



High temperature resistant chip solid electrolyte tantalum capacitor

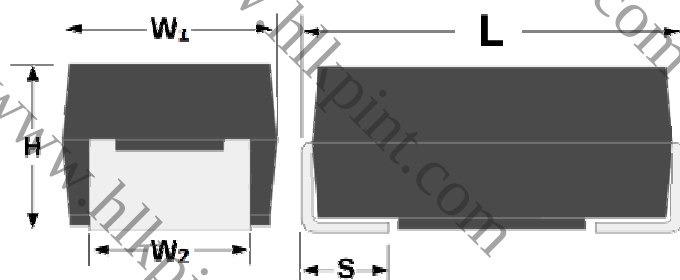
HL45 series

Product characteristics

- Epoxy resin molded package, sheet, small size, light weight, easy to integrate, polarity;
- Operating temperature up to 150°C, stable electrical and storage performance, long working life, high reliability;
- Typical applications include terminal decoupling and filtering applications in industrial and automotive applications such as DC/DC converters, portable electronics, communication electronics, and control units equal to 150 ° C;
- Enforce standards: QJ/PWV326-2010.



Overall dimension(mm)



Case Code	EIA Code	EIA Metric	L	W ₁	H	W ₂	S
A	1206	3216 - 18	3.30±0.20	1.70±0.20	1.80±0.20	0.70±0.20	1.20±0.20
B	1210	3528 - 21	3.60±0.20	2.90±0.20	2.10±0.20	0.70±0.20	2.20±0.20
C	2312	6032 - 28	6.20±0.20	3.30±0.20	2.60±0.20	1.30±0.20	2.20±0.20
D	2917	7343 - 31	7.40±0.20	4.40±0.20	3.00±0.20	1.30±0.20	2.40±0.20
E	2917	7343 - 43	7.40±0.40	4.40±0.40	4.30±0.40	1.30±0.20	2.40±0.20

Product code

HL45H	-	D	010	M	107	A	T
Model number	separator	Case size	Dc rated voltage	Capacity tolerance	Capacity code	Operating temperature	Packing method
		See table above	004=4Vdc; 6R3=6.3Vdc; 010=10Vdc; 016=16Vdc; 020=20Vdc; 025=25Vdc; 035=35Vdc; 050=50Vdc;	K=±10% M=±20%	The first 2 digits are significant numbers in pF, and the third digit is an exponent (i.e. how many zeros are followed by the significant number).	A=150°C	T= braid

Environmental statement

The RoHS Declaration (6/6) is in compliance with the requirements of Directive 2002/95/EC, which stipulates the use of 100%Sn solders, gold-coated or non-magnetic 100%Sn solders.



LEAD-FREE



Product identification



Technical characteristics

Technical parameter	All technical parameters were measured at 1 atmosphere at +25 ° C								
Capacity range	0.47µF~220µF								
Capacity tolerance	±10%; ±20%;								
Rated voltage(V _R)	≤+85°C:	4	6.3	10	16	20	25	35	50
Class voltage(V _C)	≤+150°C:	2.7	4	6.3	10	15	17	23	33
Surge voltage(V _S)	≤+85°C:	5.2	8	13	20	26	32	46	65
Surge voltage(V _S)	≤+150°C:	3.4	5	8	13	16	20	28	40
Temperature range	-55°C to+150°C								
Extraction coating	Tin coating (standard), gold coating or tin lead coating to make additional requirements								



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Product specification Shell number comparison table
(letters are shell number codes)

Rated voltage (V)	4	6.3	10	16	20	25	35	50
Capacity(μF)	Shell number							
0.47						A	A/B	C
0.68					A	A	A/B	C
1				A	A	A/B	A/B	C
1.5			A	A	A	B	B/C	C/D
2.2		A	A	A	A/B	B	C	C/D
3.3		A	A	A/B	B	B/C	C	D
4.7		A	A/B	A/B	B/C	B/C	C/D	D
6.8		A/B	A/B	A/B/C	C	C/D	C/D	D/E
10		A/B	B/C	B/C	C	C/D	D	E
15		B/C	B/C	B/C	C/D	C/D	D/E	
22		B/C	B/C	C/D	C/D	D	D/E	
33		B/C	C/D	C/D	D	D	E	
47		B/C/D	C/D	C/D	D/E	E	E	
68		B/C/D	C/D	D	E			
100		D	D	E				
150	D	D	E					
220			E					



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Product code and parameter specification

Rated voltage	Rated voltage	Capacity	Shell number	Product code	Maximum leakage current @+25℃	Maximum loss @+25℃, 100Hz	ESR maximum @+25℃, 100kHz	Maximum allowable Ripple current (mA) @100kHz			Operating temperature	Humidity sensitivity class
V	V	μF			μA	%	mΩ	+25℃	+85℃	+150℃	℃	
4	2.7	150	D	HL45H-D004#157AT	6.0	6	0.6	418	251	125	150	1
6.3	4.2	2.2	A	HL45H-A6R3#225AT	0.5	6	8	90	54	27	150	1
6.3	4.2	3.3	A	HL45H-A6R3#335AT	0.5	6	8	90	54	27	150	1
6.3	4.2	4.7	A	HL45H-A6R3#475AT	0.5	6	8	90	54	27	150	1
6.3	4.2	6.8	A	HL45H-A6R3#685AT	0.5	6	8	90	54	27	150	1
6.3	4.2	6.8	B	HL45H-B6R3#685AT	0.5	4.5	2.7	167	100	50	150	1
6.3	4.2	10	A	HL45H-A6R3#106AT	0.6	6	8	90	54	27	150	1
6.3	4.2	10	B	HL45H-B6R3#106AT	0.6	4.5	2.1	189	113	57	150	1
6.3	4.2	15	B	HL45H-B6R3#156AT	0.9	6	5	122	73	37	150	1
6.3	4.2	15	C	HL45H-C6R3#156AT	0.9	4.5	1.7	230	138	69	150	1
6.3	4.2	22	B	HL45H-B6R3#226AT	1.4	6	5	122	73	37	150	1
6.3	4.2	22	C	HL45H-C6R3#226AT	1.4	4.5	1.3	263	158	79	150	1
6.3	4.2	33	B	HL45H-B6R3#336AT	2.1	6	3.5	146	88	44	150	1
6.3	4.2	33	C	HL45H-C6R3#336AT	2.1	4.5	1.1	286	172	86	150	1
6.3	4.2	47	B	HL45H-B6R3#476AT	3.0	6	3	158	95	47	150	1
6.3	4.2	47	C	HL45H-C6R3#476AT	3.0	6	2	212	127	64	150	1
6.3	4.2	47	D	HL45H-D6R3#476AT	3.0	4.5	0.8	362	217	109	150	1
6.3	4.2	68	B	HL45H-B6R3#686AT	4.3	6	4.2	134	80	40	150	1
6.3	4.2	68	C	HL45H-C6R3#686AT	4.3	6	2	212	127	64	150	1
6.3	4.2	68	D	HL45H-D6R3#686AT	4.3	4.5	0.6	418	251	125	150	1
6.3	4.2	100	D	HL45H-D6R3#107AT	6.3	6	0.6	418	251	125	150	1
6.3	4.2	150	D	HL45H-D6R3#157AT	9.5	6	0.5	458	275	137	150	1
10	6.7	1.5	A	HL45H-A010#155AT	0.5	6	8	90	54	27	150	1
10	6.7	2.2	A	HL45H-A010#225AT	0.5	6	8	90	54	27	150	1
10	6.7	3.3	A	HL45H-A010#335AT	0.5	6	9	85	51	25	150	1
10	6.7	4.7	A	HL45H-A010#475AT	0.5	6	8	90	54	27	150	1
10	6.7	4.7	B	HL45H-B010#475AT	0.5	4.5	2.7	167	100	50	150	1
10	6.7	6.8	A	HL45H-A010#685AT	0.7	6	8	90	54	27	150	1
10	6.7	6.8	B	HL45H-B010#685AT	0.7	4.5	2.1	189	113	57	150	1
10	6.7	10	B	HL45H-B010#106AT	1.0	6	6	112	67	34	150	1
10	6.7	10	C	HL45H-C010#106AT	1.0	4.5	1.7	230	138	69	150	1
10	6.7	15	B	HL45H-B010#156AT	1.5	6	5	122	73	37	150	1
10	6.7	15	C	HL45H-C010#156AT	1.5	4.5	1.8	224	134	67	150	1
10	6.7	22	B	HL45H-B010#226AT	2.2	6	5	122	73	37	150	1
10	6.7	22	C	HL45H-C010#226AT	2.2	6	1.6	237	142	71	150	1
10	6.7	33	C	HL45H-C010#336AT	3.3	6	2.5	190	114	57	150	1
10	6.7	33	D	HL45H-D010#336AT	3.3	6	1.1	309	185	93	150	1
10	6.7	47	C	HL45H-C010#476AT	4.7	6	2	212	127	64	150	1
10	6.7	47	D	HL45H-D010#476AT	4.7	6	0.9	342	205	102	150	1
10	6.7	68	C	HL45H-C010#686AT	6.8	6	2	212	127	64	150	1
10	6.7	68	D	HL45H-D010#686AT	6.8	6	1.5	265	159	79	150	1
10	6.7	100	D	HL45H-D010#107AT	10.0	8	1.2	296	177	89	150	1
10	6.7	150	E	HL45H-E010#157AT	15.0	8	0.8	395	237	119	150	1
10	6.7	220	E	HL45H-E010#227AT	22.0	8	1	354	212	106	150	1
16	10.7	1	A	HL45H-A016#105AT	0.5	4	10	81	48	24	150	1
16	10.7	1.5	A	HL45H-A016#155AT	0.5	6	8	90	54	27	150	1
16	10.7	2.2	A	HL45H-A016#225AT	0.5	6	8	90	54	27	150	1
16	10.7	3.3	A	HL45H-A016#335AT	0.5	6	9	85	51	25	150	1
16	10.7	3.3	B	HL45H-B016#335AT	0.5	6	5.5	117	70	35	150	1
16	10.7	4.7	A	HL45H-A016#475AT	0.8	6	8	90	54	27	150	1
16	10.7	4.7	B	HL45H-B016#475AT	0.8	6	4	137	82	41	150	1
16	10.7	6.8	A	HL45H-A016#685AT	1.1	4.5	2.6	158	95	47	150	1
16	10.7	6.8	B	HL45H-B016#685AT	1.1	6	6	112	67	34	150	1

- 1 # is the replacement character used to indicate the capacity tolerance, with K representing ±10% and M representing ±20%;
- 2 Do not use a multimeter;
- 3 Capacity and loss measurement conditions :100Hz, U₁=2.2_{-0.5}⁰V, U₂~1.0_{-0.5}⁰V, Frequency=100Hz, series measurement
- 4 If the ambient temperature is higher than +85℃, the derating voltage is required. (The leakage current parameter is the reading after 5 minutes of power-on.)
- 5 For special sizes or requirements please contact us.



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HL45 series

Product code and parameter specification

Rated voltage	Class voltage	Capacity	Shell number	Product code	Maximum leakage current @+25℃	Maximum loss @+25℃, 100Hz	ESR maximum @+25℃, 100kHz	Maximum allowable Ripple current (mA)			Operating temperature	MSL
V	V	μF			μA	%	mΩ	+25℃	+85℃	150℃	℃	
16	10.7	6.8	C	HL45H-C016#685AT	1.1	4.5	1.7	230	138	69	150	1
16	10.7	10	B	HL45H-B016#106AT	1.6	6	6	112	67	34	150	1
16	10.7	10	C	HL45H-C016#106AT	1.6	4.5	1.4	254	152	76	150	1
16	10.7	15	B	HL45H-B016#156AT	2.4	6	5	122	73	37	150	1
16	10.7	15	C	HL45H-C016#156AT	2.4	6	1.8	224	134	67	150	1
16	10.7	22	C	HL45H-C016#226AT	3.5	6	3	173	104	52	150	1
16	10.7	22	D	HL45H-D016#226AT	3.5	4.5	0.8	362	217	109	150	1
16	10.7	33	C	HL45H-C016#336AT	5.3	6	2.5	190	114	57	150	1
16	10.7	33	D	HL45H-D016#336AT	5.3	6	0.9	342	205	102	150	1
16	10.7	47	C	HL45H-C016#476AT	7.5	6	2	212	127	64	150	1
16	10.7	47	D	HL45H-D016#476AT	7.5	6	1.5	265	159	79	150	1
16	10.7	68	D	HL45H-D016#686AT	10.9	6	1.5	265	159	79	150	1
16	10.7	100	E	HL45H-E016#107AT	16.0	8	0.8	395	237	119	150	1
20	13.3	0.68	A	HL45H-A020#684AT	0.5	3	7.8	91	55	27	150	1
20	13.3	1	A	HL45H-A020#105AT	0.5	4	10	81	48	24	150	1
20	13.3	1.5	A	HL45H-A020#155AT	0.5	6	16	64	38	19	150	1
20	13.3	2.2	A	HL45H-A020#225AT	0.5	6	12	74	44	22	150	1
20	13.3	2.2	B	HL45H-B020#225AT	0.5	6	5	122	73	37	150	1
20	13.3	3.3	B	HL45H-B020#335AT	0.7	6	4	137	82	41	150	1
20	13.3	4.7	B	HL45H-B020#475AT	0.9	6	6	112	67	34	150	1
20	13.3	4.7	C	HL45H-C020#475AT	0.9	6	3	173	104	52	150	1
20	13.3	6.8	C	HL45H-C020#685AT	1.4	6	2.4	194	116	58	150	1
20	13.3	10	C	HL45H-C020#106AT	2.0	6	4	150	90	45	150	1
20	13.3	15	C	HL45H-C020#156AT	3.0	6	4	150	90	45	150	1
20	13.3	15	D	HL45H-D020#156AT	3.0	6	1.1	309	185	93	150	1
20	13.3	22	C	HL45H-C020#226AT	4.4	6	3	173	104	52	150	1
20	13.3	22	D	HL45H-D020#226AT	4.4	6	0.9	342	205	102	150	1
20	13.3	33	D	HL45H-D020#336AT	6.6	6	1.5	265	159	79	150	1
20	13.3	47	D	HL45H-D020#476AT	9.4	6	1.5	265	159	79	150	1
20	13.3	47	E	HL45H-E020#476AT	9.4	6	0.8	395	237	119	150	1
20	13.3	68	E	HL45H-E020#686AT	13.6	6	0.8	395	237	119	150	1
25	16.7	0.47	A	HL45H-A025#474AT	0.5	4	14	68	41	20	150	1
25	16.7	0.68	A	HL45H-A025#684AT	0.5	4	17	62	37	19	150	1
25	16.7	1	A	HL45H-A025#105AT	0.5	4	16	64	38	19	150	1
25	16.7	1	B	HL45H-B025#105AT	0.5	4	6.5	107	64	32	150	1
25	16.7	1.5	B	HL45H-B025#155AT	0.5	6	6.5	107	64	32	150	1
25	16.7	2.2	B	HL45H-B025#225AT	0.6	6	8	97	58	29	150	1
25	16.7	3.3	B	HL45H-B025#335AT	0.8	6	7	104	62	31	150	1
25	16.7	3.3	C	HL45H-C025#335AT	0.8	6	4	150	90	45	150	1
25	16.7	4.7	B	HL45H-B025#475AT	1.2	6	6	112	67	34	150	1
25	16.7	4.7	C	HL45H-C025#475AT	1.2	6	2.5	190	114	57	150	1
25	16.7	6.8	C	HL45H-C025#685AT	1.7	6	3	173	104	52	150	1
25	16.7	6.8	D	HL45H-D025#685AT	1.7	4.5	1.1	309	185	93	150	1
25	16.7	10	C	HL45H-C025#106AT	2.5	6	4	150	90	45	150	1
25	16.7	10	D	HL45H-D025#106AT	2.5	6	1.2	296	177	89	150	1
25	16.7	15	C	HL45H-C025#156AT	3.8	6	4	150	90	45	150	1
25	16.7	15	D	HL45H-D025#156AT	3.8	6	1	324	194	97	150	1
25	16.7	22	D	HL45H-D025#226AT	5.5	6	1.8	242	145	72	150	1
25	16.7	33	D	HL45H-D025#336AT	8.3	6	1.5	265	159	79	150	1
25	16.7	47	E	HL45H-E025#476AT	11.8	6	1.2	323	194	97	150	1
35	23.3	0.47	A	HL45H-A035#474AT	0.5	4	18	60	36	18	150	1
35	23.3	0.47	B	HL45H-B035#474AT	0.5	3	8	97	58	29	150	1
35	23.3	0.68	A	HL45H-A035#684AT	0.5	4	17	62	37	19	150	1

1 # is the replacement character used to indicate the capacity tolerance, with K representing ±10% and M representing ±20%;
2 Do not use a multimeter;
3 Capacity and loss measurement conditions :100Hz, U_r=2.2⁰₋₁V, U_~=1.0⁰_{±0.5}V, Frequency=100Hz, series measurement
4 If the ambient temperature is higher than +85 °C, the derating voltage is required. (The leakage current parameter is the reading after 5 minutes of power-on.)
5 For special sizes or requirements please contact us.



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HL45 series

Product code and parameter specification

Rated voltage	Class voltage	Capacity	Shell number	Product code	Maximum leakage current @+25℃	Maximum loss @+25℃,100Hz	ESR maximum @+25℃,100kHz	Maximum allowable Ripple current (mA) @100kHz			Operating temperature	Humidity sensitivity class
V	V	μF			μA	%	mΩ	+25℃	+85℃	+150℃	℃	
35	23.3	0.68	B	HL45H-B035#684AT	0.5	3	5.5	117	70	35	150	1
35	23.3	1	A	HL45H-A035#105AT	0.5	4	10	81	48	24	150	1
35	23.3	1	B	HL45H-B035#105AT	0.5	4	6.5	107	64	32	150	1
35	23.3	1.5	B	HL45H-B035#155AT	0.5	6	12	79	47	24	150	1
35	23.3	1.5	C	HL45H-C035#155AT	0.5	6	4.5	141	85	42	150	1
35	23.3	2.2	C	HL45H-C035#225AT	0.8	6	3.5	160	96	48	150	1
35	23.3	3.3	C	HL45H-C035#335AT	1.2	6	2.5	190	114	57	150	1
35	23.3	4.7	C	HL45H-C035#475AT	1.6	6	5	134	80	40	150	1
35	23.3	4.7	D	HL45H-D035#475AT	1.6	6	1.5	265	159	79	150	1
35	23.3	6.8	C	HL45H-C035#685AT	2.4	6	3	173	104	52	150	1
35	23.3	6.8	D	HL45H-D035#685AT	2.4	6	1.3	284	171	85	150	1
35	23.3	10	D	HL45H-D035#106AT	3.5	6	1.1	309	185	93	150	1
35	23.3	15	D	HL45H-D035#156AT	5.3	6	2	229	137	69	150	1
35	23.3	15	E	HL45H-E035#156AT	5.3	6	1.1	337	202	101	150	1
35	23.3	22	D	HL45H-D035#226AT	7.7	6	0.7	387	232	116	150	1
35	23.3	22	E	HL45H-E035#226AT	7.7	6	1	354	212	106	150	1
35	23.3	33	E	HL45H-E035#336AT	11.6	6	0.5	500	300	150	150	1
35	23.3	47	E	HL45H-E035#476AT	16.5	6	0.5	500	300	150	150	1
50	33.3	0.47	C	HL45H-C050#474AT	0.5	3	6.5	118	71	35	150	1
50	33.3	0.68	C	HL45H-C050#684AT	0.5	3	5.5	128	77	38	150	1
50	33.3	1	C	HL45H-C050#105AT	0.5	4	6	122	73	37	150	1
50	33.3	1.5	C	HL45H-C050#155AT	0.8	6	8	106	64	32	150	1
50	33.3	1.5	D	HL45H-D050#155AT	0.8	4.5	2.8	194	116	58	150	1
50	33.3	2.2	C	HL45H-C050#225AT	1.1	6	7	113	68	34	150	1
50	33.3	2.2	D	HL45H-D050#225AT	1.1	4.5	2	229	137	69	150	1
50	33.3	3.3	D	HL45H-D050#335AT	1.7	6	2	229	137	69	150	1
50	33.3	4.7	D	HL45H-D050#475AT	2.4	6	1.5	265	159	79	150	1
50	33.3	6.8	D	HL45H-D050#685AT	3.4	6	0.7	387	232	116	150	1
50	33.3	6.8	E	HL45H-E050#685AT	3.4	6	1.5	289	173	87	150	1
50	33.3	10	E	HL45H-E050#106AT	5.0	6	1.8	264	158	79	150	1

- 1 # is the replacement character used to indicate the capacity tolerance, with K representing ±10% and M representing ±20%;
- 2 Do not use a multimeter;
- 3 Capacity and loss measurement conditions :100Hz, U_{DC}=2.2V, U_{AC}~1.0V, Frequency=100Hz, series measurement
- 4 If the ambient temperature is higher than +85℃, the derating voltage is required. (The leakage current parameter is the reading after 5 minutes of power-on.)
- 5 For special sizes or requirements please contact us.