

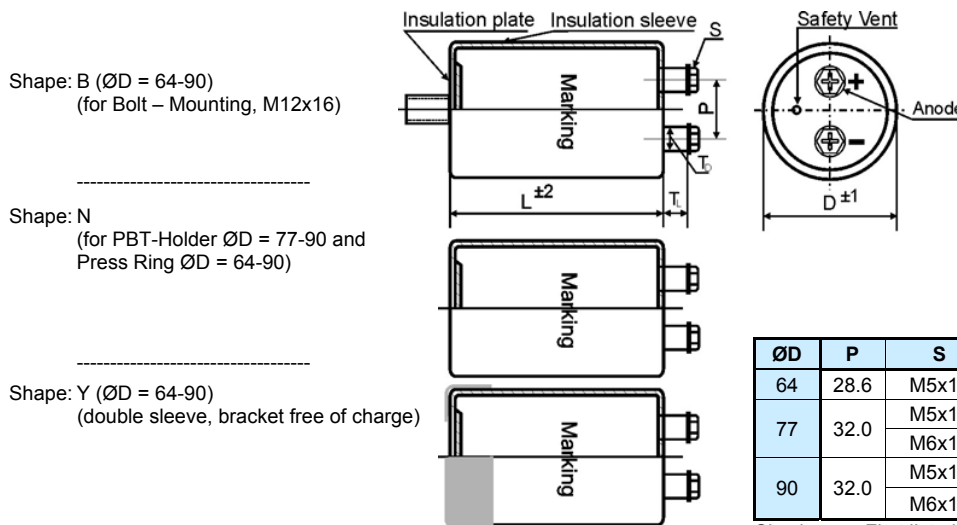
► **Specifications /**

Items	Characteristics
Temperature range	-25°C ~ + 85°C
Rated voltage V_r	600 VDC *)
Surge voltage	Repetitive max. 30 sec per 6 Minutes
Leakage current max. I_L (20°C, 5 min)	$0.01 \cdot C_r \cdot V_r$ [μ A] or 3 mA, which is smaller.
Capacitance tolerance	+/- 20%
Useful life	6000 h at 85°C
Field failure rate	0.5 FIT = $0.5 \cdot 10^{-9}$ Failures/hour
Failure rate	Less than 0.1% within the useful life

*) 650 VDC ~ 700 VDC under development



► **Outline Drawing /**



Size in mm. First listed terminal is standard.

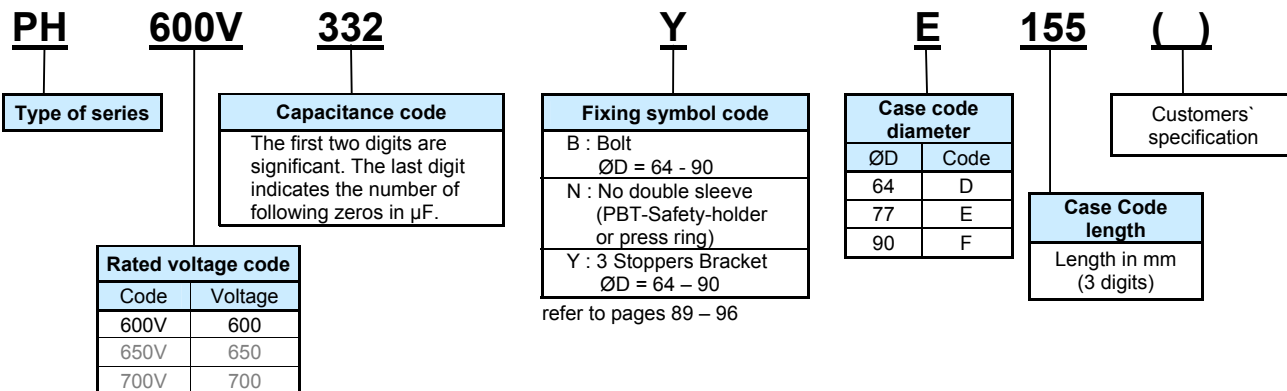
► **Ripple Current Multiplier /**

Frequency [Hz]	50/60	120	300	1k	≥ 10k
multiplier	0.70	1.00	1.18	1.34	1.45

Forced cooling [m/sec]	$v < 1.0$	$v \geq 1.0$
multiplier	1.0	1.1

► **Product Code /**

Example: 3300µF 600V D=77mm L=155mm with Y-Bracket



PH Series

Screw-Terminal

6 000 h / 85°C

Rated Voltage Code (Surge Voltage) V_r [V DC]	Capacitance C_r [μ F]	Ripple Current at 40°C/120Hz [A RMS]	Ripple Current at 85°C/120Hz I_r [A RMS]	ESR (typ) at 20°C/100Hz [m Ω]	Zmax at 20°C/10kHz [m Ω]	ESL (typ) [nH]	DxL [mm]	Product Code
600 600V (650)	1 200	16.2	7.7	121	125	18	64x96	PH600V122□D096
	1 300	19.3	9.2	112	115	18	64x103	PH600V132□D103
	1 500	19.5	9.3	112	115	18	64x115	PH600V152□D115
	1 800	21.2	10.1	97	100	20	77x96	PH600V182□E096
	2 200	25.2	12.0	81	83	20	77x115	PH600V222□E115
	2 700	25.4	12.1	66	67	20	77x130	PH600V272□E130
	3 000	32.8	15.6	49	50	20	77x155	PH600V302□E155
	3 300	34.4	16.4	44	45	20	77x155	PH600V332□E155
		34.4	16.4	44	45	20	90x131	PH600V332□F131
		35.9	17.1	44	45	20	77x171	PH600V332□E171
	3 900	41.4	19.7	37	40	20	77x195	PH600V392□E195
	4 700	44.1	21.0	31	32	20	90x157	PH600V472□F157

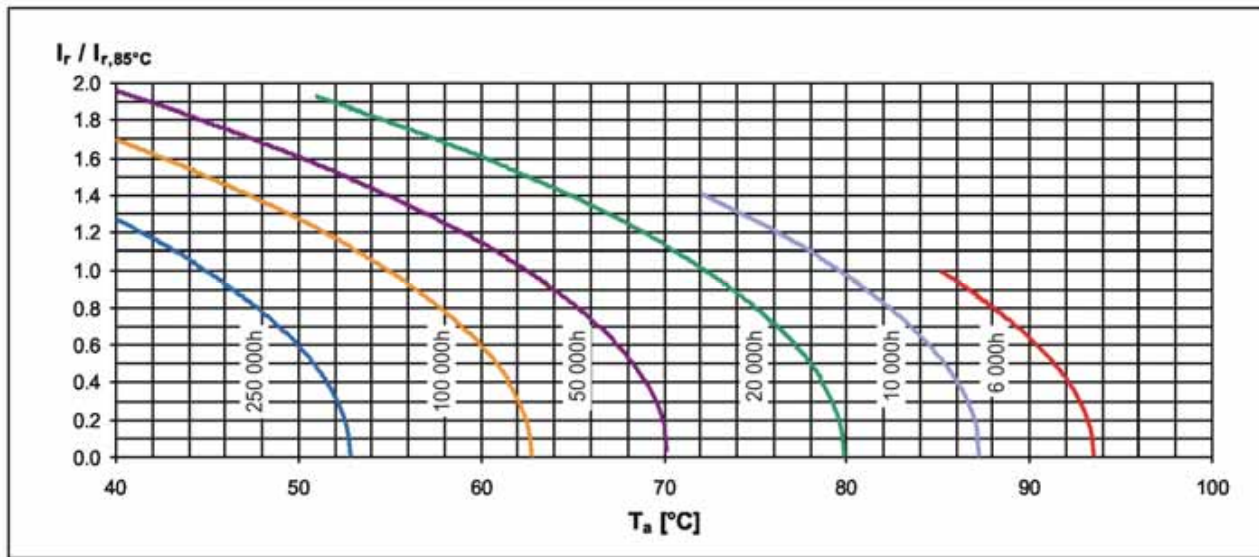
Life Time Table /

PH	Useful life as function of ambient temperature and ripple current												
	I_r at 85°C	x 1.0	x 1.1	x 1.2	x 1.3	x 1.4	x 1.5	x 1.6	x 1.7	x 1.8	x 1.9	x 2.0	x 2.1
Ta = 40°C	250	250	250	237	195	158	126	99	77	59	44	33	
Ta = 45°C	247	212	180	150	123	100	80	63	48	37	28		
Ta = 50°C	156	134	113	95	78	63	50	39	30	23			
Ta = 55°C	99	85	72	60	49	40	32	25	19				
Ta = 60°C	62	53	45	38	31	25	20	15					
Ta = 65°C	39	34	28	24	19	16							
Ta = 70°C	25	21	18	15									
Ta = 75°C	15	13	11										
Ta = 80°C	10	8											
Ta = 85°C	6												

khrs Max. value limited to 250 000 hours.

► Life Time Graph /

Useful life depending on ambient temperature T_a and ripple current operating conditions I_r versus rated ripple current at the upper category temperature $I_{r,85°C,120Hz}$



► Life Time Tests and Requirements /

Life time test	Reference	Test procedure	Life time criteria
Endurance test	JIS-C-5101-4 JIS-C-5102 IEC 60384-4	$T_a = 85°C$; V_r, I_r applied 4000 hours	$\Delta C/C < 15\%$ $\text{Tan}\delta < 175\%$ (of initial value) $I_L = \text{spec. value}$
Useful life	JIS-C-5104-4 IEC 60384-4	$T_a = 85°C$; V_r, I_r applied 6000 hours	$\Delta C/C < 20\%$ $\text{Tan}\delta < 200\%$ (of initial value) $I_L = \text{spec. value}$