Mechanical data

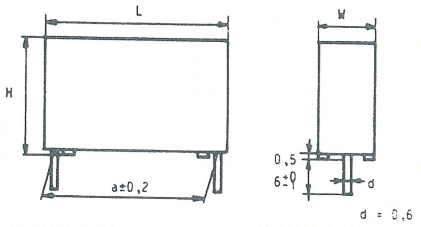
Dimensions and packaging

Dimension Code	L_{max} (mm)	W_{max} (mm)	H_{max} (mm)	a (mm)	Weight (g)	Qty/package (pcs)	Qty/reel[1] (pcs).
K	10.5	4.0	8.0	7.6	0.5	2000	1700
A2	13.0	4.5	8.0	10.2	0.7	2000	800
A1	13.0	4.5	10.5	10.2	0.8	2000	800

[1] Package on tape

Other lead lenghs can be offered on request

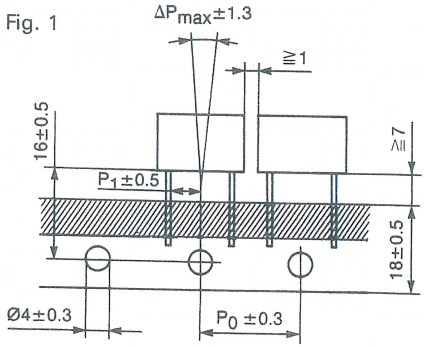
Dimensions in mm



Radial taping

The capacitors are placed on the tape according to fig. 1. The taped capacitors are winded on a reel.

Fig. 1



Acc. to IEC 286

	For lead space 7.6 mm [mm]	10.2 mm [mm]
P_o	12.7	25.4
P_1	3.8	5

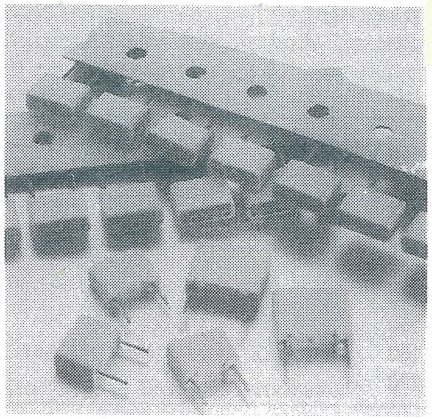
Ordering Information

Example:

1. PHE 353, 33 nF, 400 VDC/200 VAC packed in boxes Article code number:
   PHE 353 KA 5330 M
2. PHE 353, 22 nF, 250 VDC/160 VAC packed on tape Article code number:
   PHE 353 HK 5220 M R17 TO.

PHE 353

- CECC-approval 30401-29
- Low dissipation factor
- Long life
- Close mechanical tolerances.



Applications

For general applications in eletronic equipment, eg for coupling and decoupling applications.

Basic data

Rated voltage (U_R)	100 VDC 63 VAC (50 Hz)	250 VDC 160 VAC (50 Hz)	400 VDC 200 VAC (50 Hz)
Rated capacitance (C_R)	22 nF–220 nF	6,8 nF–100 nF	1 nF–33 nF
Capacitance tolerance ($\Delta C/C_R$)	±20% for C_R <100 nF ±10% for C_R ≥100 nF		
Climatic category	55/100/56	IEC	
Rated temperature	+85°C		
Complies with IEC 384-2 Grade 1			

Basic design

PHE 353 has metallized polyethylene terphtalate (PEPT) as the dielectric. The capacitor is encapsulated in flame-retardant material of class UL 94/V-O.

The capacitor is resistant to all commonly used solvents and rinsing liquids. The mechanical design will assure narrow tolerances (suitable for automatic Insertion).

Article table

Rated Capacitance (C_R) (nF)	Dimension Code	Article code number[1]
100 VDC/63 VAC		
22	K	PHE 353DK5220M
33	K	PHE 353DK5330M
47	K	PHE 353DK5470M
68	K	PHE 353DK5680M
100	K	PHE 353DK6100K
150	A1	PHE 353DA6150K
220	A1	PHE 353DA6220K
250 VDC/160 VAC		
6.8	K	PHE 353HK4680M
10	K	PHE 353HK5100M
15	K	PHE 353HK5150M
22	K	PHE 353HK5220M
33	K	PHE 353HK5330M
47	A2	PHE 353HA5470M
68	A1	PHE 353HA5680M
100	A1	PHE 353HA6100K
400 VDC/200 VAC		
1	K	PHE 353KK4100M
1.5	K	PHE 353KK4150M
2.2	K	PHE 353KK4220M
3.3	K	PHE 353KK4330M
4.7	K	PHE 353KK4470M
6.8	K	PHE 353KK4680M
10	A2	PHE 353KA5100M
15	A2	PHE 353KA5150M
22	A1	PHE 353KA5220M
33	A1	PHE 353KA5330M

[1] When taped add "R17TO" to the article code number
Other values within the range can be offered on request.

Technical data

See also "General Technical Information"

Rated voltage U_R
According to article table

Category voltage, Uc
The category voltage is 0.75 × U_R at 100°C.

The max continous voltage U for the temperature between +85°C to +100°C can be calculated with the following formula
$U = U_R [1-0.0167 \times (T-85)]$, where U_R is rated voltage and T the ambient temperature in °C.

Rated capacitance, C_R
According to article table

Capacitance tolerance DC/C
±20% for C_R <0,1 µF, (code M)
±10% for $C_R \geq$ 0,1 µF, (code K)

Tangent of the loss angle (tan δ, dissipation factor)
Tan δ (100 kHz) ≤ 0.03
Tan δ (1 kHz) ≤ 0.008

Pulse durability
The capacitor can withstand an unlimited number of pulses with a maximum pulse steepness according to given values in the table.

Pulse rise time for different sizes of capacitor lead space, a

VDC	Max dU/dt (V/µs) a=7.6 mm	a=10.2 mm[1]
100	12	11
250	21	19
400	30	27

[1] a is leadspace, see "Mechanical data".

Inductance
Measured 1.5 mm fron the body. Typically 10 nH. Increases with 1.5 nH/mm wire length.

Insulation
The insulation resistance measured at 100 VDC, 23°C and after 60 seconds.

Between terminals ≥ 30,000 MΩ

Between terminals and case ≥ 30.000 MΩ

Quality and test datas

See "General Technical Information"

Climatic sequency
Requirements after test:
DC/C ≤0.005 at 1 kHz
Δ tan δ ≤0.005 at 10 kHz
Insulation resistance ≤30 000 MΩ

Endurance test DC
Requirements after test
Δ C/C_R ≤3%
Δ tan δ ≤0.003 10 kHz
Insulation resistance ≥30 000 MHz

Endurance test AC
Same as for DC