

SPECIFICATION

1. SCOPE

This specification covers the piezoelectric ceramic transducer for nebulizer application.

2. MODEL

NUTD15F2800R-GA (Piezo ceramic material EL-QA)

3. SPECIFICATION

3.1. Dimensions

As the per drawing No.DW-NUTD15T07-03

3.2. Electrical specification

3.2.1. Resonant frequency f_r :

$$f_r = 2.8\text{MHz} \pm 140\text{KHz}$$

3.2.2. Resonant impedance Z_m :

$$Z_m \leq 4\Omega$$

3.2.3. Electromechanical coupling coefficient K_t :

$$K_t \geq 40\%$$

3.2.4. Static capacitance C_s :

$$C_s = 1000\text{pF} \pm 20\% @ 1\text{kHz}$$

4. Testing Procedure

4.1. Testing condition :

$23 \pm 3^\circ\text{C}$ 、 $40 \sim 70\% \text{R.H.}$

4.2. f_r 、 Z_m 、 K_t :

Thickness mode by HP4194A impedance analyzer

4.3. C_s :

LCR meter at 1KHz 、 $1V_{\text{rms}}$

Design Cheng Chen	Check Clement Chou	Approval Antony Lu	Model NUTD15F2800R-GA	
Title PIEZOCERAMIC TRANSDUCER			Document No. EL-SP-UT-123	
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5. Reference

5.1. Mist amount

5.1.1. Typical value

1cc/min

5.1.2. Test condition

Input power 8W , input voltage $12V_{rms}$, water level 20mm~25mm

5.2. Transducer life

5.2.1. Water temperature $5^{\circ}C \sim 40^{\circ}C$

6000hrs (min)

5.2.2. Water temperature $70^{\circ}C \sim 80^{\circ}C$

3000hrs (min)

The transducer life is the time when mist amount has become 70% of initial mist amount.

6. Notice

6.1. This transducer is designed for nebulizing drinkable water. If the customer needs to nebulizing the medical solution, the customer should test the feasibility by himself although this transducer can withstand the acidic or alkaline solution.

6.2. Please don't use the conducting probe as the water level sensor because the surface of the transducer is coated with glass film.

6.3. Please avoid surge voltage or surge current. The input current should be less than $2.7A_{pp}$. If the current is over this value, the life of the transducer will become shorter.

6.4. Please handle the transducer with care. The transducer will damage when hit the ceramic part.

6.5. The transducer is composed of lead zirconate titanate ceramics. Please pay attention to the regulation when the transducer is disposed.

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