



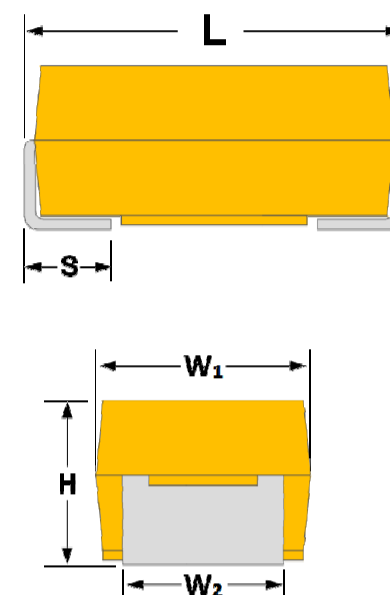
Product characteristics

- It has a very high working electric field strength and is larger than any type of capacitor to ensure its miniaturization;
- Can be very convenient to obtain a large capacitance, in the power filter, AC bypass and other uses few competitors;
- With unidirectional conductivity, that is, the so-called "polarity", the application should be according to the positive and negative direction of the power supply access current, the anode (positive) of the capacitor is connected to the power supply "+" pole, the cathode (negative) is connected to the "-" pole of the power supply if the wrong connection not only the capacitor can not play a role, but also the leakage current is very large, the core will heat up in a short time, damage the oxide film and then failure;
- The operating voltage has a certain upper normal value, but this shortcoming can be made up with transistor or integrated circuit power supply;
- It has the performance of storing electricity, charging and discharging;



Overall dimensions (mm)

Shell number	EIA English code	EIA metric code	L	W ₁	H	S	W ₂
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
V	2924	7360 - 38	7.50±0.40	6.20±0.40	3.80±0.40	1.40±0.20	3.00±0.20



Product code

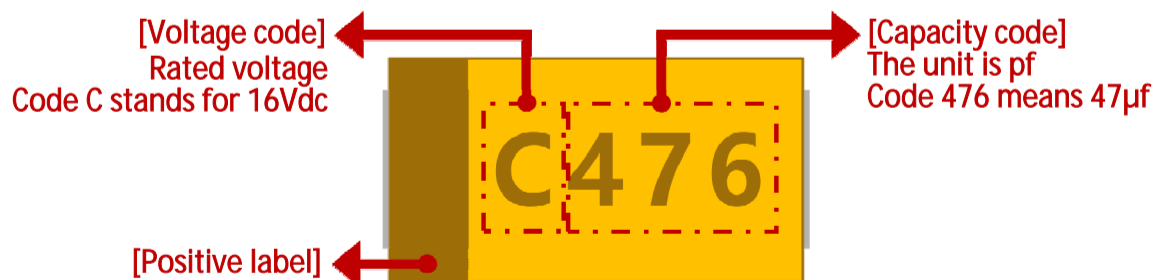
HL45	-	D	010	M	107	T
Model number	separator	Case size See table above	Dc rated voltage 2R5=2.5Vdc; 004=4Vdc;6R3=6.3Vdc; 010=10Vdc;016=16Vdc; 020=20Vdc;025=25Vdc; 035=35Vdc;050=50Vdc.	Capacity tolerance K=±10% M=±20%	Capacity code The first 2 digits are significant digits in pF, and the third digit is an exponent. (i.e. how many zeros are followed by a significant number)	Packing method T= braid W= disk mount

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~2200µF									
Capacity tolerance	±10%; ±20%;									
Rated voltage(V _R)	≤+85°C:	2.5	4	6.3	10	16	20	25	35	50
Class voltage(V _C)	≤+125°C:	1.7	2.7	4	6.3	10	15	17	23	33
Surge voltage(V _S)	≤+85°C:	3.3	5.2	8	13	20	26	32	46	65
Surge voltage(V _S)	≤+125°C:	2.2	3.4	5	8	13	16	20	28	40
Temperature range	-55°C to+125°C									
Extraction coating	Tin coating (standard), gold coating or tin lead coating to make additional requirements									



Product specification Shell number table (shell number code)

Rated voltage(V)		2.5	4	6.3	10	16	20	25	35	50
Voltage code		F	G	J	A	C	D	E	V	T
Capacity (μF)	Capacity code	Shell number								
0.1	104									
0.15	154								A	A
0.22	224								A	A/B
0.33	334							A	A	A/B
0.47	474						A	A	A/B	A/B
0.68	684					A	A	A/B	A/B	A/B/C
1	105				A/B	A/B	A/B	A/B	A/B	A/B/C
1.5	155			A	A	A/B	A/B	A/B	A/B/C	A/B/C
2.2	225		A	A	A/B	A/B	A/B	A/B/C	A/B/C	B/C/D
3.3	335		A	A/B	A/B	A/B	A/B/C	A/B/C	B/C	B/C/D
4.7	475		A/B	A/B	A/B	A/B/C	A/B/C	A/B/C	B/C/D	C/D
6.8	685		A/B	A/B	A/B/C	A/B/C	A/B/C	B/C/D	B/C/D	C/D
10	106		A/B	A/B/C	A/B/C	A/B/C	A/B/C	B/C/D	C/D/E	C/D/E
15	156		A/B/C	A/B/C	A/B/C	A/B/C	B/C/D	C/D	C/D/E	D/E/V
22	226		A/B/C	A/B/C	A/B/C	A/B/C	B/C/D	C/D	C/D/E	D/E/V
33	336	A	A/B/C	A/B/C	A/B/C	B/C/D	C/D	D/E	D/E/V	E/V
47	476	A	A/B/C	A/B/C	A/B/C	B/C/D/E	C/D/E	D/E	D/E/V	
68	686	A	A/B/C	A/B/C	B/C/D	C/D/E	C/D/E	D/E/V	E/V	
100	107	A/B	A/B/C	A/B/C	B/C/D	C/D/E	D/E/V	E/V		
150	157	B	B/C/D	B/C/D	C/D/E	D/E/V	D/E/V	E/V		
220	227	B/D	B/C/D	B/C/D	C/D/E	D/E/V	E/V			
330	337	D	C/D/E	C/D/E	D/E/V	E/V	E/V			
470	477	C/D	C/D/E	D/E/V	E/V	E				
680	687	C/D/E	D/E	E/V	E					
1000	108	D/E	D/E/V	E/V						
1500	158	D/E/V	E/V							
2200	228	V								



Product code and parameter specification

Product code	Shell number	Rated voltage V	Nominal capacity μF	Rated temperature °C	Class voltage V	Class temperature °C	Maximum leakage current @ 25°C μA	Maximum loss @ 25 100Hz %	ESR maximum @ 25 100KHz Ω	Maximum allowable ripple current @100KHz IRMS(mA)		
										25°C	85°C	125°C
HL45-A2R5#336T	A	2.5	33	85	1.7	125	0.8	8	3.0	153	137	61
HL45-A2R5#476T	A	2.5	47	85	1.7	125	1.2	6	3.0	153	137	61
HL45-A2R5#686T	A	2.5	68	85	1.7	125	1.7	8	2.5	167	151	67
HL45-A2R5#107T	A	2.5	100	85	1.7	125	2.5	20	3.0	153	137	61
HL45-B2R5#107T	B	2.5	100	85	1.7	125	2.5	8	2.0	200	180	80
HL45-B2R5#157T	B	2.5	150	85	1.7	125	3.8	10	1.8	211	190	84
HL45-B2R5#227T	B	2.5	220	85	1.7	125	5.5	16	1.6	224	201	89
HL45-D2R5#227T	D	2.5	220	85	1.7	125	5.5	8	0.8	379	341	152
HL45-D2R5#337T	D	2.5	330	85	1.7	125	8.3	8	0.3	619	557	248
HL45-C2R5#477T	C	2.5	470	85	1.7	125	12	12	0.5	424	382	170
HL45-D2R5#477T	D	2.5	470	85	1.7	125	12	8	0.4	536	483	214
HL45-C2R5#687T	C	2.5	680	85	1.7	125	17	18	0.6	387	349	155
HL45-D2R5#687T	D	2.5	680	85	1.7	125	17	16	0.5	480	432	192
HL45-E2R5#687T	E	2.5	680	85	1.7	125	17	10	0.5	500	450	200
HL45-D2R5#108T	D	2.5	1000	85	1.7	125	25	18	0.5	480	432	192
HL45-E2R5#108T	E	2.5	1000	85	1.7	125	25	14	0.4	559	503	224
HL45-D2R5#158T	D	2.5	1500	85	1.7	125	38	20	0.4	536	483	214
HL45-E2R5#158T	E	2.5	1500	85	1.7	125	38	14	0.3	645	581	258
HL45-V2R5#158T	V	2.5	1500	85	1.7	125	38	14	0.2	866	779	346
HL45-V2R5#228T	V	2.5	2200	85	1.7	125	55	20	0.4	612	551	245
HL45-A004#225T	A	4	2.2	85	2.7	125	0.5	6	3.0	153	137	61
HL45-A004#335T	A	4	3.3	85	2.7	125	0.5	6	3.0	153	137	61
HL45-A004#475T	A	4	4.7	85	2.7	125	0.5	6	3.0	153	137	61
HL45-B004#475T	B	4	4.7	85	2.7	125	0.5	6	2.0	200	180	80
HL45-A004#685T	A	4	6.8	85	2.7	125	0.5	6	2.5	167	151	67
HL45-B004#685T	B	4	6.8	85	2.7	125	0.5	6	2.0	200	180	80
HL45-A004#106T	A	4	10	85	2.7	125	0.5	6	3.0	153	137	61
HL45-B004#106T	B	4	10	85	2.7	125	0.5	6	2.5	179	161	72
HL45-A004#156T	A	4	15	85	2.7	125	0.6	6	3.0	153	137	61
HL45-B004#156T	B	4	15	85	2.7	125	0.6	6	2.5	179	161	72
HL45-C004#156T	C	4	15	85	2.7	125	0.6	6	1.5	245	220	98
HL45-A004#226T	A	4	22	85	2.7	125	0.9	6	3.0	153	137	61
HL45-B004#226T	B	4	22	85	2.7	125	0.9	6	2.5	179	161	72
HL45-C004#226T	C	4	22	85	2.7	125	0.9	6	1.5	245	220	98
HL45-A004#336T	A	4	33	85	2.7	125	1.3	8	3.0	153	137	61
HL45-B004#336T	B	4	33	85	2.7	125	1.3	6	2.5	179	161	72
HL45-C004#336T	C	4	33	85	2.7	125	1.3	6	1.5	245	220	98
HL45-A004#476T	A	4	47	85	2.7	125	1.9	8	3.0	153	137	61
HL45-B004#476T	B	4	47	85	2.7	125	1.9	6	2.5	179	161	72
HL45-C004#476T	C	4	47	85	2.7	125	1.9	6	1.5	245	220	98
HL45-A004#686T	A	4	68	85	2.7	125	2.7	14	2.5	167	151	67
HL45-B004#686T	B	4	68	85	2.7	125	2.7	6	1.8	211	190	84
HL45-C004#686T	C	4	68	85	2.7	125	2.7	6	1.5	245	220	98
HL45-A004#107T	A	4	100	85	2.7	125	4	18	3.0	153	137	61
HL45-B004#107T	B	4	100	85	2.7	125	4	14	2.0	200	180	80
HL45-C004#107T	C	4	100	85	2.7	125	4	8	1.5	245	220	98
HL45-B004#157T	B	4	150	85	2.7	125	6	16	1.8	211	190	84
HL45-C004#157T	C	4	150	85	2.7	125	6	8	1.2	274	246	110
HL45-D004#157T	D	4	150	85	2.7	125	6	8	0.8	379	341	152
HL45-B004#227T	B	4	220	85	2.7	125	8.8	18	1.6	224	201	89
HL45-C004#227T	C	4	220	85	2.7	125	8.8	10	1.2	274	246	110
HL45-D004#227T	D	4	220	85	2.7	125	8.8	8	0.8	379	341	152

- # is the replacement character to indicate the capacity tolerance, K means ±10%, M means ±20%;
- Do not use a multimeter;
- Capacity and loss measurement conditions: 100Hz, U_r=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

Product code	Shell number	Rated voltage	Nominal capacity	Rated temperature	Class voltage	Class temperature	Maximum leakage current @ 25°C	Maximum loss @ 25 100Hz	ESR maximum @ 25 100KHz	Maximum allowable ripple current @100KHz IRMS(mA)		
										25°C	85°C	125°C
		V	μ F	°C	V	°C	μA	%	Ω			
HL45-C004#337T	C	4	330	85	2.7	125	13	10	1.2	274	246	110
HL45-D004#337T	D	4	330	85	2.7	125	13	8	0.9	357	322	143
HL45-E004#337T	E	4	330	85	2.7	125	13	12	0.8	395	356	158
HL45-C004#477T	C	4	470	85	2.7	125	19	14	0.5	424	382	170
HL45-D004#477T	D	4	470	85	2.7	125	19	10	0.4	536	483	214
HL45-E004#477T	E	4	470	85	2.7	125	19	10	0.4	559	503	224
HL45-D004#687T	D	4	680	85	2.7	125	27	12	0.5	480	432	192
HL45-E004#687T	E	4	680	85	2.7	125	27	14	0.5	500	450	200
HL45-D004#108T	D	4	1000	85	2.7	125	40	20	0.5	480	432	192
HL45-E004#108T	E	4	1000	85	2.7	125	40	14	0.4	559	503	224
HL45-V004#108T	V	4	1000	85	2.7	125	40	12	0.3	707	636	283
HL45-E004#158T	E	4	1500	85	2.7	125	60	14	0.3	645	581	258
HL45-V004#158T	V	4	1500	85	2.7	125	60	18	0.2	866	779	346
HL45-A6R3#155T	A	6.3	1.5	85	4	125	0.5	6	3.0	153	137	61
HL45-A6R3#225T	A	6.3	2.2	85	4	125	0.5	6	3.0	153	137	61
HL45-A6R3#335T	A	6.3	3.3	85	4	125	0.5	6	3.0	153	137	61
HL45-B6R3#335T	B	6.3	3.3	85	4	125	0.5	6	2.5	179	161	72
HL45-A6R3#475T	A	6.3	4.7	85	4	125	0.5	6	3.0	153	137	61
HL45-B6R3#475T	B	6.3	4.7	85	4	125	0.5	6	2.0	200	180	80
HL45-A6R3#685T	A	6.3	6.8	85	4	125	0.5	6	2.5	167	151	67
HL45-B6R3#685T	B	6.3	6.8	85	4	125	0.5	6	2.0	200	180	80
HL45-A6R3#106T	A	6.3	10	85	4	125	0.6	6	3.0	153	137	61
HL45-B6R3#106T	B	6.3	10	85	4	125	0.6	6	2.5	179	161	72
HL45-C6R3#106T	C	6.3	10	85	4	125	0.6	6	1.5	245	220	98
HL45-A6R3#156T	A	6.3	15	85	4	125	0.9	6	3.5	141	127	57
HL45-B6R3#156T	B	6.3	15	85	4	125	0.9	10	3.0	163	147	65
HL45-C6R3#156T	C	6.3	15	85	4	125	0.9	6	1.5	245	220	98
HL45-A6R3#226T	A	6.3	22	85	4	125	1.4	6	3.0	153	137	61
HL45-B6R3#226T	B	6.3	22	85	4	125	1.4	6	2.5	179	161	72
HL45-C6R3#226T	C	6.3	22	85	4	125	1.4	6	1.5	245	220	98
HL45-A6R3#336T	A	6.3	33	85	4	125	2.1	8	3.0	153	137	61
HL45-B6R3#336T	B	6.3	33	85	4	125	2.1	6	2.5	179	161	72
HL45-C6R3#336T	C	6.3	33	85	4	125	2.1	6	1.5	245	220	98
HL45-A6R3#476T	A	6.3	47	85	4	125	3	8	3.0	153	137	61
HL45-B6R3#476T	B	6.3	47	85	4	125	3	6	2.5	179	161	72
HL45-C6R3#476T	C	6.3	47	85	4	125	3	6	1.5	245	220	98
HL45-A6R3#686T	A	6.3	68	85	4	125	4.3	14	3.0	153	137	61
HL45-B6R3#686T	B	6.3	68	85	4	125	4.3	8	1.5	231	208	92
HL45-C6R3#686T	C	6.3	68	85	4	125	4.3	6	1.0	300	270	120
HL45-A6R3#107T	A	6.3	100	85	4	125	6.3	26	3.0	153	137	61
HL45-B6R3#107T	B	6.3	100	85	4	125	6.3	12	1.0	283	255	113
HL45-C6R3#107T	C	6.3	100	85	4	125	6.3	8	1.5	245	220	98
HL45-B6R3#157T	B	6.3	150	85	4	125	9.5	18	1.8	211	190	84
HL45-C6R3#157T	C	6.3	150	85	4	125	9.5	8	1.2	274	246	110
HL45-D6R3#157T	D	6.3	150	85	4	125	9.5	8	0.8	379	341	152
HL45-B6R3#227T	B	6.3	220	85	4	125	14	14	1.0	283	255	113
HL45-C6R3#227T	C	6.3	220	85	4	125	14	10	1.2	274	246	110
HL45-D6R3#227T	D	6.3	220	85	4	125	14	8	0.8	379	341	152
HL45-C6R3#337T	C	6.3	330	85	4	125	21	14	1.2	274	246	110
HL45-D6R3#337T	D	6.3	330	85	4	125	21	8	0.9	357	322	143
HL45-E6R3#337T	E	6.3	330	85	4	125	21	8	0.8	395	356	158
HL45-D6R3#477T	D	6.3	470	85	4	125	30	14	0.4	536	483	214

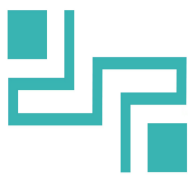
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- Do not use a multimeter;
- Capacity and loss measurement conditions: 100Hz, U_~=2.2₋₁V, U_~=1.0_{0.5}V, Frequency=100Hz, Series measurement
- If the ambient temperature is higher than +85 °C, the derating voltage is required. (The leakage current parameter is the reading after 5 minutes of power-on.)
- For special sizes or requirements please contact us.



Product code and parameter specification

Product code	Shell number	Rated voltage	Nominal capacity	Rated temperature	Class voltage	Class temperature	Maximum leakage current @ 25°C	Maximum loss @ 25 100Hz	ESR maximum @ 25 100KHz	Maximum allowable ripple current @100KHz IRMS(mA)		
		V	μ F	°C	V	°C	μA	%	Ω	25°C	85°C	125°C
HL45-E6R3#477T	E	6.3	470	85	4	125	30	10	0.4	559	503	224
HL45-V6R3#477T	V	6.3	470	85	4	125	30	10	0.4	612	551	245
HL45-E6R3#687T	E	6.3	680	85	4	125	43	10	0.5	500	450	200
HL45-V6R3#687T	V	6.3	680	85	4	125	43	10	0.4	612	551	245
HL45-E6R3#108T	E	6.3	1000	85	4	125	63	14	0.4	559	503	224
HL45-V6R3#108T	V	6.3	1000	85	4	125	63	14	0.3	707	636	283
HL45-A010#105T	A	10	1	85	6.3	125	0.5	4	4.5	125	112	50
HL45-B010#105T	B	10	1	85	6.3	125	0.5	4	2.5	179	161	72
HL45-A010#155T	A	10	1.5	85	6.3	125	0.5	6	3.0	153	137	61
HL45-A010#225T	A	10	2.2	85	6.3	125	0.5	6	3.0	153	137	61
HL45-B010#225T	B	10	2.2	85	6.3	125	0.5	6	2.5	179	161	72
HL45-A010#335T	A	10	3.3	85	6.3	125	0.5	6	3.0	153	137	61
HL45-B010#335T	B	10	3.3	85	6.3	125	0.5	6	2.5	179	161	72
HL45-A010#475T	A	10	4.7	85	6.3	125	0.5	6	4.5	125	112	50
HL45-B010#475T	B	10	4.7	85	6.3	125	0.5	6	3.0	163	147	65
HL45-A010#685T	A	10	6.8	85	6.3	125	0.7	6	4.0	132	119	53
HL45-B010#685T	B	10	6.8	85	6.3	125	0.7	6	3.5	151	136	60
HL45-C010#685T	C	10	6.8	85	6.3	125	0.7	6	1.5	245	220	98
HL45-A010#106T	A	10	10	85	6.3	125	1	6	2.5	167	151	67
HL45-B010#106T	B	10	10	85	6.3	125	1	6	2.5	179	161	72
HL45-C010#106T	C	10	10	85	6.3	125	1	6	1.5	245	220	98
HL45-A010#156T	A	10	15	85	6.3	125	1.5	6	3.0	153	137	61
HL45-B010#156T	B	10	15	85	6.3	125	1.5	6	2.5	179	161	72
HL45-C010#156T	C	10	15	85	6.3	125	1.5	6	1.5	245	220	98
HL45-A010#226T	A	10	22	85	6.3	125	2.2	6	2.5	167	151	67
HL45-B010#226T	B	10	22	85	6.3	125	2.2	6	2.5	179	161	72
HL45-C010#226T	C	10	22	85	6.3	125	2.2	6	1.5	245	220	98
HL45-A010#336T	A	10	33	85	6.3	125	3.3	14	3.0	153	137	61
HL45-B010#336T	B	10	33	85	6.3	125	3.3	6	2.5	179	161	72
HL45-C010#336T	C	10	33	85	6.3	125	3.3	6	1.5	245	220	98
HL45-A010#476T	A	10	47	85	6.3	125	4.7	26	3.0	153	137	61
HL45-B010#476T	B	10	47	85	6.3	125	4.7	8	1.5	231	208	92
HL45-C010#476T	C	10	47	85	6.3	125	4.7	6	1.0	300	270	120
HL45-A010#686T	A	10	68	85	6.3	125	6.8	26	2.5	167	151	67
HL45-B010#686T	B	10	68	85	6.3	125	6.8	10	2.0	200	180	80
HL45-C010#686T	C	10	68	85	6.3	125	6.8	6	1.5	245	220	98
HL45-D010#686T	D	10	68	85	6.3	125	6.8	6	0.8	379	341	152
HL45-A010#107T	A	10	100	85	6.3	125	10	26	3.0	153	137	61
HL45-B010#107T	B	10	100	85	6.3	125	10	18	2.0	200	180	80
HL45-C010#107T	C	10	100	85	6.3	125	10	8	1.5	245	220	98
HL45-D010#107T	D	10	100	85	6.3	125	10	8	1.0	339	305	136
HL45-C010#157T	C	10	150	85	6.3	125	15	10	1.2	274	246	110
HL45-D010#157T	D	10	150	85	6.3	125	15	8	0.8	379	341	152
HL45-E010#157T	E	10	150	85	6.3	125	15	8	0.6	456	411	183
HL45-C010#227T	C	10	220	85	6.3	125	22	18	1.2	274	246	110
HL45-D010#227T	D	10	220	85	6.3	125	22	8	0.8	379	341	152
HL45-E010#227T	E	10	220	85	6.3	125	22	8	0.6	456	411	183
HL45-D010#337T	D	10	330	85	6.3	125	33	14	0.4	536	483	214
HL45-E010#337T	E	10	330	85	6.3	125	33	8	0.9	373	335	149
HL45-V010#337T	V	10	330	85	6.3	125	33	10	0.8	433	390	173
HL45-E010#477T	E	10	470	85	6.3	125	47	14	0.5	500	450	200
HL45-V010#477T	V	10	470	85	6.3	125	47	14	0.4	612	551	245

- # is the replacement character to indicate the capacity tolerance, K means ±10%, M means ±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

Product code	Shell number	Rated voltage V	Nominal capacity μF	Rated temperature °C	Class voltage V	Class temperature °C	Maximum leakage current @ 25°C μA	Maximum loss @ 25 100Hz %	ESR maximum @ 25 100KHz Ω	Maximum allowable ripple current @100KHz IRMS(mA)		
										25°C	85°C	125°C
HL45-E010#687T	E	10	680	85	6.3	125	68	14	0.5	500	450	200
HL45-A016#105T	A	16	1	85	10	125	0.5	4	6.0	108	97	43
HL45-B016#105T	B	16	1	85	10	125	0.5	4	2.5	179	161	72
HL45-A016#155T	A	16	1.5	85	10	125	0.5	6	5.0	118	106	47
HL45-B016#155T	B	16	1.5	85	10	125	0.5	6	4.5	133	120	53
HL45-A016#225T	A	16	2.2	85	10	125	0.5	6	4.0	132	119	53
HL45-B016#225T	B	16	2.2	85	10	125	0.5	6	2.5	179	161	72
HL45-A016#335T	A	16	3.3	85	10	125	0.5	6	4.5	125	112	50
HL45-B016#335T	B	16	3.3	85	10	125	0.5	6	4.5	133	120	53
HL45-A016#475T	A	16	4.7	85	10	125	0.8	6	3.0	153	137	61
HL45-B016#475T	B	16	4.7	85	10	125	0.8	6	3.0	163	147	65
HL45-C016#475T	C	16	4.7	85	10	125	0.8	6	1.8	224	201	89
HL45-A016#685T	A	16	6.8	85	10	125	1.1	6	3.5	141	127	57
HL45-B016#685T	B	16	6.8	85	10	125	1.1	6	2.5	179	161	72
HL45-C016#685T	C	16	6.8	85	10	125	1.1	6	1.5	245	220	98
HL45-A016#106T	A	16	10	85	10	125	1.6	5	3.0	153	137	61
HL45-B016#106T	B	16	10	85	10	125	1.6	4	2.5	179	161	72
HL45-C016#106T	C	16	10	85	10	125	1.6	6	1.5	245	220	98
HL45-A016#156T	A	16	15	85	10	125	2.4	6	3.0	153	137	61
HL45-B016#156T	B	16	15	85	10	125	2.4	6	2.5	179	161	72
HL45-C016#156T	C	16	15	85	10	125	2.4	6	1.5	245	220	98
HL45-A016#226T	A	16	22	85	10	125	3.5	15	3.0	153	137	61
HL45-B016#226T	B	16	22	85	10	125	3.5	6	2.5	179	161	72
HL45-C016#226T	C	16	22	85	10	125	3.5	6	1.5	245	220	98
HL45-B016#336T	B	16	33	85	10	125	5.3	8	2.5	179	161	72
HL45-C016#336T	C	16	33	85	10	125	5.3	6	1.5	245	220	98
HL45-D016#336T	D	16	33	85	10	125	5.3	6	1.0	339	305	136
HL45-B016#476T	B	16	47	85	10	125	7.5	10	2.5	179	161	72
HL45-C016#476T	C	16	47	85	10	125	7.5	6	1.5	245	220	98
HL45-D016#476T	D	16	47	85	10	125	7.5	6	0.8	379	341	152
HL45-E016#476T	E	16	47	85	10	125	7.5	6	0.6	456	411	183
HL45-B016#686T	B	16	68	85	10	125	11	12	1.5	231	208	92
HL45-C016#686T	C	16	68	85	10	125	11	6	1.5	245	220	98
HL45-D016#686T	D	16	68	85	10	125	11	6	0.8	379	341	152
HL45-E016#686T	E	16	68	85	10	125	11	6	0.7	423	380	169
HL45-C016#107T	C	16	100	85	10	125	16	12	1.5	245	220	98
HL45-D016#107T	D	16	100	85	10	125	16	8	1.0	339	305	136
HL45-E016#107T	E	16	100	85	10	125	16	6	0.7	423	380	169
HL45-D016#157T	D	16	150	85	10	125	24	8	0.8	379	341	152
HL45-E016#157T	E	16	150	85	10	125	24	8	0.6	456	411	183
HL45-V016#157T	V	16	150	85	10	125	24	8	0.4	612	551	245
HL45-D016#227T	D	16	220	85	10	125	35	14	0.8	379	341	152
HL45-E016#227T	E	16	220	85	10	125	35	10	0.6	456	411	183
HL45-V016#227T	V	16	220	85	10	125	35	8	0.5	548	493	219
HL45-E016#337T	E	16	330	85	10	125	53	12	0.8	395	356	158
HL45-V016#337T	V	16	330	85	10	125	53	12	0.8	433	390	173
HL45-E016#477T	E	16	470	85	10	125	75	16	0.4	559	503	224
HL45-A020#474T	A	20	0.47	85	15	125	0.5	4	10	84	75	33
HL45-A020#684T	A	20	0.68	85	15	125	0.5	4	6.0	108	97	43
HL45-A020#105T	A	20	1	85	15	125	0.5	4	6.0	108	97	43
HL45-B020#105T	B	20	1	85	15	125	0.5	4	4.0	141	127	57
HL45-A020#155T	A	20	1.5	85	15	125	0.5	6	5.0	118	106	47

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- Do not use a multimeter;
- Capacity and loss measurement conditions: 100Hz, $U_{-} = 2.2 \cdot U_n$, $U_{\sim} = 1.0 \cdot U_n$, 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

Product code	Shell number	Rated voltage V	Nominal capacity μF	Rated temperature °C	Class voltage V	Class temperature °C	Maximum leakage current @ 25°C μA	Maximum loss @ 25 100Hz %	ESR maximum @ 25 100KHz Ω	Maximum allowable ripple current @100KHz IRMS(mA)		
										25°C	85°C	125°C
HL45-B020#155T	B	20	1.5	85	15	125	0.5	6	3.5	151	136	60
HL45-A020#225T	A	20	2.2	85	15	125	0.5	6	4.5	125	112	50
HL45-B020#225T	B	20	2.2	85	15	125	0.5	6	3.5	151	136	60
HL45-A020#335T	A	20	3.3	85	15	125	0.7	4	4.0	132	119	53
HL45-B020#335T	B	20	3.3	85	15	125	0.7	6	3.0	163	147	65
HL45-C020#335T	C	20	3.3	85	15	125	0.7	6	2.0	212	191	85
HL45-A020#475T	A	20	4.7	85	15	125	0.9	6	4.0	132	119	53
HL45-B020#475T	B	20	4.7	85	15	125	0.9	6	3.0	163	147	65
HL45-C020#475T	C	20	4.7	85	15	125	0.9	6	1.8	224	201	89
HL45-A020#685T	A	20	6.8	85	15	125	1.4	6	2.5	167	151	67
HL45-B020#685T	B	20	6.8	85	15	125	1.4	6	2.0	200	180	80
HL45-C020#685T	C	20	6.8	85	15	125	1.4	6	1.5	245	220	98
HL45-A020#106T	A	20	10	85	15	125	2	8	3.0	153	137	61
HL45-B020#106T	B	20	10	85	15	125	2	6	2.5	179	161	72
HL45-C020#106T	C	20	10	85	15	125	2	6	1.5	245	220	98
HL45-B020#156T	B	20	15	85	15	125	3	6	2.5	179	161	72
HL45-C020#156T	C	20	15	85	15	125	3	6	1.5	245	220	98
HL45-D020#156T	D	20	15	85	15	125	3	6	1.0	339	305	136
HL45-B020#226T	B	20	22	85	15	125	4.4	7	2.5	179	161	72
HL45-C020#226T	C	20	22	85	15	125	4.4	6	1.5	245	220	98
HL45-D020#226T	D	20	22	85	15	125	4.4	6	0.8	379	341	152
HL45-C020#336T	C	20	33	85	15	125	6.6	6	1.5	245	220	98
HL45-D020#336T	D	20	33	85	15	125	6.6	6	1.0	339	305	136
HL45-C020#476T	C	20	47	85	15	125	9.4	8	1.5	245	220	98
HL45-D020#476T	D	20	47	85	15	125	9.4	6	0.8	379	341	152
HL45-E020#476T	E	20	47	85	15	125	9.4	6	0.6	456	411	183
HL45-C020#686T	C	20	68	85	15	125	14	8	1.5	245	220	98
HL45-D020#686T	D	20	68	85	15	125	14	6	0.8	379	341	152
HL45-E020#686T	E	20	68	85	15	125	14	6	0.7	423	380	169
HL45-D020#107T	D	20	100	85	15	125	20	8	1.0	339	305	136
HL45-E020#107T	E	20	100	85	15	125	20	6	0.7	423	380	169
HL45-V020#107T	V	20	100	85	15	125	20	8	0.5	548	493	219
HL45-D020#157T	D	20	150	85	15	125	30	10	0.8	379	341	152
HL45-E020#157T	E	20	150	85	15	125	30	8	0.6	456	411	183
HL45-V020#157T	V	20	150	85	15	125	30	8	0.4	612	551	245
HL45-E020#227T	E	20	220	85	15	125	44	12	0.6	456	411	183
HL45-V020#227T	V	20	220	85	15	125	44	12	0.5	548	493	219
HL45-E020#337T	E	20	330	85	15	125	66	12	0.8	395	356	158
HL45-V020#337T	V	20	330	85	15	125	66	12	0.8	433	390	173
HL45-A025#334T	A	25	0.33	85	17	125	0.5	4	10	84	75	33
HL45-A025#474T	A	25	0.47	85	17	125	0.5	4	10	84	75	33
HL45-A025#684T	A	25	0.68	85	17	125	0.5	4	8.0	94	84	37
HL45-B025#684T	B	25	0.68	85	17	125	0.5	4	4.0	141	127	57
HL45-A025#105T	A	25	1	85	17	125	0.5	4	6.0	108	97	43
HL45-B025#105T	B	25	1	85	17	125	0.5	4	4.0	141	127	57
HL45-A025#155T	A	25	1.5	85	17	125	0.5	4	5.0	118	106	47
HL45-B025#155T	B	25	1.5	85	17	125	0.5	6	3.5	151	136	60
HL45-A025#225T	A	25	2.2	85	17	125	0.6	6	5.0	118	106	47
HL45-B025#225T	B	25	2.2	85	17	125	0.6	6	4.0	141	127	57
HL45-C025#225T	C	25	2.2	85	17	125	0.6	6	1.5	245	220	98
HL45-A025#335T	A	25	3.3	85	17	125	0.8	6	3.0	153	137	61
HL45-B025#335T	B	25	3.3	85	17	125	0.8	6	3.5	151	136	60

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- Do not use a multimeter;
- Capacity and loss measurement conditions: 100Hz, U_r=2.2^{0.5}V, 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

Product code	Shell number	Rated voltage	Nominal capacity	Rated temperature	Class voltage	Class temperature	Maximum leakage current @ 25°C	Maximum loss @ 25 100Hz	ESR maximum @ 25 100KHz	Maximum allowable ripple current @100KHz IRMS(mA)		
		V	μ F	°C	V	°C	μA	%	Ω	25°C	85°C	125°C
HL45-C025#335T	C	25	3.3	85	17	125	0.8	6	2.0	212	191	85
HL45-A025#475T	A	25	4.7	85	17	125	1.2	6	3.0	153	137	61
HL45-B025#475T	B	25	4.7	85	17	125	1.2	6	2.5	179	161	72
HL45-C025#475T	C	25	4.7	85	17	125	1.2	6	1.8	224	201	89
HL45-B025#685T	B	25	6.8	85	17	125	1.7	6	2.0	200	180	80
HL45-C025#685T	C	25	6.8	85	17	125	1.7	6	1.5	245	220	98
HL45-D025#685T	D	25	6.8	85	17	125	1.7	6	1.2	310	279	124
HL45-B025#106T	B	25	10	85	17	125	2.5	6	2.5	179	161	72
HL45-C025#106T	C	25	10	85	17	125	2.5	6	1.5	245	220	98
HL45-D025#106T	D	25	10	85	17	125	2.5	6	1.0	339	305	136
HL45-B025#156T	B	25	15	85	17	125	3.8	8	2.5	179	161	72
HL45-C025#156T	C	25	15	85	17	125	3.8	6	1.5	245	220	98
HL45-D025#156T	D	25	15	85	17	125	3.8	6	1.0	339	305	136
HL45-C025#226T	C	25	22	85	17	125	5.5	6	1.5	245	220	98
HL45-D025#226T	D	25	22	85	17	125	5.5	6	0.8	379	341	152
HL45-D025#336T	D	25	33	85	17	125	8.3	6	1.0	339	305	136
HL45-E025#336T	E	25	33	85	17	125	8.3	6	0.8	395	356	158
HL45-D025#476T	D	25	47	85	17	125	12	6	1.0	339	305	136
HL45-E025#476T	E	25	47	85	17	125	12	6	0.6	456	411	183
HL45-D025#686T	D	25	68	85	17	125	17	6	0.8	379	341	152
HL45-E025#686T	E	25	68	85	17	125	17	6	0.7	423	380	169
HL45-V025#686T	V	25	68	85	17	125	17	6	0.5	548	493	219
HL45-E025#107T	E	25	100	85	17	125	25	10	0.7	423	380	169
HL45-V025#107T	V	25	100	85	17	125	25	8	0.5	548	493	219
HL45-E025#157T	E	25	150	85	17	125	38	10	0.6	456	411	183
HL45-V025#157T	V	25	150	85	17	125	38	10	0.4	612	551	245
HL45-A035#154T	A	35	0.15	85	23	125	0.5	4	15	68	61	27
HL45-A035#224T	A	35	0.22	85	23	125	0.5	4	15	68	61	27
HL45-A035#334T	A	35	0.33	85	23	125	0.5	4	10	84	75	33
HL45-A035#474T	A	35	0.47	85	23	125	0.5	4	10	84	75	33
HL45-B035#474T	B	35	0.47	85	23	125	0.5	4	8.0	100	90	40
HL45-A035#684T	A	35	0.68	85	23	125	0.5	4	6.0	108	97	43
HL45-B035#684T	B	35	0.68	85	23	125	0.5	4	5.0	126	114	51
HL45-A035#105T	A	35	1	85	23	125	0.5	4	6.0	108	97	43
HL45-B035#105T	B	35	1	85	23	125	0.5	4	3.5	151	136	60
HL45-A035#155T	A	35	1.5	85	23	125	0.5	6	6.0	108	97	43
HL45-B035#155T	B	35	1.5	85	23	125	0.5	6	3.5	151	136	60
HL45-C035#155T	C	35	1.5	85	23	125	0.5	6	1.5	245	220	98
HL45-A035#225T	A	35	2.2	85	23	125	0.8	6	5.0	118	106	47
HL45-B035#225T	B	35	2.2	85	23	125	0.8	6	3.5	151	136	60
HL45-C035#225T	C	35	2.2	85	23	125	0.8	6	1.5	245	220	98
HL45-B035#335T	B	35	3.3	85	23	125	1.2	6	3.5	151	136	60
HL45-C035#335T	C	35	3.3	85	23	125	1.2	6	2.0	212	191	85
HL45-B035#475T	B	35	4.7	85	23	125	1.6	6	3.0	163	147	65
HL45-C035#475T	C	35	4.7	85	23	125	1.6	6	2.0	212	191	85
HL45-D035#475T	D	35	4.7	85	23	125	1.6	6	1.2	310	279	124
HL45-B035#685T	B	35	6.8	85	23	125	2.4	6	1.8	211	190	84
HL45-C035#685T	C	35	6.8	85	23	125	2.4	6	1.5	245	220	98
HL45-D035#685T	D	35	6.8	85	23	125	2.4	6	1.2	310	279	124
HL45-C035#106T	C	35	10	85	23	125	3.5	6	1.5	245	220	98
HL45-D035#106T	D	35	10	85	23	125	3.5	6	1.0	339	305	136
HL45-E035#106T	E	35	10	85	23	125	3.5	6	0.8	395	356	158

- # is the replacement character to indicate the capacity tolerance, K means ±10%, M means ±20%;
- Do not use a multimeter;
- Capacity and loss measurement conditions: 100Hz, U_r=2.2_{0.5}V, 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

Product code	Shell number	Rated voltage	Nominal capacity	Rated temperature	Class voltage	Class temperature	Maximum leakage current @ 25°C	Maximum loss @ 25 100Hz	ESR maximum @ 25 100KHz	Maximum allowable ripple current @100KHz IRMS(mA)		
		V	μ F	°C	V	°C	μA	%	Ω	25°C	85°C	125°C
HL45-C035#156T	C	35	15	85	23	125	5.3	6	1.5	245	220	98
HL45-D035#156T	D	35	15	85	23	125	5.3	6	1.0	339	305	136
HL45-E035#156T	E	35	15	85	23	125	5.3	6	0.8	395	356	158
HL45-C035#226T	C	35	22	85	23	125	7.7	6	1.5	245	220	98
HL45-D035#226T	D	35	22	85	23	125	7.7	6	0.8	379	341	152
HL45-E035#226T	E	35	22	85	23	125	7.7	6	0.5	500	450	200
HL45-D035#336T	D	35	33	85	23	125	12	6	1.0	339	305	136
HL45-E035#336T	E	35	33	85	23	125	12	6	0.8	395	356	158
HL45-V035#336T	V	35	33	85	23	125	12	6	0.5	548	493	219
HL45-D035#476T	D	35	47	85	23	125	17	10	0.8	379	341	152
HL45-E035#476T	E	35	47	85	23	125	17	10	0.9	373	335	149
HL45-V035#476T	V	35	47	85	23	125	17	8	0.4	612	551	245
HL45-E035#686T	E	35	68	85	23	125	24	8	0.7	423	380	169
HL45-V035#686T	V	35	68	85	23	125	24	6	0.5	548	493	219
HL45-A050#154T	A	50	0.15	85	33	125	0.5	4	15	68	61	27
HL45-B050#154T	B	50	0.15	85	33	125	0.5	4	14	76	68	30
HL45-A050#224T	A	50	0.22	85	33	125	0.5	4	15	68	61	27
HL45-B050#224T	B	50	0.22	85	33	125	0.5	4	14	76	68	30
HL45-A050#334T	A	50	0.33	85	33	125	0.5	4	10	84	75	33
HL45-B050#334T	B	50	0.33	85	33	125	0.5	4	8.0	100	90	40
HL45-B050#474T	B	50	0.47	85	33	125	0.5	4	6.0	115	104	46
HL45-C050#474T	C	50	0.47	85	33	125	0.5	4	3.0	173	156	69
HL45-A050#684T	A	50	0.68	85	33	125	0.5	4	6.0	108	97	43
HL45-B050#684T	B	50	0.68	85	33	125	0.5	4	4.0	141	127	57
HL45-C050#684T	C	50	0.68	85	33	125	0.5	4	3.0	173	156	69
HL45-A050#105T	A	50	1	85	33	125	0.5	4	6.0	108	97	43
HL45-B050#105T	B	50	1	85	33	125	0.5	6	3.5	151	136	60
HL45-C050#105T	C	50	1	85	33	125	0.5	4	2.0	212	191	85
HL45-B050#155T	B	50	1.5	85	33	125	0.8	8	6.0	115	104	46
HL45-C050#155T	C	50	1.5	85	33	125	0.8	6	4.5	141	127	57
HL45-D050#155T	D	50	1.5	85	33	125	0.8	6	1.2	310	279	124
HL45-B050#225T	B	50	2.2	85	33	125	1.1	8	4.0	141	127	57
HL45-C050#225T	C	50	2.2	85	33	125	1.1	6	3.0	173	156	69
HL45-D050#225T	D	50	2.2	85	33	125	1.1	6	2.5	214	193	86
HL45-C050#335T	C	50	3.3	85	33	125	1.7	6	2.0	212	191	85
HL45-D050#335T	D	50	3.3	85	33	125	1.7	6	1.5	277	249	111
HL45-C050#475T	C	50	4.7	85	33	125	2.4	4	1.8	224	201	89
HL45-D050#475T	D	50	4.7	85	33	125	2.4	6	1.2	310	279	124
HL45-C050#685T	C	50	6.8	85	33	125	3.4	6	1.5	245	220	98
HL45-D050#685T	D	50	6.8	85	33	125	3.4	6	1.2	310	279	124
HL45-E050#685T	E	50	6.8	85	33	125	3.4	6	1.0	354	318	141
HL45-D050#106T	D	50	10	85	33	125	5	6	1.0	339	305	136
HL45-E050#106T	E	50	10	85	33	125	5	6	0.8	395	356	158
HL45-V050#106T	V	50	10	85	33	125	5	6	0.7	463	417	185
HL45-D050#156T	D	50	15	85	33	125	7.5	6	1.0	339	305	136
HL45-E050#156T	E	50	15	85	33	125	7.5	6	0.8	395	356	158
HL45-V050#156T	V	50	15	85	33	125	7.5	6	0.7	463	417	185
HL45-E050#226T	E	50	22	85	33	125	11	8	0.5	500	450	200
HL45-V050#226T	V	50	22	85	33	125	11	8	0.4	612	551	245

- # is the replacement character to indicate the capacity tolerance, K means ±10%, M means ±20%;
- Do not use a multimeter;
- Capacity and loss measurement conditions: 100Hz, U_{DC}=2.2₋₁V, U_{AC}~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.