

SPECIFICATION FOR DYNAMIC SPEAKER

Customer	
Customer P/N	
BeStar Model Name	BMS40-12-100H5.2 LF
Product No.	136803
Issue No.	BS/TES01.644A
Issue Date	08/12/30

Approval:

1. Technical Terms
2. Drawing
3. Environmental Test
4. Packing
5. History change record

Drawn by	Checked by	Approved by	Customer approved

For conform to the European Union Directive on the Restriction of Hazardous Substances(RoHS), this type of productions forbid use all the hazardous substances as follow:

Lead
Cadmium
Mercury
Hexavalent chromium
Polybrominated biphenyls (PBB)
Polybrominated diphenyl ethers (PBDE)



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BMS40-12-100H5.2 LF



1. Technical Terms

No.	Item	Specifications
1.	Size	∅ 40*5.2mm
2.	DC resistance (20°C)	100± 15% Ω
3.	Resonance frequency	450 ± 90Hz
4.	Operating frequency range	fo...2000Hz
5.	Rated input power	1w
6.	Maximum input power	1.5w
7.	Buzz & Rattle(at sine wave10V)	must be normal
8.	T.H.D(Measured@0.25W/2.0KHz/0.5m)	<5%
9.	SPL(50% 8Vp-p square wave/ 50%distortion/0.3m/750 Hz)	85-93 dB,use the customer test circuit(please see the fig 1)
10.	Polarity	Positive voltage to (+), the diaphragm move forward
11.	Operating temperature	-40...+85 ° C
12.	Storage temperature	-40...+ 95 ° C

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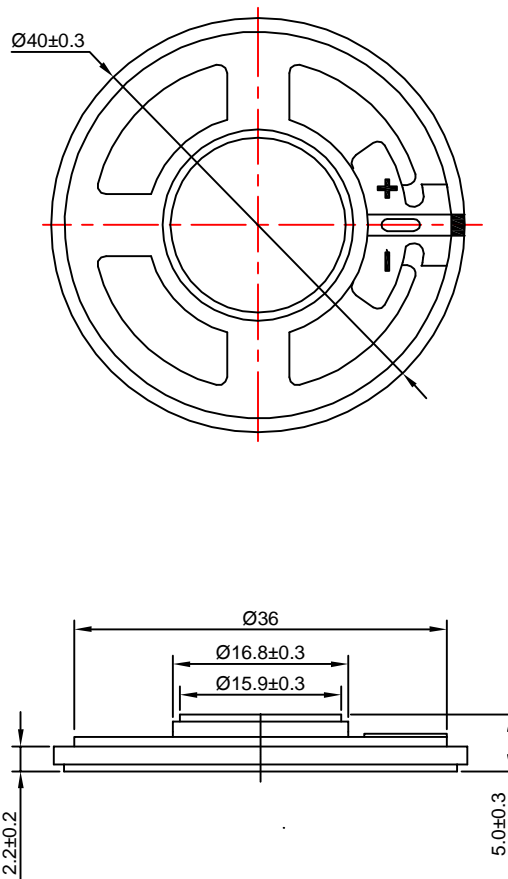
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Fig 1: Customer SPL testing circuit:



2 .Drawing



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3. Reliability Test

All testing according as EESE CORPORATE STANDARD for ENVIRONMENTAL REQRTEMENTS-(Non-EMC) form Ford Motor Company

1.WCR 00.00EA-D11-22 /Table3.3 / 4.1.1.1Performance Evaluation

- a.Component performance parameters with quantifiable acceptance criteria/limits (e.g. voltages, current,frequencies,input/output characteristics,display intensities, computations etc)
- b.Minmum ,maximum and Nominal Temperatures(T₃,T₄and T_N respectively)for performance evaluations.Temperature selection should be in accordance with Tables3.2.1.(a)and 3.2.1.(b)
- c.Minmum ,maximum and Nominal test supply voltages(V₃,V₄,V_N respectively) should be in accordance with Table 3.2.1.(a) and 3.2.1.(b).

2.WCR 00.00EA-D11-22 /Table3.3 / 4.1.1.2 Functional Check

- a.Identification of the characteristics necessary to verify satisfactory function after each environmental stress.Qualitative requirements for the characteristics should be define.
- b.Supply voltage and temperature (V₅ and T_N)per Tables 4.(b),3.2.1.(b)and3.2.6.(b)

3.WCR 00.00EA-D11-22 /Table3.3 / 4.1.1.3 Monitored Operation

- a.Functional or performance characteristics with quantifiable criteria/limits necessary to determine satisfactory operation during exposure to the envireonments.
Note:Characteristics should be determined based on subsystem operational requirements, functional importance class,FMEA's applicable regulatory/safety reauirements,company standards and the "Typical Environmental Effects"listed in Table 1.2.2.Supply voltage,V₆ as specified in Tables 4.(b)and 3.2.6.(b).

4.WCR 00.00EA-D11-23 /Table3.3 / 4.1.1.5Visual Check

- Comprehensive listing of visual characteristics with suffcient qualitative criteria to determine functionability or degardation resulting from exposure to the environments.
Note:The characteristics and criteria should be based on vehicle requiremnets,subsystems requirements,corporate standards,and "Typical Environmental Effects" listed Table1.2.1.

5.WCR 00.00EA-D11-23 /Table3.3 / 4.1.1.6Internal Inspection

- Comprehensive listing of internal visual characteristics or physical analysis,with sufficient qualitative criteria that can determine degardation of interconnections and function. Specific criteria should include "Typical Environmental Effects"from Table 1.2.1.as applicable.

6.WCR 00.00EA-D11-24 /Table4.(a) / 4.5.1 Low Temperature Exposure

- Temperature -40 °C
- Duration 72hrs
- Expose the component(non-operating)to minimum storage temperture for 72 hours.

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7.WCR 00.00EA-D11-24 /Table4.(a) / 4.5.2 Low Temperature Operation

Temperature -40°C
 Duration 72hrs
 Powered at normal load stress conditions
 Operate the component continuously at normal load stress conditions at minimum operating temperature for 72 hours.

8.WCR 00.00EA-D11-24 /Table4.(a) /4.5.3 High Temperature Exposure

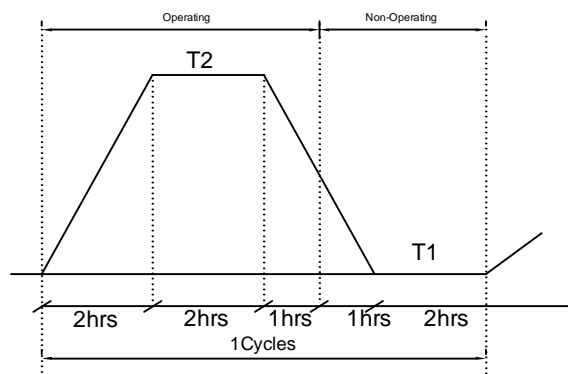
Temperature +85°C
 Duration 400hrs
 Expose the component(non-operating)to maximum storage temperture for 400 hours.

9.WCR 00.00EA-D11-24 /Table4.(a) /4.5.4 High Temperature Operation

Temperature +85°C
 Duration 72hrs
 Powered at normal load stress conditions
 Operate the component continuously at normal load stress conditions at maximum operating temperature for 72 hours.

10.WCR 00.00EA-D11-25 /Table4.(a) /4.5.5Powered Thermal Cycle

Temperature T1:-40°C T2:+85°C
 Cycle: 30cycles
 Subject the component to 30 cycles between minimum and maximum operating temperature T1 and T2 as shown below.
 Operate the component at normal load stress conditions during the operating portion of the cycle.Humidity shall be controlled to prevent condensation.



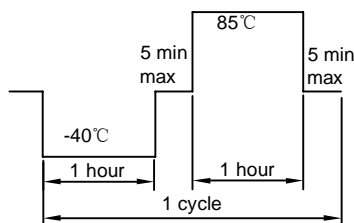
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11.WCR 00.00EA-D11-26 /Table4.(a) /4.5.6Thermal Shock Resistance

Expose the component (non-operating)to 6 thermal shock cycles between minimum and maximum storage temperatures:T5:-40 °C ,T6:+85 °C as shown below .



12.WCR 00.00EA-D11-31 /Table4.(a) /4.6.1Powered Vibration Endurance

For testing of components and assemblies directly mounted to the vehicle body or instrument panel: with the component or component/bracket assembly affixed directly to the vibrating surface complete the logarithmic sinusoidal sweep vibration endurance profile indicated in Table 4.6.1

13.WCR 00.00EA-D11-32 /Table4.(a) /4.6.3.2Handing Drop

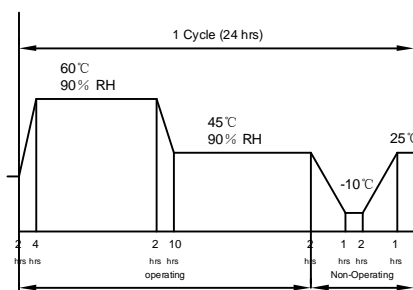
Hand drop distance 76cm
Drop the component a distance of 76 cm onto a concrete or steel surface. Repeat once for each component surface and corner.

14.WCR 00.00EA-D11-31 /Table4.(a) /4.6.1Audible Noise

For testing of components and assemblies directly mounted to the vehicle body or instrument pannel: with the component or component/bracket assembly affixed directly tothe vibrating surface, complete one logarithmic sinusoidal sweep vibration profile as indicated in Table 4.6.2 Monitor the component for buzzes,squeaks and rattles throughout the full frequency range,Then remove and shake and twist the component or component/bracket assembly by hand while checking for buzzes ,squeaks and rattles.

15.WCR 00.00EA-D11-28 /Table4.(a) /4.5.8Humidity-Temperature Cycle

Subject the component to 5 cycles of the test profile shown below.Operate the component continously at normal load stress conditions during the operating portion of the cycle.



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16.WCR 00.00EA-D11-30/Table3.3/4.5.10Dust

Expose the component to 100mg/m³ for 5 hours or 3,000 mg/m³ or 60,000 mg/m³ dust concentration (as specified) for 8 hours.

Notes:

(1)The component shall be operating or non - operating throughout the test as required.

(2)In the event that SAE J1211 or IEC529 test procedures are specified. "equivalent" or greater dust concen -trations and test duration requirements must be applied.Above stated test parameters are directly applicable to test equipment designed to JIS D0207 specifications.

17.WCR 00.00EA-D11-34 /Table4.(a) /4.7.1Salt Mist Atmosphere

Temperature +35 °C,Duration : 48hrs

Expose the component to salt mist atmosphere(from 5% salt water solution at 35 °C) for 48 hours.

18.WCR 00.00EA-D11-34 /Table4.(a) /4.7.2 Chemical Resistance

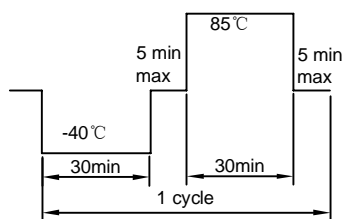
Brush the specified chemical solutions onto the component and then leave at maximum storage temperatire T6 +85 °Cfor 96 hours.Note:test may be waived is using Ford approved materials.

19.WCR 00.00EA-D11-33 /Table4.(a) /4.6.3.4Low Machanical Shock

Subject the component to six 50g (490m/s²) 10ms half-sine shock pulses, one in each opposite direction of each perpendicular axis.

20.WCR 00.00EA-D11-27 /Table4.(a) /4.5.7Thermal Shock Endurance

1000 thermal shock cycles(non-operating) between minimum and maximum storage temperatures T5-40 °C and T6+85 °C as shown below.



21.WCR 00.00EA-D11-34 /Table4.(a) /4.8.1High Temperature Endurance

The testing temperature use the maximum operating temperature T2:+85 °C, and normal load stress condition for 1000 hours

22.WCR 00.00EA-D11-34 /Table4.(a) /4.8.4 85/85 High Temperature-High Humidity Endurance

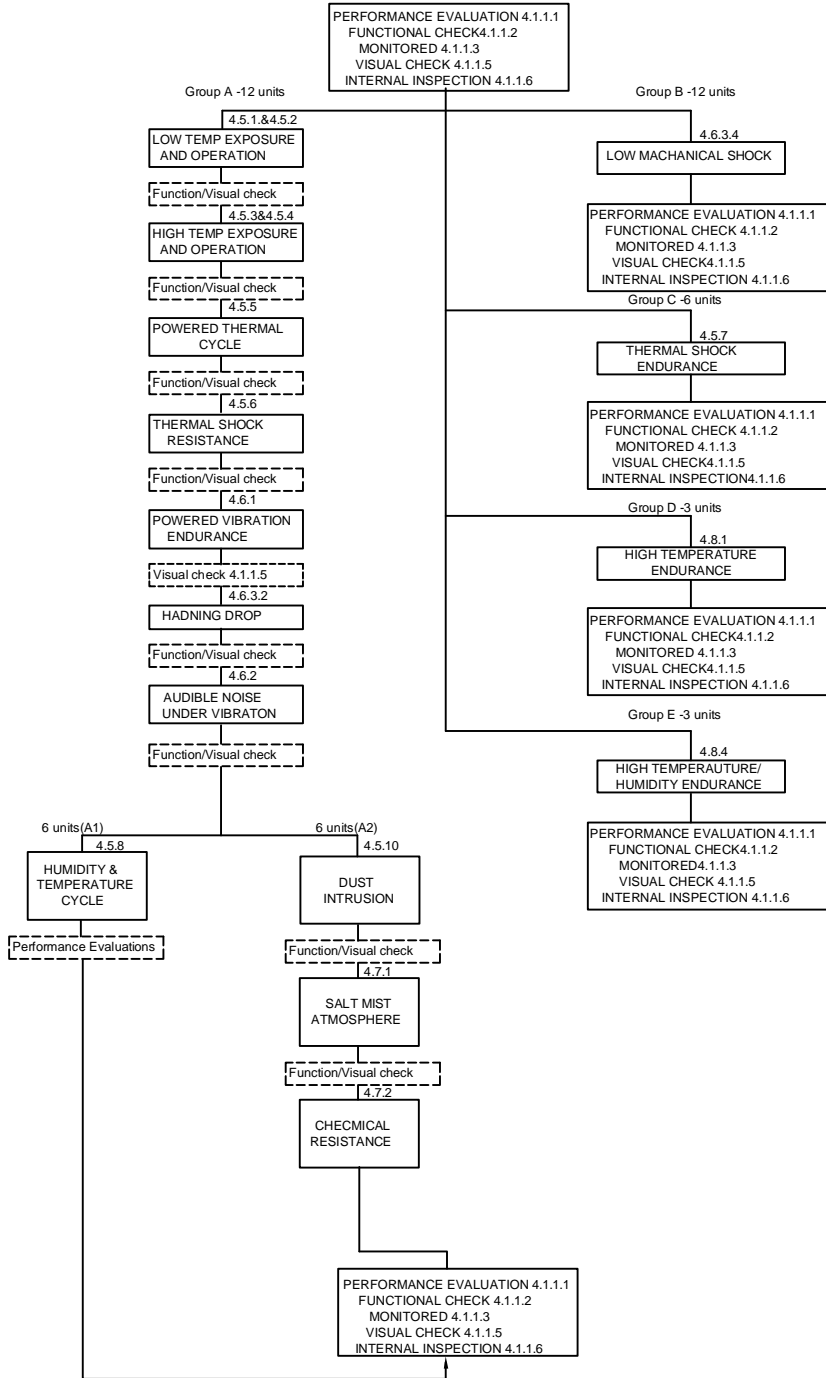
Operate the component at +85 °C and 85% RH, and normal load stress condition for 1000 hours

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Pre-test all Units

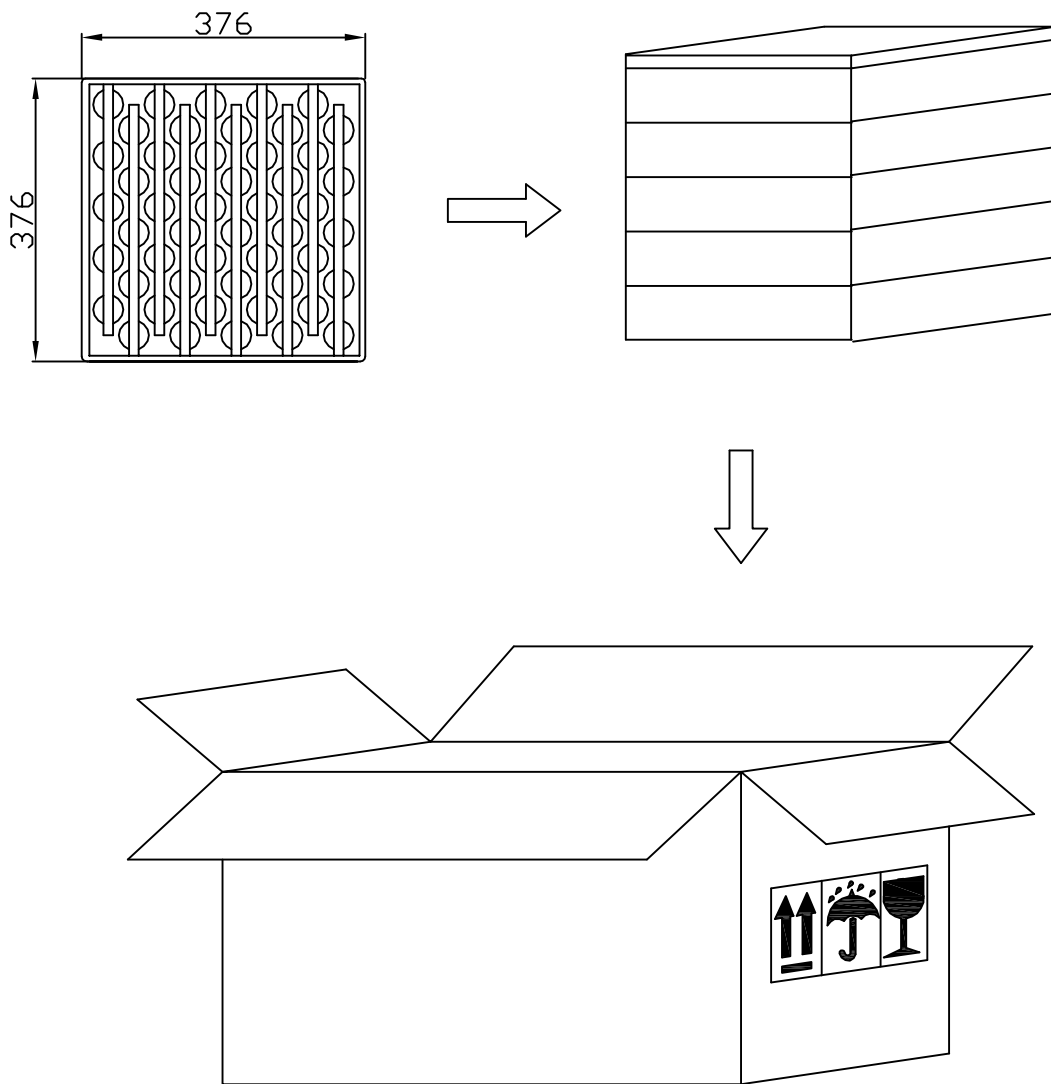


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4. Packing



Remark:
 50pcs per tray
 14 tray per carton
 Total 700pcs per carton
 Size:41X41X34 cm

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