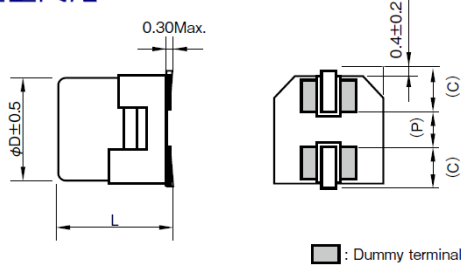


# Spec Sheet

FOR AUTOMOTIVE CONDUCTIVE POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITORS[HT]

## HT-10V221MF80Q-R2

**ELNA**



Unit : mm

### ■ Features

- Item Summary  
220 $\mu$ F $\pm$ 20%, 10V,  $\phi$  6.3x7.7mm, SMD
- Lifecycle Stage  
Mass Production (Preferred)
- AEC-Q200 qualified
- Standard packaging quantity (minimum)  
1000

### ■ Products characteristics table

Capacitance	220 $\mu$ F $\pm$ 20 %
Rated Voltage	10 V
tan $\delta$ (max)	0.18
Operating Temp. Range	-55 to +105 $^{\circ}$ C
Leakage current (min)	22 $\mu$ A at 2 min
Rated Ripple (max)	2300 mArms at 100k Hz / 105 $^{\circ}$ C
Impedance ratio ___ [-25 $^{\circ}$ C/+20 $^{\circ}$ C]	1.5
Impedance ratio ___ [-55 $^{\circ}$ C/+20 $^{\circ}$ C]	2
ESR (max)	24 m $\Omega$ at 100k Hz / 20 $^{\circ}$ C
Endurance ___ [Test time]	5000 hr at 105 $^{\circ}$ C
Endurance ___ [Capacitance change]	Within $\pm$ 30% of initial value
Endurance ___ [tan $\delta$ change]	200% or less of initial specified value
Shape	Vertical Chip for Vibration (SMD)
Type	Conductive Polymer Hybrid
RoHS Compliance (10 subst.)	Yes
REACH Compliance (209 subst.)	Yes
Soldering	Reflow
LeadForming/Taping	Taping Embossed

### ■ External Dimensions

Dimension $\phi$ D	$\phi$ 6.3 $\pm$ 0.5 mm
Dimension L	7.7 $\pm$ 0.3 mm
Dimension P (F)	Typ 2 mm
Dimension C (d)	Typ 2.7 mm

The data is reference only. Electrical characteristics vary depending on environment or measurement condition.  
 TAIYO YUDEN reserves the right to make change to the data at any time without notice.  
 Before making final selection, please check product specification.

2021.07.05

Please read this notice before using the ELNA products.



## REMINDERS

- Please conduct validation and verification of the ELNA products in actual condition of mounting and operating environment before using the ELNA products.
- The product listed in this spec sheet is intended for use in general electronic equipment (e.g., AV equipment, OA equipment, home electric appliances, office equipment, information and communication equipment including, without limitation, mobile phone, and PC), industrial equipment, automotive interior applications, and highly public information network equipment including, without limitation, telephone exchange, and base station, etc. Please be sure to contact TAIYO YUDEN for further information before using the product for any equipment which may directly cause loss of human life or bodily injury (e.g., transportation equipment including, without limitation, automotive powertrain control system, train control system, and ship control system, traffic signal equipment, disaster prevention equipment, medical equipment classified as Class I, II or III by IMDRF).  
Please do not incorporate the ELNA products into any equipment requiring high levels of safety and/or reliability (e.g., aerospace equipment, aviation equipment, medical equipment classified as Class IV by IMDRF, nuclear control equipment, undersea equipment, military equipment). When the ELNA products are used even for high safety and/or reliability-required devices or circuits of general electronic equipment, it is strongly recommended to perform a thorough safety evaluation prior to use of the ELNA products and to install a protection circuit as necessary.  
Please note that unless you obtain prior written consent of TAIYO YUDEN, TAIYO YUDEN shall not be in any way responsible for any damages incurred by you or third parties arising from use of the product listed in this spec sheet for any equipment requiring inquiry to TAIYO YUDEN or prohibited for use by TAIYO YUDEN as described above.
- Information contained in this spec sheet is intended to convey examples of typical performances and/or applications of the ELNA products and is not intended to make any warranty with respect to the intellectual property rights or any other related rights of TAIYO YUDEN or any third parties nor grant any license under such rights.
- Please note that the scope of warranty for the ELNA products is limited to the delivered ELNA products themselves and TAIYO YUDEN shall not be in any way responsible for any damages resulting from a fault or defect in the ELNA products. Notwithstanding the foregoing, if there is a written agreement (e.g., supply and purchase agreement, quality assurance agreement) signed by TAIYO YUDEN and your company, TAIYO YUDEN will warrant the ELNA products in accordance with such agreement.
- The contents of this spec sheet are applicable to the ELNA products which are purchased from our sales offices or authorized distributors (hereinafter “TAIYO YUDEN’s official sales channel”). Please note that the contents of this spec sheet are not applicable to the ELNA products purchased from any seller other than TAIYO YUDEN’s official sales channel.
- Caution for Export  
The product listed in this spec sheet may require specific procedures for export according to “U.S. Export Administration Regulations”, “Foreign Exchange and Foreign Trade Control Law” of Japan, and other applicable regulations. Should you have any questions on this matter, please contact our sales staff.