Type HHT 175 °C, Aluminum Electrolytic Capacitor

Type HHT has long life and rugged construction for high temperature environments. HHT capacitors are rated for full operating voltage at 175 °C and tested to 2000 hrs at rated voltage and temperature. 5000 hours of life at 150 ºC with ripple current ratings up to 10 Arms.

Highlights

- Rated for +175 ºC without voltage derating
- High capacitance retention @ -40 ºC
- Up to 20g vibration

Specifications

Temperature Range	–40 °C to +175 °C
Rated Voltage Range	16 Vdc to 40 Vdc
Capacitance Range	470 µF to 4700 µF
Capacitance Tolerance	–10 / +30%
Leakage Current (at 20 ºC)	I = 0.003 CV +4.0 µA; after 5 minutes at rated voltage I = leakage current in µAmps C = rated capacitance in µF V = rated DC Working voltage in Volts
Ripple Current vs. Frequency Correction Factors	<table><tr><td>Frequency (Hz)</td><td>100</td><td>300</td><td>1000</td><td>5000</td><td>100 kHz</td></tr><tr><td>Ripple Current Correction Factor</td><td>0.35</td><td>0.57</td><td>0.8</td><td>1</td><td>1.04</td></tr></table>
Low Temperature Characteristics	***Impedance ratio: $Z_{-40\,°C}/Z_{+25\,°C}$ @120 Hz ≤3***
DC Life Test	2000 h @ rated voltage at 175 °C Δ Capacitance 30V and 40V ±20% , 16V ±25% ESR 200% of limit DCL 100% of limit
Shelf Life Test	(+105 ºC/0 Vdc): 1000 hours (+40 ºC/0 Vdc): 10 years
Case Material	Stainless Steel

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Vibration Test	Mil standard 202, method 204, high frequency 20g's
Surge Voltage Test	Subject the capacitors to their rated surge voltage at normal room temperature and through a 1000 Ω ±10% resistor (except for capacitances of 2500 µF and up, use a higher value resistor calculated as 2,500,000/C Ω ±10% where C is the capacitance in µF). Cycle the voltage ½ minute on followed by 4½ minutes off during which each capacitor is discharged through the charging resistor or equal resistor. Repeat the cycles for 120 h. Post test requirements are for DCL, ESR and DF to meet initial requirements and for there to be no evidence of mechanical damage or electrolyte leakage.
Storage at Low Temperature Test	**Test** Subject the capacitor to 72 hours at -55°C. After 16 hours at room temperature, measure the capacitance and DCL. **ΔC** Capacitance change from the initial measurement must not exceed 10%. **DCL** Leakage current will meet the initial specification. **Appearance** No electrolyte leakage or other visible damage. The markings are to be legible.

Part Numbering System

HHT	332	P	016	H	J	0
Type	**Capacitance**	**Tolerance**	**Rated Voltage**	**Case Diameter**	**Case Length Code**	**Sleeve/Label**
HHT	**332** =3300 µF **471** = 470 µF	**P =** -10/+30%	**016** = 16 Vdc **030** = 30 Vdc **040** = 40 Vdc	**H** = 22mm	**E** = 37mm **J** = 45mm **L** = 53mm	**0** = Label **1** = Sleeve

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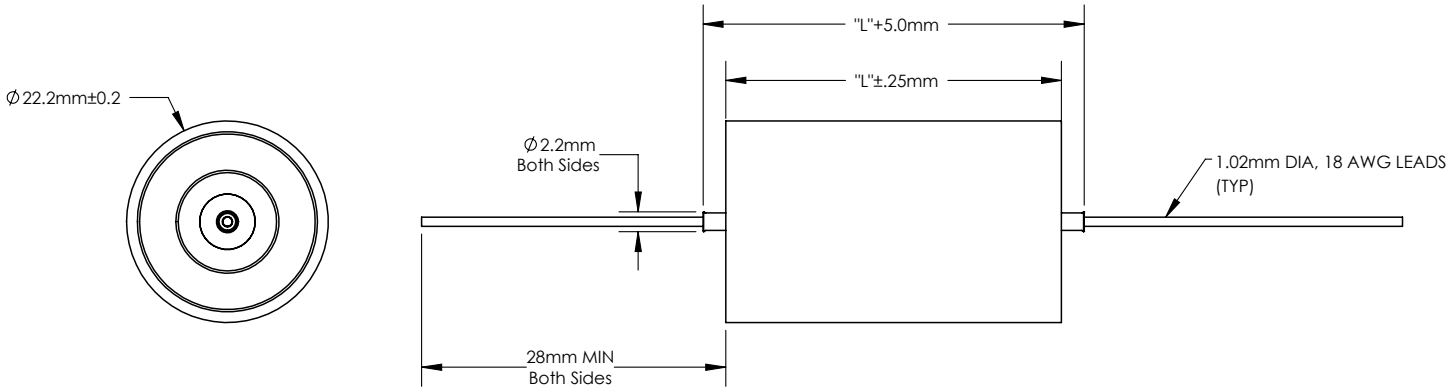
Outline Drawing



Typical Weight
HE = 43 g
HJ = 50 g
HL = 56 g

Ratings

Voltage	Cap (µF) 120Hz 25 ˚C	Catalog Part Number	Case Size D x L mm	ESR max 25 °C (mΩ) 120 Hz	Ripple (A) 150 °C Ambient 5 Khz
16 Vdc @ 175 °C 25 Vdc Surge @25 °C	2200	HHT222P016HE0	22 x 37	90	7.1
	3300	HHT332P016HJ0	22 x 45	60	8.9
	4700	HHT472P016HL0	22 x 53	42	10.3
30 Vdc @ 175 °C 40 Vdc Surge @25 °C	1500	HHT152P030HE0	22 x 37	133	7.3
	2200	HHT222P030HJ0	22 x 45	90	8.9
	2700	HHT272P030HL0	22 x 53	74	10.1
40 Vdc @ 175°C 63 Vdc Surge @25°C	470	HHT471P040HE0	22 x 37	423	5.5
	680	HHT681P040HJ0	22 x 45	293	6.9
	900	HHT901P040HL0	22 x 53	221	8.1

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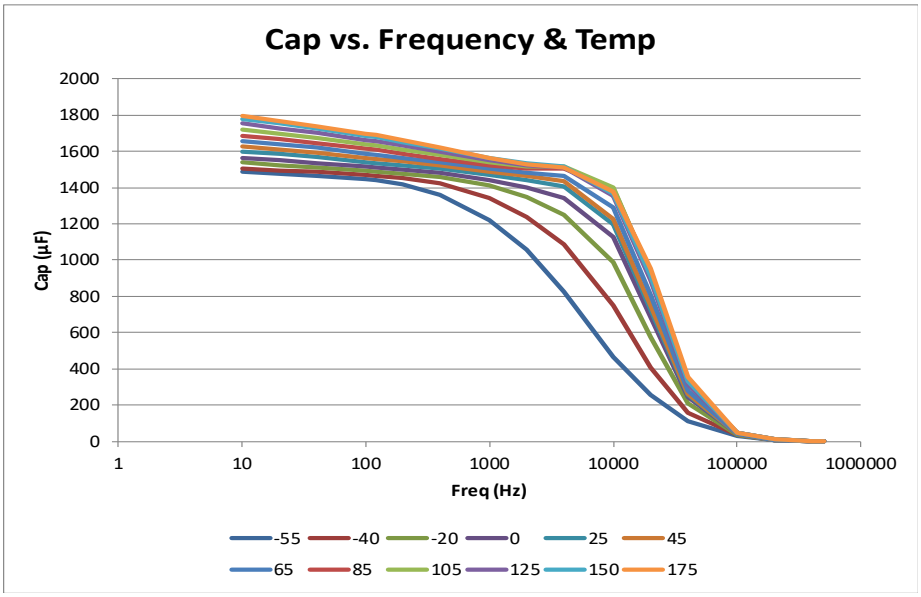
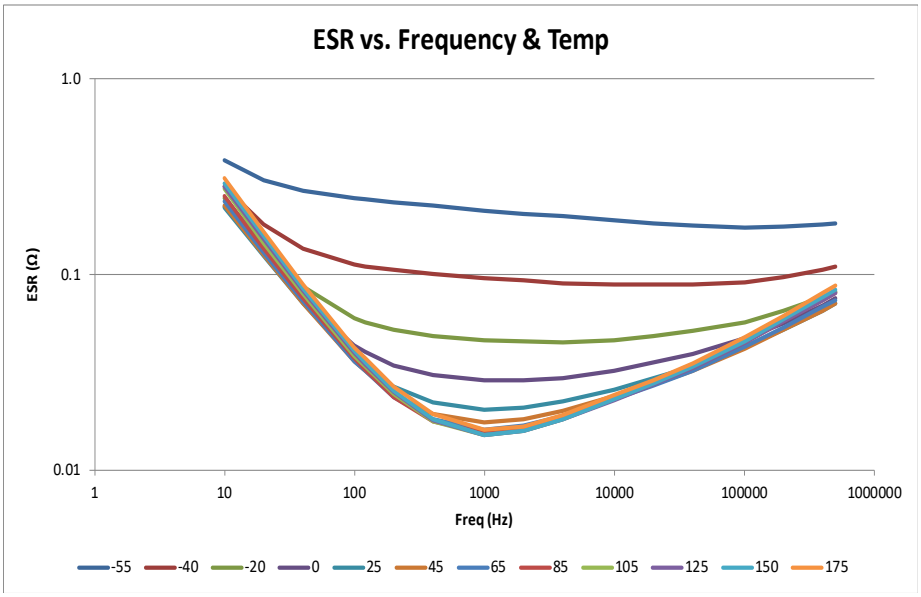
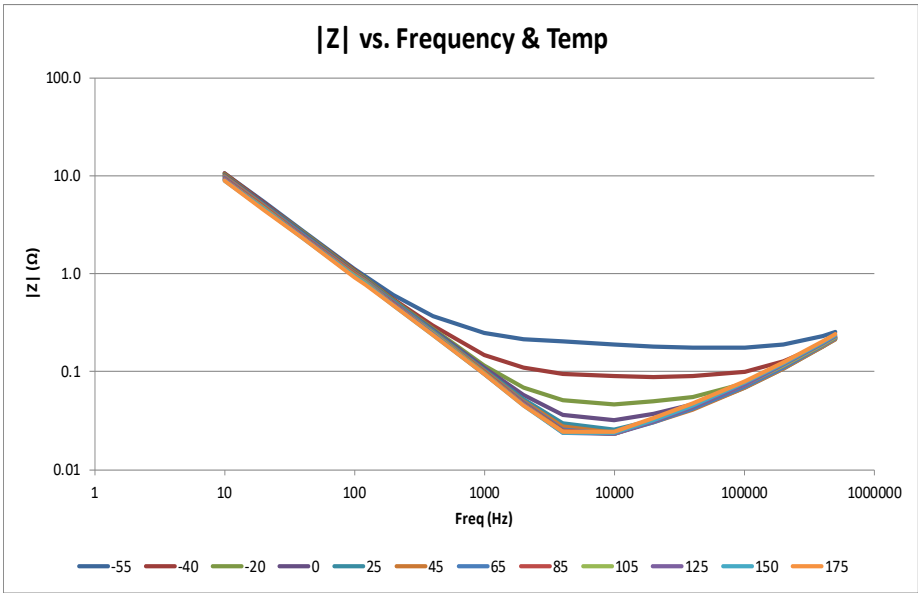
Typical Performance Curves

Part Number: HHT152PO30HE







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