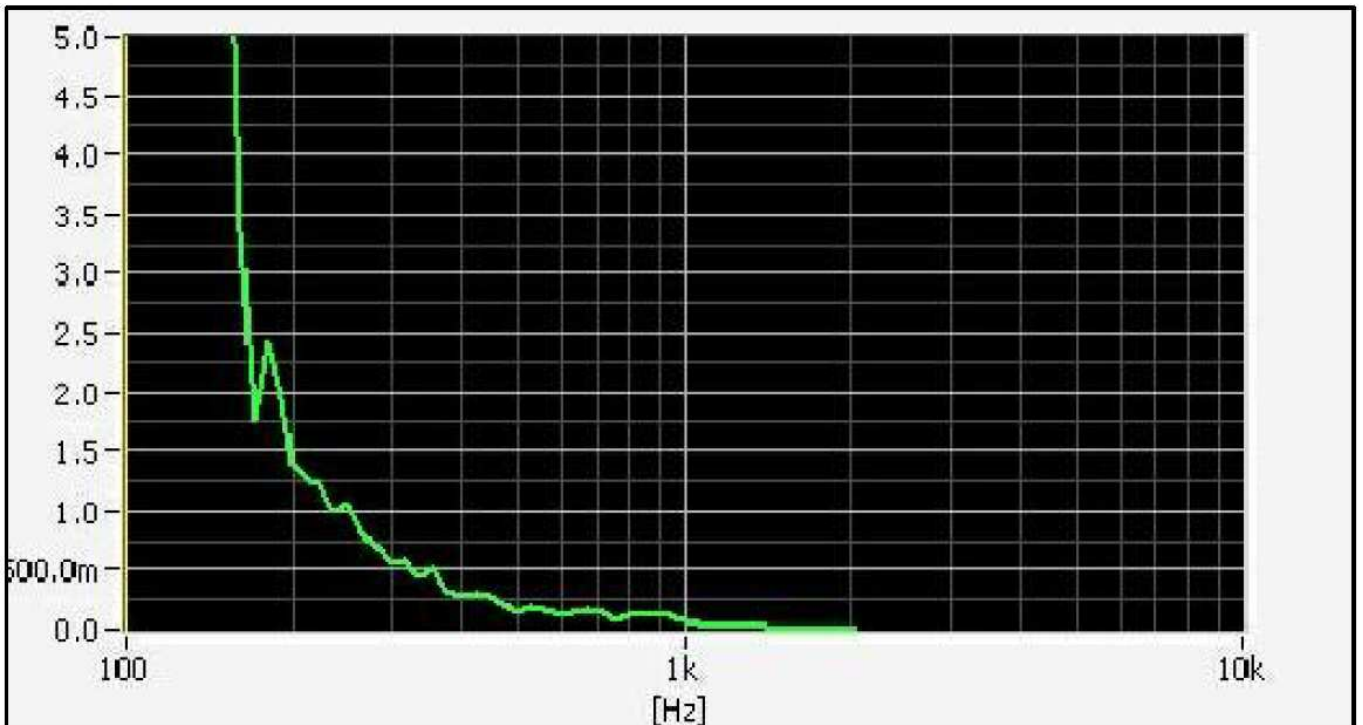


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3.6 IMPEDANCE CURVE only for reference



3.7 RUB & BUZZ CURVE only for reference



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4. RELIABILITY TEST

4.1 Load Test

Power 0.8W
Duration 96 hours

4.2 High Temperature Durability Test acc. to IEC 60068 part2-2

Temperature +85 ±3°C
Duration 1000 hours

4.3 Low Temperature Durability Test acc. to IEC 60068 part 2-1

Temperature -40°C ±3°C
Duration 500 hours

4.4 Humidity Durability Test acc.to IEC 60068 part2-3

Temperature +40 ±3°C
Relative Humidity 93% RH
Duration 56 days

4.5 Temperature Cycle Durability Test acc.to IEC60068 part2-14

Low Temperature +40 ±3°C
High Temperature +85 ±3°C
Transfer Time from Low to High temperature < 10 seconds
Cycles 100

4.6 Shock Test acc. to IEC 60068 part2-27

100g for each free mutually perpendicular directions to each of 3times sine-wave

4.7 Vibration Test to IEC 60068 part 2 -6

sine-wave excitation; 8...300Hz,2g,1 octave/min; test time 16h each axis

Additional requirements:

Test of solderability and resistance to soldering heat

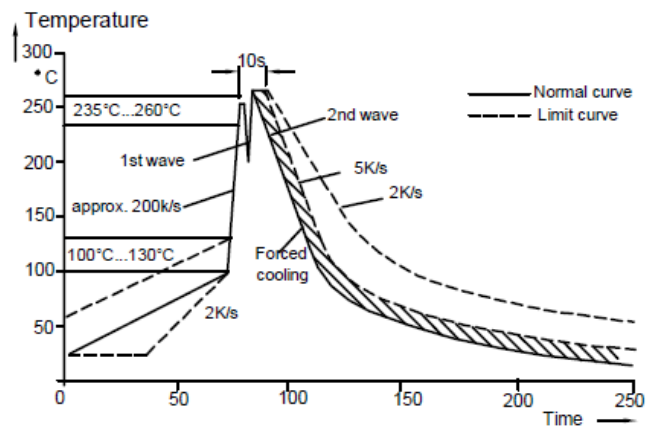
acc. to VDON4.3643.001

X-ray solderpoint inspection according to VDON 4.4814.001

Washability: not washable

Cadmium prohibited as per DIN 5.5000.1

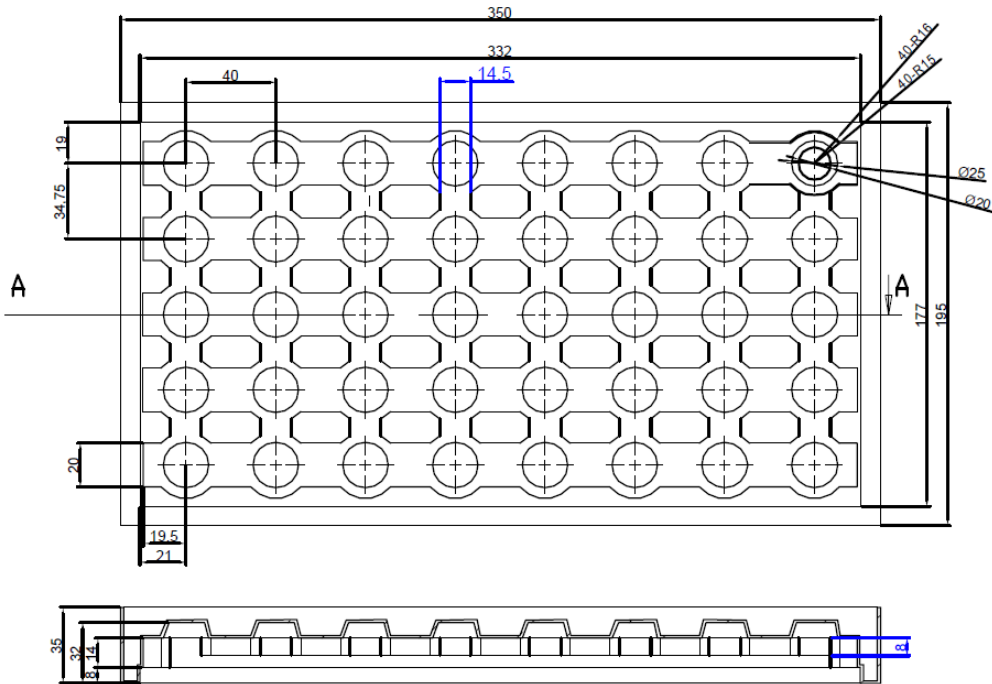
4.8 Wave Soldering



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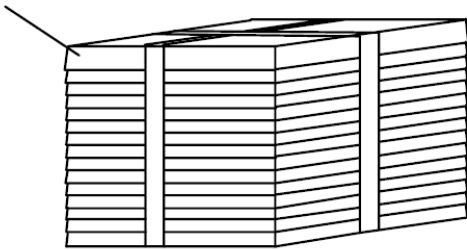
5. PACKING

5.1 ESD PACKING



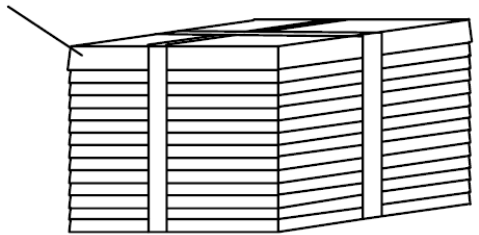
A-A

only cover



15 trays

only cover



15 trays

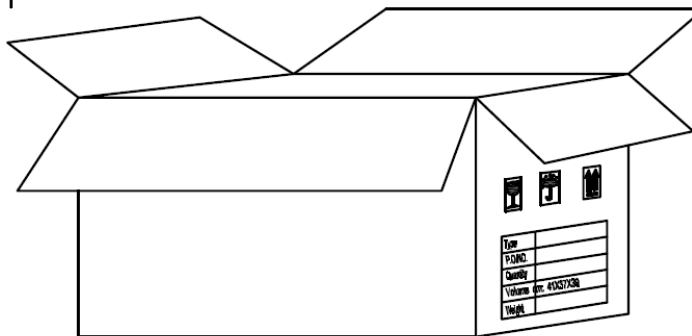
5.2 PACKING QUANTITY

40 pcs per tray

30 trays per carton

1120 pcs per carton in total

Carton size 41x37x39cm



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6. NOTICE

6.1 The products mustn't be washed

6.2 Storage Condition

The products should be stored in a room, where the temperature/humidity is stable. Avoid such places where there are large temperature changes. Please store the products at the following conditions:

Temperature: -10 to + 40 C Humidity: 15 to 85% R.H.

6.3 Expire Date on Storage

Expire date (Shelf life) of the products is six months after delivery under the conditions of a sealed and an unopened package. If you store the products for a long time (more than six months), use them carefully because the products may be degraded in the solderability and/or rusty. Please confirm solderability and characteristics for the products regularly.

6.4 Notice on Product Storage

- (1) Please do not store the products in a chemical atmosphere (Acids, Alkali, Bases, Organic gas, Sulfides and so on), because the characteristics may be reduced in quality, and/or be degraded in the solderability due to the storage in a chemical atmosphere.
- (2) Please use the products immediately after the package is opened, because the characteristics may be reduced in quality, and/or be degraded in the solderability due to storage under the poor condition.

7. HISTORY CHANGE RECORD

REV	CHANGE ITEMS		DATE
	BEFORE CHANGE	AFTER CHANGE	
1		Add Washing Label	2011.03.11
2		Change PCB, mould "+" and "-" on the Housing, use ESD packaging	2011.04.04
3		Change PCB Copper Shape	2013.05.22
4	Old Layout	New Layout	2019.09.20
5	 Washing Label:	 Washing Label:	2020.08.07

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