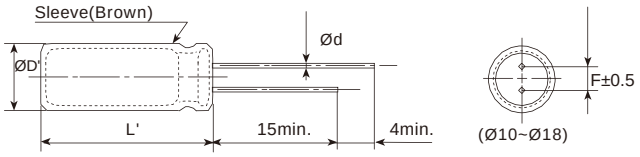
HH series

- High ripple current
- Endurance +105°C 2,000 hours
- **RoHS Compliant**

SPECIFICATIONS

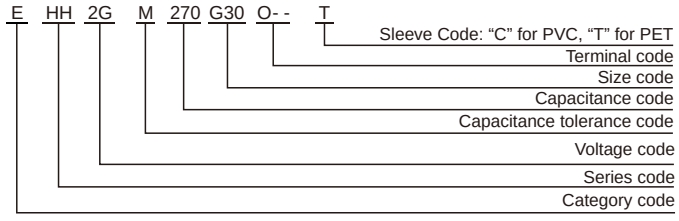
Items	Characteristics				
Category Temperature Range	-40~+105°C(400 Vdc) -25~+105°C(420~450 Vdc)				
Rated Voltage Range	400~450 Vdc				
Capacitance Tolerance	±20%(M)				(at 20°C,120Hz)
Leakage Current		After 1 minute	After 5 minutes		Where,I:Max.leakage current (μA), C:Nominal capacitance (μF), V: Rated voltage (V) (at 20°C)
	CV≤1000	I≤0.1CV+40μA	I≤0.03CV+15μA		
	CV>1000	I≤0.04CV+100μA	I≤0.02CV+25μA		
Dissipation Factor (tanδ)	Rated Voltage(Vdc)	400	420	450	
	tanδ (max.)	0.15	0.20	0.20	(at 20°C,120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated Voltage(Vdc)	400	420	450	
	Z(-25°C)/Z(+20°C)	5	6	6	
	Z(-40°C)/Z(+20°C)	6	-	-	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after DC voltage plus the rated ripple current is applied for 2,000 hours at 105°C.				
	Capacitance Change	≤±20% of the initial value			
	D.F. (tanδ)	≤200% of the initial specified value			
	Leakage Current	≤The initial specified value			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.				
	Capacitance Change	≤±20% of the initial value			
	D.F. (tanδ)	≤200% of the initial specified value			
	Leakage Current	≤200% of the initial specified value			

DIMENSIONS[mm]



ØD	10	12.5	16	18
Ød	0.6	0.6	0.8	0.8
F	5.0	5.0	7.5	7.5
ØD'	ØD+0.5max.			
L'	L+2max.			

PART NUMBERING SYSTEM



RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

Freq.(Hz) / Cap.(μF)	120	1k	10k	100k
18≤Cap.<100	1.00	1.50	1.75	1.80
100≤Cap.≤1000	1.00	1.30	1.40	1.50

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

HH series

STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (mArms/105°C, 120Hz)	Part Number
400(2G)	27	10×30	0.15	270	EHH2GM270G30OT
	33	10×30	0.15	335	EHH2GM330G30OT
	39	10×35	0.15	390	EHH2GM390G35OT
	47	10×40	0.15	445	EHH2GM470G40OT
		12.5×30	0.15	430	EHH2GM470W30OT
	56	10×45	0.15	510	EHH2GM560G45OT
		12.5×30	0.15	480	EHH2GM560W30OT
	68	10×55	0.15	560	EHH2GM680G55OT
		12.5×35	0.15	520	EHH2GM680W35OT
		12.5×40	0.15	535	EHH2GM680W40OT
	82	12.5×40	0.15	640	EHH2GM820W40OT
	100	12.5×45	0.15	730	EHH2GM101W45OT
		16×30	0.15	715	EHH2GM101L30OT
	120	12.5×55	0.15	815	EHH2GM121W55OT
		16×35	0.15	800	EHH2GM121L35OT
		18×30	0.15	800	EHH2GM121M30OT
420(2T)	27	10×30	0.20	270	EHH2TM270G30OT
	33	10×30	0.20	335	EHH2TM330G30OT
	39	10×35	0.20	390	EHH2TM390G35OT
	47	10×40	0.20	445	EHH2TM470G40OT
		12.5×30	0.20	430	EHH2TM470W30OT
	56	10×50	0.20	520	EHH2TM560G50OT
		12.5×30	0.20	485	EHH2TM560W30OT
	68	12.5×35	0.20	560	EHH2TM680W35OT
		12.5×40	0.20	570	EHH2TM680W40OT
	82	12.5×40	0.20	640	EHH2TM820W40OT
	100	12.5×50	0.20	750	EHH2TM101W50OT
		16×35	0.20	725	EHH2TM101L35OT
	120	12.5×60	0.20	825	EHH2TM121W60OT
		16×35	0.20	810	EHH2TM121L35OT
		18×30	0.20	810	EHH2TM121M30OT

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (mArms/105°C, 120Hz)	Part Number
450(2W)	22	10×30	0.20	195	EHH2WM220G30OT
	27	10×30	0.20	300	EHH2WM270G30OT
	33	10×35	0.20	350	EHH2WM330G35OT
		12.5×30	0.20	340	EHH2WM330W30OT
	39	10×40	0.20	405	EHH2WM390G40OT
		12.5×35	0.20	380	EHH2WM390W35OT
	47	10×45	0.20	460	EHH2WM470G45OT
		12.5×30	0.20	440	EHH2WM470W30OT
	56	12.5×35	0.20	505	EHH2WM560W35OT
		16×30	0.20	480	EHH2WM560L30OT
	68	12.5×40	0.20	530	EHH2WM680W40OT
		18×30	0.20	500	EHH2WM680M30OT
	82	12.5×45	0.20	660	EHH2WM820W45OT
		16×35	0.20	655	EHH2WM820L35OT
	100	12.5×55	0.20	760	EHH2WM101W55OT
		16×35	0.20	740	EHH2WM101L35OT
	120	12.5×60	0.20	835	EHH2WM121W60OT
		16×40	0.20	820	EHH2WM121L40OT
		18×31	0.20	815	EHH2WM121M31OT