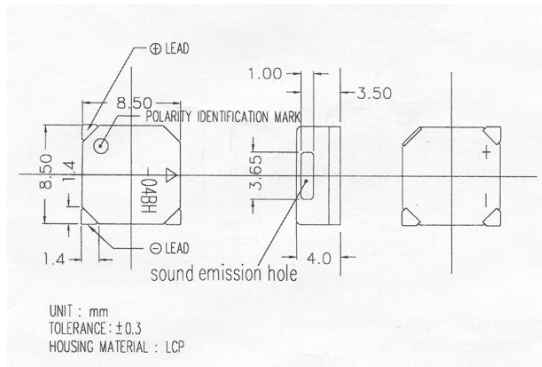
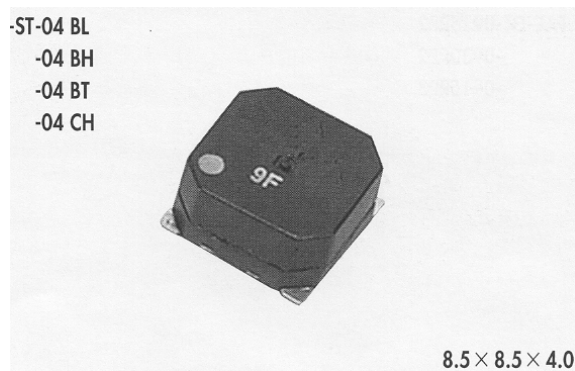




Product Data Sheet

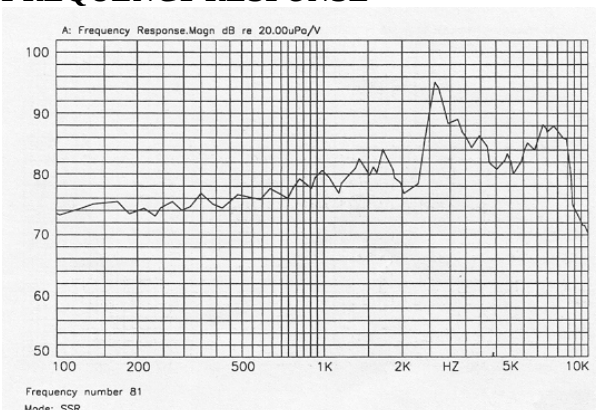
Part No. ST-04BL Reflow Type (SMD)

DIMENSIONS

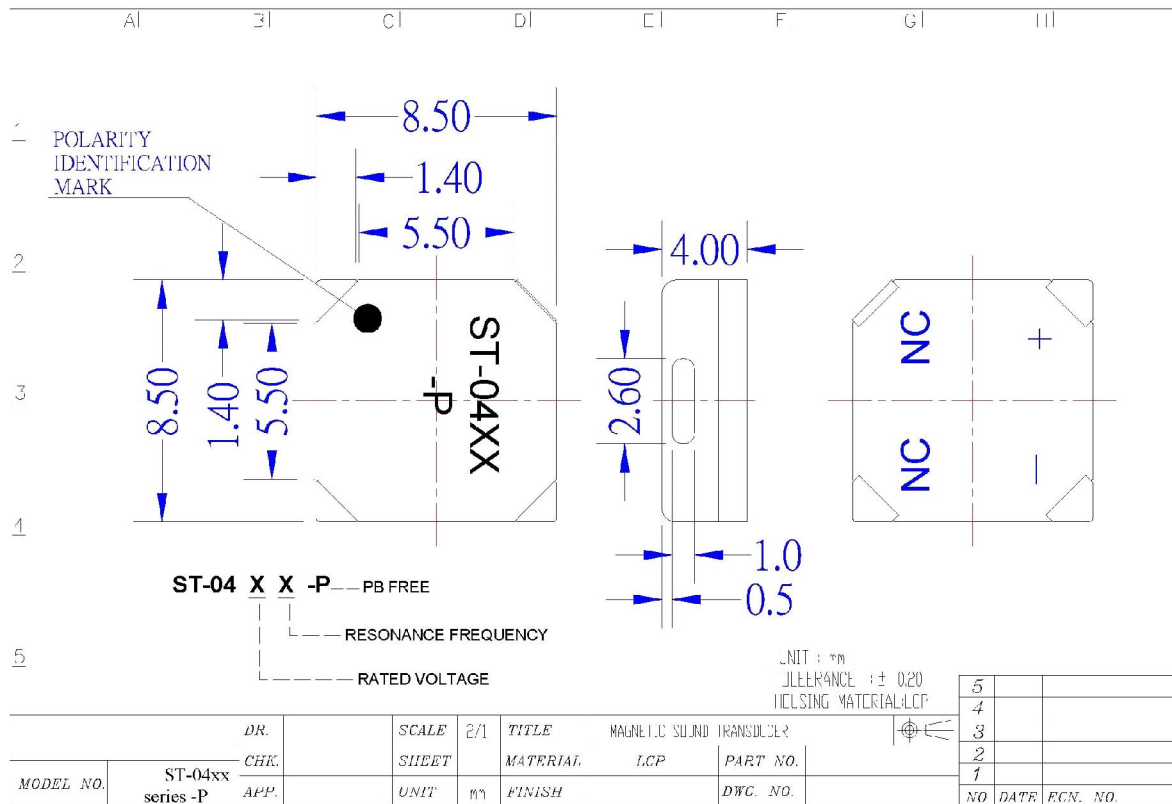


Type	Unit	
Color		Black
Rated Voltage	(V)	3.6
Operating Voltage	(V)	2-4
Current Consumption	(mA)	MAX.70
Coil Resistance	(Ω)	15±3
Sound Output (Min)	(dB)	87
Resonance Frequency	(Hz)	2300
Operating Temp	(C)	-30~+85
Storage Temp	(C)	-40~+85
Weight	(g)	1
Terminal		SMD
Dimension	mm	8.5 x 8.5 x 4
*applied voltage: Rated Voltage, 1/2 duty, square wave		
*distance for measurement 10cm		

FREQUENCY RESPONSE



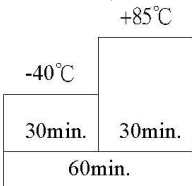
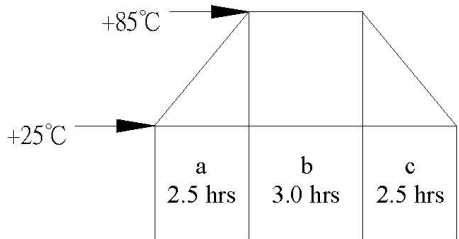
Product Data Sheet



RELIABILITY TEST

ST-04xx Series -P

Note: No voltage is applied to the part during reliability test No. 1~4

Item	Test Conditions	Evaluation Standard
1 Temp. test	(1) High temp. storage life test: The part shall be capable of withstanding a storage temperature of +85°C for 96 hours. (2) Low temp. storage life test: The part shall be capable of withstanding a storage temperature of -40°C for 96 hours. (3) Temp. cycle: The part shall be subjected to 10 cycles. One cycle shall consist of ; 	After the test the part shall meet specifications without any degradation in appearance and performance except SPL.
2 Temp. / Humidity cycle test	The part shall be subjected to 10 cycles. One cycle shall be 8 hours and consist of ;  a , b : 90 ~ 98% RH c : 80 ~ 98% RH	SPL. shall be 87 dB or more.

RELIABILITY TEST

ST-04xx Series -P

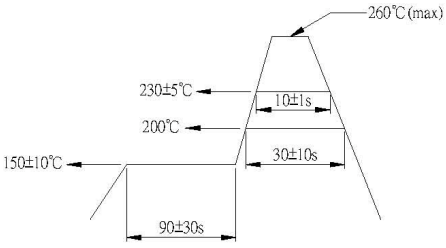
Note: No voltage is applied to the part during reliability test No. 1~4

Item		Test Conditions	Evaluation Standard
3	Vibration Test	The part shall be subjected to a vibration cycle of 10Hz to 55Hz to 10Hz in a period of 1 minute. Total peak amplitude shall be 1.52mm(9.3G). The vibration test shall consist of 2 hours per plane in each three mutually perpendicular planes for a total time of 6 hours.	After the test the part shall meet specifications without any degradation in appearance and performance except SPL. SPL. shall be 87 dB or more.
4	Dropping Test	(1) Fixed drop : The part shall be mounted on 100g jig(standard pcboard) and dropped from a height of 152cm onto a concrete floor 5 times in each 6 planes. (a total of 30 times.) (2) Free drop : The part only shall be dropped from a height of 75cm onto a 40mm thick wooden board 3 times in 3 axes (X,Y,Z). (a total of 9 times.)	
5	Operating life test	(1) Ordinary temperature : The part shall be subjected to 1000 hours at room temperature ($25\pm 10^{\circ}\text{C}$) with rated voltage & resonance frequency applied. (2) High temperature : The part shall be subjected to 500 hours at $+70^{\circ}\text{C}$ with rated voltage & resonance frequency applied. (3) Low temperature : The part shall be subjected to 500 hours at -30°C with rated voltage & resonance frequency applied.	

RELIABILITY TEST

ST-04xx Series -P

Note: No voltage is applied to the part during reliability test No. 1~4

Item	Test Conditions	Evaluation Standard
6 Solderability	The part shall be dipped into the soldering bath conditioned as follows ; Solder temp. : $260 \pm 5^{\circ}\text{C}$ Soaking time : 10 - 11 seconds	95% surface of lead pins must be covered with fresh solder and soldering balls should be found.
7 Pin lead strength	3 lead pins shall be solder on the pc board , and the force (10n) shall be applied behind the part for 10 ± 1 seconds.	
8 For infrared reflow oven	<Recommended temperature profile for reflow oven> (Reference standard ; EIAJ ED-4702) 	After the test the part shall meet specifications without any degradation in appearance and performance except SPL. SPL. shall be 87 dB or more.