NIPPON CHEMI-CON

CONDUCTIVE POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITORS

Surface Mount

HXD Upgrade! Series

- High reliability and high voltage are realized by hybrid electrolyte
- Endurance with ripple current : 5,000 to 10,000 hours at 105℃
- Rated voltage range : 16 to 80Vdc, Capacitance range : 6.8 to 560µF
- For high reliability applications.
  (Automotive equipment, Base station equipment, etc.)
- RoHS2 Compliant
- Halogen Free
- AEC-Q200 compliant : Please contact Chemi-Con for more details, test data, information.

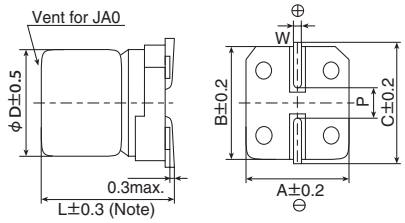
HXC
↑ Higher temperature
HXD

◆SPECIFICATIONS

Items	Characteristics							
Category Temperature Range	-55 to +105℃							
Rated Voltage Range	16 to 80Vdc							
Capacitance Tolerance	±20% (M)							(at 20℃, 120Hz)
Leakage Current	I=0.01CV or 3µA, whichever is greater Where, I : Max. leakage current (µA), C: Nominal capacitance(µF), V : Rated voltage(V)							(at 20℃ after 2 minutes)
Dissipation Factor (tan δ)	Rated voltage(Vdc)	16V	25V	35V	50V	63V	80V	
	tan δ (Max.)	0.16	0.14	0.12	0.10	0.08	0.08	(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Z(-25℃)/Z(+20℃)≦1.5 Z(-55℃)/Z(+20℃)≦2.0							(at 100kHz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 10,000 hours (E61 and F61: 5,000 hours) at 105 ℃.							
	Capacitance change	≦±30% of the initial value						
	D.F. (tan δ)	≦ 200% of the initial specified value						
	ESR	≦ 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℃ after exposing them for 1,000 hours at 105 ℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to item 4.1 of JIS C 5101-4.							
	Capacitance change	≦±30% of the initial value						
	D.F. (tan δ)	≦ 200% of the initial specified value						
	ESR	≦ 200% of the initial specified value						
	Leakage current	≦ The initial specified value						
Bias Humidity Test	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjecting them to the DC rated voltage at 85℃, 85% RH for 2,000 hours.							
	Appearance	No significant damage						
	Capacitance change	≦ ±30% of the initial value						
	D.F. (tan δ)	≦ 200% of the initial specified value						
	ESR	≦ 200% of the initial specified value						
	Leakage current	≦ The initial specified value						

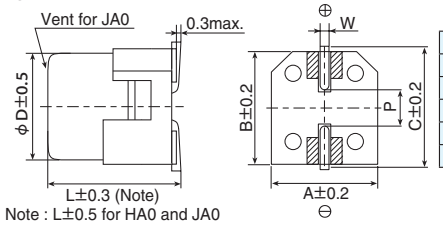
◆DIMENSIONS [mm]

- Terminal Code : A
- Size code : E61 to JA0



Note : L±0.5 for HA0 and JA0

- Terminal Code : G(Vibration resistant structure)
- Size code : F61 to JA0



Note : L±0.5 for HA0 and JA0

▨ : Dummy terminals

Size Code	φD	L	A	B	C	W	P
E61	5	5.8	5.3	5.3	5.9	0.5 to 0.8	1.4
F61	6.3	5.8	6.6	6.6	7.2	0.5 to 0.8	1.9
F80	6.3	7.7	6.6	6.6	7.2	0.5 to 0.8	1.9
HA0	8	10.0	8.3	8.3	9.0	0.7 to 1.1	3.1
JA0	10	10.0	10.3	10.3	11.0	0.7 to 1.1	4.5

◆PART NUMBERING SYSTEM

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
H	H	X	D					R	A				M				G

- 18 : Supplement code
- 15 16 17 : Size code
- 14 : Capacitance tolerance code
- 11 12 13 : Capacitance code (ex. 47µF:470, 100µF:101)
- 9 10 : Taping code
- 8 : Terminal code
- 5 6 7 : Voltage code (ex. 35V:350, 50V:500)
- 4 : Series code
- 1 : Category

Please refer to "Product code guide (conductive polymer hybrid type)"

◆MARKING

EX) 35V47µF

●Rated voltage symbol

Rated voltage (Vdc)	Symbol
16	C
25	E
35	V
50	H
63	J
80	K

HXD Upgrade! Series

◆STANDARD RATINGS

WV (V_{dc})	Cap (μF)	Size code	ESR (mΩ max./20℃, 100kHz)	Rated ripple current (mArms/105℃, 100kHz)	Part No.
16	47	E61	80	900	HHXD160ARA470ME61G
	82	F61	45	1,600	HHXD160□RA820MF61G
	100	F61	45	1,600	HHXD160□RA101MF61G
	150	F80	27	2,200	HHXD160□RA151MF80G
	180	F80	27	2,200	HHXD160□RA181MF80G
	270	HA0	22	2,500	HHXD160□RA271MHA0G
	330	HA0	22	2,500	HHXD160□RA331MHA0G
	470	JA0	18	2,600	HHXD160□RA471MJA0G
	560	JA0	18	2,600	HHXD160□RA561MJA0G
25	33	E61	80	900	HHXD250ARA330ME61G
	47	F61	50	1,300	HHXD250□RA470MF61G
	56	F61	50	1,300	HHXD250□RA560MF61G
	68	F80	30	2,000	HHXD250□RA680MF80G
	100	F80	30	2,000	HHXD250□RA101MF80G
	150	HA0	27	2,300	HHXD250□RA151MHA0G
	220	HA0	27	2,300	HHXD250□RA221MHA0G
	270	JA0	20	2,500	HHXD250□RA271MJA0G
	330	JA0	20	2,500	HHXD250□RA331MJA0G
	390	JA0	20	2,500	HHXD250□RA391MJA0G
35	22	E61	100	900	HHXD350ARA220ME61G
	27	F61	60	1,300	HHXD350□RA270MF61G
	47	F61	60	1,300	HHXD350□RA470MF61G
	47	F80	35	2,000	HHXD350□RA470MF80G
	68	F80	35	2,000	HHXD350□RA680MF80G
	100	HA0	27	2,300	HHXD350□RA101MHA0G
	150	HA0	27	2,300	HHXD350□RA151MHA0G
	150	JA0	20	2,500	HHXD350□RA151MJA0G
	270	JA0	20	2,500	HHXD350□RA271MJA0G
50	10	F61	80	1,100	HHXD500□RA100MF61G
	15	F80	40	1,600	HHXD500□RA150MF80G
	22	F61	80	1,100	HHXD500□RA220MF61G
	33	F80	40	1,600	HHXD500□RA330MF80G
	33	HA0	30	1,800	HHXD500□RA330MHA0G
	47	HA0	30	1,800	HHXD500□RA470MHA0G
	56	JA0	25	2,400	HHXD500□RA560MJA0G
	68	HA0	30	1,800	HHXD500□RA680MHA0G
	82	HA0	30	1,800	HHXD500□RA820MHA0G
	100	JA0	25	2,400	HHXD500□RA101MJA0G
	120	JA0	25	2,400	HHXD500□RA121MJA0G
63	6.8	F61	120	1,000	HHXD630□RA6R8MF61G
	10	F61	120	1,000	HHXD630□RA100MF61G
	10	F80	80	1,500	HHXD630□RA100MF80G
	22	F80	80	1,500	HHXD630□RA220MF80G
	22	HA0	40	1,600	HHXD630□RA220MHA0G
	33	HA0	40	1,600	HHXD630□RA330MHA0G
	33	JA0	30	2,400	HHXD630□RA330MJA0G
	47	HA0	40	1,600	HHXD630□RA470MHA0G
	56	JA0	30	2,400	HHXD630□RA560MJA0G
	82	JA0	30	2,400	HHXD630□RA820MJA0G
	100	JA0	30	2,400	HHXD630□RA101MJA0G
80	27	HA0	45	1,600	HHXD800□RA270MHA0G
	56	JA0	33	2,400	HHXD800□RA560MJA0G

□ : Enter the appropriate terminal code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Capacitance(μF) \ Frequency(Hz)	120	1k	5k	10k	20k	30k	100k to 500k
to 10	0.03	0.30	0.50	0.60	0.70	0.75	1.00
15 to 33	0.07	0.30	0.50	0.60	0.70	0.75	1.00
47 to 180	0.10	0.40	0.60	0.70	0.80	0.80	1.00
220 to 560	0.13	0.45	0.65	0.75	0.85	0.85	1.00