

PEH 526

- Designed for automotive applications
- Temperature rating 125°C
- Resistance to vibrations
- Low ESR
- High ripple capability

APPLICATION

PEH526 is a high performance electrolytic capacitor designed for automotive applications with high vibrations and high ambient temperatures.

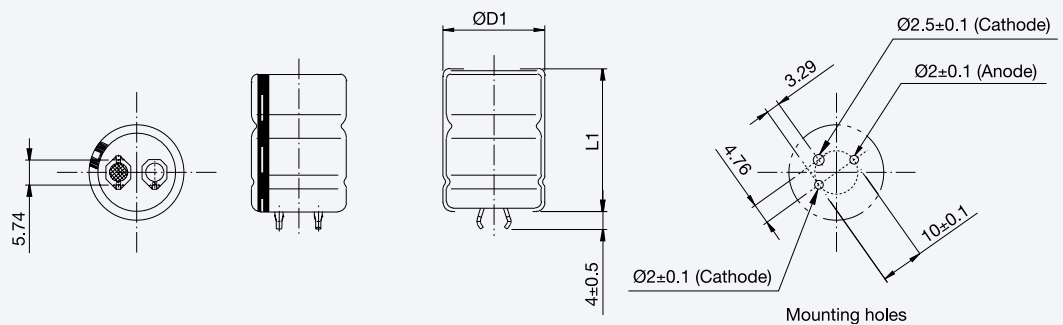
BASIC DESIGN

PEH 526 is an electrolytic capacitor with outstanding electrical performance. It is polarized with the negative pole connected to the case. The outer case has a plastic cover. The low ESR is a result of a low resistive

electrolyte/paper system. Together with the TDC thermal concept, this gives the PEH526 very high ripple current capability. The capacitor is suitable for both mobile and aircraft applications, with operation up to 125°C.

SPECIFICATION

Standards	IEC 384-4 Long Life Grade 40/125/56 In accordance with CECC 30 301-809
Capacitance range	820-6800 μF
Capacitance tolerance	-20 to +20%
Rated voltage	25-63 VDC
Temperature range	-40 to +125°C
Leakage current, I_{RL} (μA)	$0.01 (\mu\text{A}) \times C_R (\mu\text{F}) \times U_R (\text{V})$
Operational life time	4000h at 125°C, 20 000h at 105°C
Shelf life	0V +105°C 5000 h, +40°C 10 years
Diameter range	22 - 30 mm
Resistance to vibrations	10 - 2000 Hz, 1.5 mm displacement amplitude or max. 20 g 3x2 hours. The capacitor shall be clamped by their body.
Life test	4000h, 125°C



Dimensions table PEH 526 (mm)

D x L	Case code	D1 ± 0.5	L1 ± 1.0	Weight approx (g)
22 x 25	AB	22	26	12
22 x 30	AC	22	31	14
25 x 25	BB	25	26	19
25 x 35	BD	25	36	24
30 x 25	CB	30	26	24
30 x 35	CD	30	36	34

ARTICLE TABLE PEH 526

C_R	D x L	I_{RAC}^* 125°C 100 Hz	I_{RAC}^* 85°C ≥5 kHz	I_{RAC}^* 105°C ≥5 kHz	I_{RAC}^* 125°C ≥5 kHz	ESR* 20°C 100 Hz	ESR* 20°C 100 kHz	ESR* 125°C ≥5 kHz	Article code	Pin configuration
μF	mm	A	A	A	A	mΩ	mΩ	mΩ		
25 VDC (U_R)										
2700	22 x 25	2.0	9.7	7.4	3.7	54	30	14	PEH526HAB4270M3	
3900	22 x 30	2.5	11.9	9.1	4.5	38	22	10	PEH526HAC4390M3	
3900	25 x 25	2.3	10.1	7.7	3.8	41	24	14	PEH526HBB4390M3	
5600	30 x 25	2.7	10.2	7.8	3.8	33	22	17	PEH526HCB4560M3	
6800	25 x 35	3.4	14.4	11.0	5.5	24	14	9	PEH526HBD4680M3	
40 VDC (U_R)										
1200	22 x 25	1.5	9.4	7.2	3.6	77	28	15	PEH526KAB4120M3	
1500	22 x 30	1.8	11.5	8.8	4.4	59	20	11	PEH526KAC4150M3	
1500	25 x 25	1.7	9.8	7.5	3.7	62	23	16	PEH526KBB4150M3	
1800	22 x 25	1.7	9.6	7.3	3.7	62	28	14	PEH526KAB4180M3	
1800	25 x 35	2.5	14.1	10.7	5.3	36	14	9	PEH526KBD4180M3	
2200	22 x 30	2.0	11.7	8.9	4.5	49	22	11	PEH526KAC4220M3	
2200	25 x 25	1.9	10.0	7.6	3.8	52	24	15	PEH526KBB4220M3	
2200	30 x 25	2.1	9.8	7.4	3.7	48	22	19	PEH526KCB4220M3	
2700	25 x 35	2.5	14.1	10.7	5.3	36	14	9	PEH526KBD4270M3	
3300	30 x 25	2.4	10.0	7.6	3.8	40	22	18	PEH526KCB4330M3	
3900	25 x 35	2.8	14.3	10.9	5.4	30	14	9	PEH526KBD4390M3	
63 VDC (U_R)										
820	22 x 25	1.2	8.0	6.1	3.0	100	36	20	PEH526MAB3820M3	
1200	22 x 30	1.6	9.9	7.6	3.8	72	25	15	PEH526MAC4120M3	
1200	25 x 25	1.5	8.8	6.7	3.3	75	28	19	PEH526MBB4120M3	
1800	30 x 25	1.9	9.2	7.1	3.5	56	24	21	PEH526MCB4180M3	
2200	25 x 35	2.3	12.6	9.7	4.8	42	16	11	PEH526MBD4220M3	

* Maximum specified values

OPERATIONAL LIFE AND RIPPLE CURRENT

Operational life (L_{op}), at ambient temperature T_a and ripple current I_{AC} .

Example:

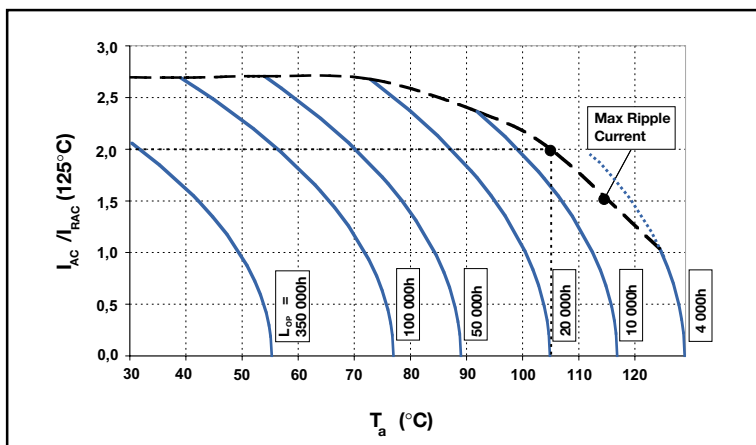
Article: PEH526KBB4220M3
 Ambient temperature (T_a): 105°C
 Ripple current, at 10kHz (I_{AC}): 7.6 A

$I_{RAC}(125°C, ≥5kHz) = 3.8 A$ (from data table)
 $\Rightarrow I_{AC} / I_{RAC}(125°C) = 2.0$

Operational life: Interpolation between the L_{op} -curves $\Rightarrow L_{op} \approx 8$ kh (blue curves)

When the capacitor load is at 100Hz, use $I_{AC} / I_{RAC}(125°C, 100Hz)$ as input value to the diagram (see data table). At other frequencies use $I_{AC} / I_{RAC}(125°C, ≥ 5kHz) \times 1/Corr =$

Frequency correction factor, for ripple current (Corr):



	FREQUENCY			
	300 Hz	1 kHz	5 kHz	100 kHz
Correction factor (Corr) (Typical value)	0.70	0.89	1.00	1.03

LEAKAGE CURRENT

Rated leakage current, I_{RL} (μ A)

Rated voltage, U_R (V)

Rated capacitance, C_R (μ F)

$I_{RL} = 0.01 \times C_R (\mu\text{F}) \times U_R (\text{V})$

CUSTOMER DESIGN

On request PEH526 can be designed in other capacitance values.

ORDERING INFORMATION

For further ordering information please see page 8.

Pos 1–20

P	E	H	5	2	6	K	A	C	4	1	5	0	M	3*						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

Pos. 14: Capacitance tolerance M = -20 to +20%

* = three pin version

CASE CODE	AB	AC	BB	BD	CB	CD
Weight approx (g)	12	14	19	24	24	34
Standard box quantity	200	100	200	100	200	100

THERMAL RESISTANCE FOR DIFFERENT CASE SIZES, AS A FUNCTION OF CASE AIR SPEED V

At ambient temperature $T_a = 40^\circ\text{C}$

Case		Air speed v											
		v=0,5m/s		v=1,0m/s		v=2,0m/s		v=3,0m/s		v=4,0m/s		v=5,0m/s	
D x L	mm	R_{thca}	R_{th}	R_{thca}	R_{th}	R_{thca}	R_{th}	R_{thca}	R_{th}	R_{thca}	R_{th}	R_{thca}	R_{th}
		$^\circ\text{C/W}$		$^\circ\text{C/W}$		$^\circ\text{C/W}$		$^\circ\text{C/W}$		$^\circ\text{C/W}$		$^\circ\text{C/W}$	
22 x 25	AB	24.3	25.1	19.1	20.0	14.8	15.7	13.2	14.1	11.4	12.3	10.3	11.1
22 x 30	AC	21.3	22.5	16.8	18.0	13.2	14.4	11.7	12.9	10.2	11.4	9.2	10.4
22 x 35	AD	19.1	20.5	15.1	16.6	11.9	13.4	10.7	12.1	9.4	10.8	8.5	9.9
22 x 40	AE	17.4	19.0	13.9	15.5	11.0	12.7	9.9	11.5	8.7	10.4	7.9	9.5
22 x 45	AF	16.1	17.6	12.9	14.4	10.4	11.8	9.3	10.8	8.3	9.7	7.5	9.0
22 x 50	AG	15.1	16.8	12.2	14.0	9.8	11.6	8.9	10.6	7.9	9.7	7.2	9.0
25 x 25	BB	21.9	22.8	17.2	18.1	13.4	14.3	11.8	12.6	10.2	11.1	9.2	10.0
25 x 30	BC	19.3	20.2	15.3	16.1	12.0	12.8	10.5	11.3	9.2	10.0	8.2	9.1
25 x 35	BD	17.2	18.2	13.7	14.7	10.8	11.8	9.6	10.6	8.4	9.4	7.6	8.6
25 x 40	BE	15.8	16.9	12.6	13.7	10.0	11.2	8.9	10.0	7.8	8.9	7.1	8.2
25 x 45	BF	14.7	16.2	11.8	13.3	9.4	10.9	8.4	9.9	7.4	8.9	6.8	8.3
25 x 50	BG	13.7	15.2	11.1	12.6	8.9	10.5	8.0	9.5	7.1	8.6	6.5	8.0
30 x 25	CB	18.9	19.5	14.9	15.5	11.7	12.3	10.0	10.6	8.7	9.3	7.8	8.4
30 x 30	CC	16.4	17.1	13.1	13.8	10.2	10.9	8.8	9.5	7.7	8.4	6.9	7.6
30 x 35	CD	14.8	15.6	11.8	12.6	9.3	10.1	8.0	8.9	7.0	7.9	6.3	7.2
30 x 40	CE	13.5	14.3	10.8	11.6	8.6	9.4	7.4	8.2	6.5	7.3	5.9	6.7
30 x 45	CF	12.5	13.3	10.0	10.9	8.0	8.9	7.0	7.8	6.2	7.0	5.6	6.5
30 x 50	CG	11.9	12.9	9.7	10.7	7.8	8.8	6.8	7.8	6.1	7.1	5.5	6.6
35 x 25	DB	16.5	17.0	13.1	13.6	10.5	11.0	8.6	9.1	7.5	8.0	6.7	7.2
35 x 30	DC	14.3	14.7	11.4	11.8	9.2	9.6	7.6	8.0	6.6	7.0	5.9	6.3
35 x 35	DD	12.9	13.4	10.3	10.8	8.3	8.8	6.9	7.4	6.0	6.5	5.4	5.9
35 x 40	DE	11.8	12.5	9.5	10.1	7.7	8.3	6.4	7.1	5.6	6.3	5.1	5.7
35 x 45	DF	10.9	11.6	8.8	9.5	7.1	7.9	6.0	6.7	5.3	6.0	4.8	5.5
35 x 50	DG	10.5	11.3	8.5	9.3	7.0	7.8	5.9	6.7	5.3	6.0	4.8	5.6
35 x 55	DH	9.6	10.3	7.8	8.5	6.4	7.1	5.4	6.1	4.8	5.5	4.4	5.1
35 x 60	DI	9.1	10.2	7.4	8.5	6.2	7.2	5.2	6.3	4.7	5.7	4.3	5.3
40 x 60	EI	8.2	9.0	6.7	7.6	5.5	6.3	4.6	5.5	4.1	5.0	3.8	4.7
40 x 70	EK	7.5	8.5	6.2	7.2	5.1	6.1	4.4	5.4	3.9	4.9	3.6	4.6
40 x 80	EM	7.0	8.3	5.9	7.2	4.9	6.2	4.2	5.5	3.8	5.1	3.5	4.8
40 x 100	EQ	6.4	8.2	5.4	7.2	4.6	6.3	4.1	5.8	3.7	5.4	3.4	5.2

 $(R_{thca}$ = Thermal resistance between case and ambient)