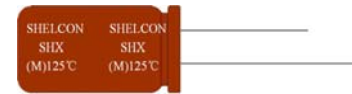
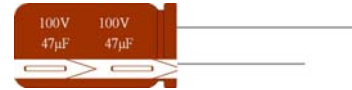


SHX SERIES

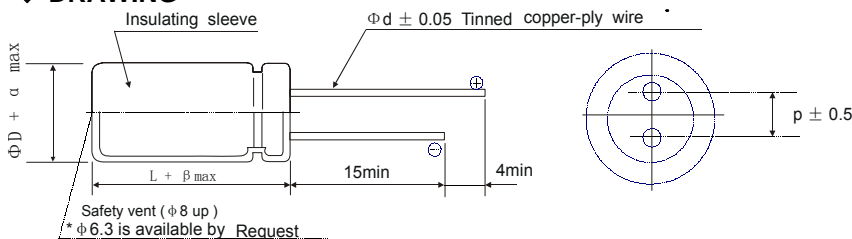
- High temperature range, for +125 °C use
- Highly dependable reliability withstanding load life of 2,000 hours at +125 °C
- Suited for automobile electronics where heavy duty services are indispensable.



SPECIFICATIONS

Item	Characteristics											
Category Temperature Range	- 40 ~ +125 °C (10~250V), -25~+125 °C (350~450V)											
Voltage Range	10 ~450V											
Nominal Cap. Range	1 ~ 4700 µF											
Capacitance Tolerance	- 20% ~ + 20% (at 20 °C, 120Hz)											
Leakage Current	Rated Voltage	10~100	160~450									
	Leakage Current	After 1 minutes' application of rated voltage, leakage current is not more than 0.03CV or 4(µA), whichever is greater.										
Dissipation Factor (tanδ) (at 120Hz, +20 °C)	Rated Voltage (V)	10	16	25	35	50	63	80	100	160~250	250~450	
	tanδ		0.2	0.16	0.14	0.12	0.10	0.10	0.08	0.08	0.20	0.24
Low Temp. Impedance Stability at 120Hz	W. V.		10	16	25	35	50	63	80	100	160~250V	350~450V
	Z(-25 °C)/Z(+20 °C)		2	2	2	2	2	2	2	2	3	6
	Z(-40 °C)/Z(+20 °C)		6	4	4	4	4	4	4	4	6	-
High Temp. Load Test	After 2000 hours application of the DC rated voltage at +125 °C, the capacitor shall meet the following limits.											
	Capacitance Change	... ≤ ±30% of the initial measured value(10~100V) ... ≤ ±30% of the initial measured value(160~450V)										
	tanδ	... ≤ 300% of the initial specified value(10~100V) ... ≤ 200% of the initial specified value(160~450V)										
	DC Leakage Current	... ≤ the initial specified value										
High Temp. Non-Load Test	After leaving capacitors under no load at 125 °C for 1000 hours, they meet the requirements for edurance characteristics listed above.											

DRAWING



Unit: (mm)

	8	10	13	16	18
ΦD	8	10	13	16	18
β	0.8	0.8	1.0	1.0	1.0
P	3.5	5.0	5.0	7.5	7.5
Φd	0.6	0.6	0.6	0.8	0.8

MULTIPLIER FOR RIPPLE CURRENT

(1) Frequency Coefficient

Cap.(µF)	Freq.(Hz)				
	120	300	1K	10K	100K
1000 > CV	0.50	0.64	0.83	0.90	0.30
1000 ≤ CV	0.67	0.79	0.91	0.95	1.00

(2) Temperature Coefficient

Ambient Temperature (°C)	60	70	85	105	125
Coefficient	2.40	2.10	1.78	1.65	1.00

SHX Series

Standard Ratings

WV(Vdc) Cap. (μF) / Item Code		10			16			25			35			50		
		Case Size Φ DxL (mm)	Impedance (Ω) max.	Rated Ripple (mArms)	Case Size Φ DxL (mm)	Impedance (Ω) max.	Rated Ripple (mArms)	Case Size Φ DxL (mm)	Impedance (Ω) max.	Rated Ripple (mArms)	Case Size Φ DxL (mm)	Impedance (Ω) max.	Rated Ripple (mArms)	Case Size Φ DxL (mm)	Impedance (Ω) max.	Rated Ripple (mArms)
1	10															
2.2	2R2															
3.3	3R3															
4.7	4R7															
10	100															
22	220															
33	330															
47	470															
100	101				8X11.5	0.65	340	8X11.5	0.65	500	10X12.5	0.580	620	10X12.5	0.58	555
220	221	8X11.5	0.65	340	10X12.5	0.58	620	10X12.5	0.58	680	10X16	0.52	790	10X20	0.48	930
330	331	10X12.5	0.58	620	10X12.5	0.58	680	10X16	0.52	945	10X20	0.48	950	13X20	0.360	1330
470	471	10X12.5	0.65	680	10X16	0.52	945	10X20	0.48	1100	13X20	0.36	1330	13X25	0.31	1650
1000	102	10X20	0.48	1100	13X20	0.36	1490	13X25	0.31	1750	16X25	0.28	2010	16X31.5	0.28	2430
2200	222	13X25	0.31	1750	16X25	0.28	2300	16X31.5	0.280	2710	18X35.5	0.28	2790			
3300	332	16X25	0.28	2300	16X31.5	0.280	2710	18X31.5	0.28	3310						
4700	472	16X31.5	0.280	2710	18X31.5	0.28	3270									

WV(Vdc) Cap. (μF) / Item Code		63			80			100		
		Case Size Φ DxL (mm)	Impedance (Ω) max.	Rated Ripple (mArms)	Case Size Φ DxL (mm)	Impedance (Ω) max.	Rated Ripple (mArms)	Case Size Φ DxL (mm)	Impedance (Ω) max.	Rated Ripple (mArms)
4.7	4R7							8X11.5	2.00	130
10	100							8X11.5	1.50	150
22	220	8X11.5	2.00	130	8X11.5	1.50	150	10X12.5	0.80	480
33	330	8X11.5	1.50	150	10X12.5	0.80	480	10X12.5	0.80	480
47	470	10X12.5	0.8	530	10X12.5	0.80	480	10X16	0.8	630
100	101	10X16	0.8	690	10X20	0.8	790	13X20	0.65	990
220	221	13X20	0.65	1050	13X25	0.65	1240	16X25	0.65	1500
330	331	13X25	0.65	1290	13X31.5	0.65	1390	16X31.5	0.65	1790
470	471	13X31.5	0.65	1460	16X25	0.65	1500			

→ Rated Ripple(mArms) at 125°C 100KHz
 → Impedance(Ω max.) at 20°C 100KHz

SHX SERIES

Standard Ratings

Cap. (μ F)	Item Code	160		200		250		350(2V)		400(2G)		450(2W)	
		Case Size Φ DxL (mm)	Rated Ripple (mArms)	Case Size Φ DxL (mm)	Rated Ripple (mArms)	Case Size Φ DxL (mm)	Rated Ripple (mArms)	Case Size Φ DxL (mm)	Rated Ripple (mArms)	Case Size Φ DxL (mm)	Rated Ripple (mArms)	Case Size Φ DxL (mm)	Rated Ripple (mArms)
4.7	4R7							10X20	53	10X20	53	10X25	58
10	100			10X20	78	10X20	78	10X25	85	10X25	86	13X20	86
22	220	10X20	115	10X25	126	10X25	128	13X25	139	13X31.5	142	16X25	154
33	330	10X25	154	13X20	157	13X25	171	16X25	189	16X25	189	16X31.5	203
47	470	13X20	187	13X25	204	16X25	225	16X31.5	243	16X31.5	243		
68	680	13X25	245	16X20	250	16X31.5	292						
100	101	16X25	329	16X25	329								
150	151	16X31.5	434										

