

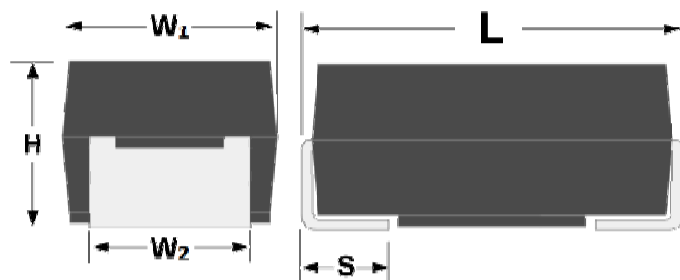


Product characteristics

- Epoxy resin molded package, sheet, small size, light weight, easy to integrate, polarity;
- Operating temperature up to 150 , 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.

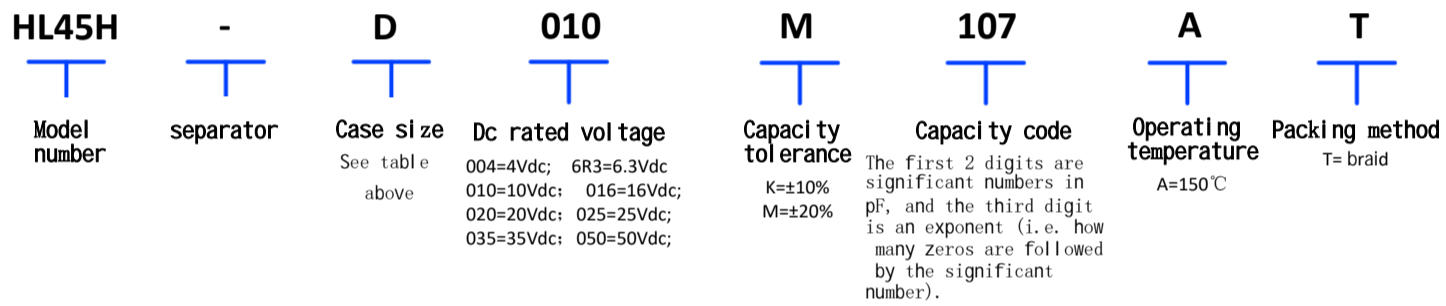


Overall dimension(mm)



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



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.



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									



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

Rated voltage (V)	4	6.3	10	16	20	25	35	50
Capacity(μ F)	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					



Product code and parameter specification

Rated voltage	Rated voltage	Capacity	Shell number	Product code	Maximum leakage current @+25°C	Maximum loss @+25°C, 100Hz	ESR maximum @+25°C, 100kHz	Maximum allowable ripple current (mA)			Operating temperature	Humidity sensitivity class
								+25°C	+85°C	+150°C		
V	V	μF			μA	%	m				°C	
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

- # is the replacement character used to indicate the capacity tolerance, with K representing ±10% and M representing ±20%;
- Do not use a multimeter;
- Capacity and loss measurement conditions :100Hz, U_{DC}=2.2V, U_{AC}~1.0V, Frequency=100Hz, series measurement
- 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.)
- For special sizes or requirements please contact us.



High temperature resistant chip solid electrolyte tantalum capacitor

HL45 series

Product code and parameter specification

Rated voltage	Class voltage	Capacity	Shell number	Product code	Maximum leakage current @+25°C	Maximum loss @+25°C, 100Hz	ESR maximum @+25°C, 100kHz	Maximum allowable Ripple current (mA)			Operating temperature	MSL
								+25°C	+85°C	150°C		
V	V	μF			μA	%	m				°C	
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

- # is the replacement character used to indicate the capacity tolerance, with K representing ±10% and M representing ±20%;
- Do not use a multimeter;
- Capacity and loss measurement conditions :100Hz, U_~=2.2₋₁V, U_~=1.0_{0.5}V, Frequency=100Hz, series measurement
- 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.)
- For special sizes or requirements please contact us.



Product code and parameter specification

Rated voltage	Class voltage	Capacity	Shell number	Product code	Maximum leakage current @+25°C	Maximum loss @+25°C,100Hz	ESR maximum @+25°C,100kHz	Maximum allowable Ripple current (mA) @100kHz			Operating temperature	Humidity sensitivity class
								+25°C	+85°C	+150°C		
V	V	μF			μA	%	m				°C	
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

- # is the replacement character used to indicate the capacity tolerance, with K representing ±10% and M representing ±20%;
- Do not use a multimeter;
- Capacity and loss measurement conditions :100Hz, $U_{DC}=2.2 \cdot V$, $U_{AC}=1.0 \cdot V$, Frequency=100Hz, series measurement
- 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.)
- For special sizes or requirements please contact us.