knowles
PRECISION DEVICES

Capacitor Assemblies SV2220

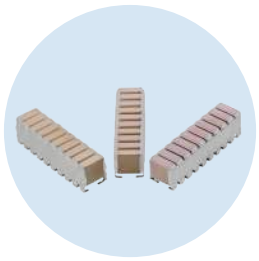
The SV capacitor assemblies are a vertical stacking of ceramic capacitors, offering far superior performance than either aluminum or tantalum electrolytic capacitors. They can be made with up to 10 same size chips with various lead configurations to safeguard against thermal and mechanical stresses and are 100% tested for dielectric withstanding voltage, insulation resistance, capacitance, and dissipation factor.

They are ideally suited for the input and output stages of switch-mode power supplies and DC-DC converters, the SV capacitor assemblies offer several key benefits:

- Reduces the overall circuit board footprint
- High capacitance to volume ratio
- Low ESR and low ESL
- Capability to handle high ripple currents at high frequencies

ELECTRICAL SPECIFICATIONS

DIELECTRIC WITHSTANDING VOLTAGE:	250% of rated voltage for 5 seconds
INSULATION RESISTANCE AT 25°C:	500 mega-ohm/micro-farad minimum
INSULATION RESISTANCE AT 125°C:	50 mega-ohm/micro-farad minimum
CAPACITANCE AT 25°C:	1.0±0.2 VRMS at 120 Hz
DISSIPATION FACTOR AT 25°C	5% maximum at 1.0±0.2 VRMS at 120 Hz
LIFE TEST:	150% of rated voltage at 125°C for 1000 hours
MOISTURE RESISTANCE:	10 cycles without voltage. MIL-STD-202 M106
THERMAL SHOCK:	MIL-STD-202 M107, test condition A -55°C to +125°C
IMMERSION CYCLING:	MIL-STD-20 M104, condition B
RESISTANCE TO SOLDER HEAT:	MIL-STD-202, M210, condition B 20 seconds at 260°C



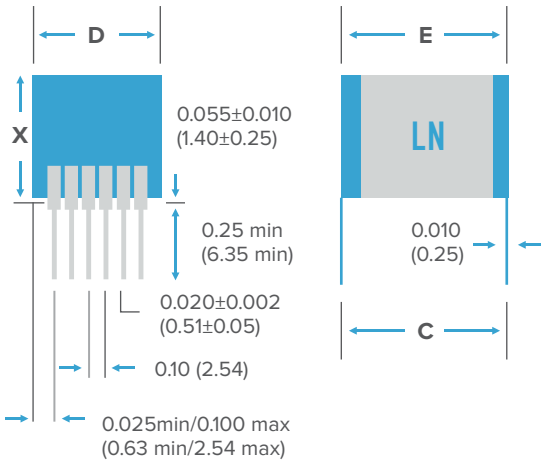
Applications	• Input and output stages of switch mode power supplies and DC-DC converters
Benefits	• Reduces the overall circuit board footprint • Low ESR and low ESL • High capacitance to volume ratio • Superior performance over aluminum or tantalum capacitors

		Capacitance (µF)						
		14	**22**	**27**	**47**	**68**	**100**	**220**
Voltage	**25V**					-3	-5	-10
	50V			-3	-5		-10	
	100V	-3	-5		-10			

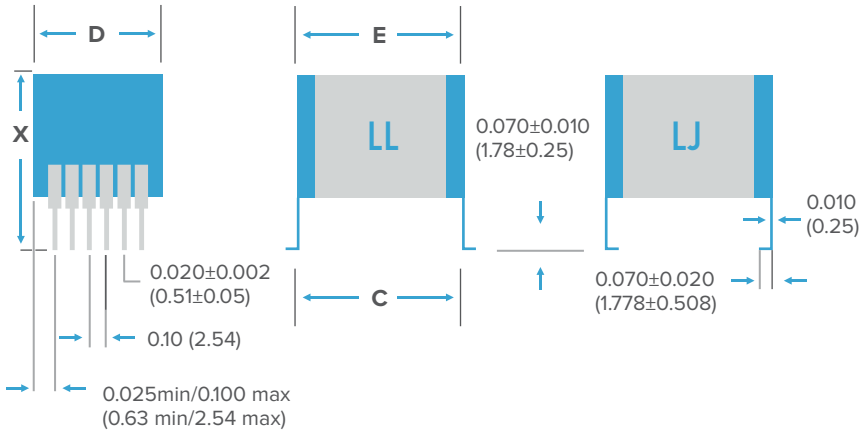
Note: Dash number denotes number of capacitors and leads per side.

Typical ESR (Ohms)					
	22µF	**27µF**	**47µF**	**100µF**	**220µF**
ESR @ 1kHz	0.0830	0.0680	0.0400	0.0240	0.0110
ESR @ 10kHz	0.0086	0.0070	0.0040	0.0033	0.0015
ESR @ 50kHz	0.0044	0.0031	0.0020	0.0013	0.0006
ESR @ 100kHz	0.0032	0.0022	0.0015	0.0009	0.0004

LN (STRAIGHT WIRE LEADS)



LJ &LL (BENT WIRE LEADS)



NUMBER	STYLE	C±.025"	D (MAX)	E (MAX)	X (MAX)
-3	LN	.250" (6.35)	.375" (9.5)	.300" (7.62)	.285" (7.24)
-3	LJ, LL	.250" (6.35)	.375" (9.5)	.300" (7.62)	.300" (7.62)
-5	LN	.250" (6.35)	.575" (14.6)	.300" (7.62)	.285" (7.24)
-5	LJ, LL	.250" (6.35)	.575" (14.6)	.300" (7.62)	.300" (7.62)
-10	LN	.250" (6.35)	1.075" (27.3)	.300" (7.62)	.285" (7.24)
-10	LJ, LL	.250" (6.35)	1.075" (27.3)	.300" (7.62)	.300" (7.62)

SV	2220	BB	476	M	101	LJ	W	-10	R
SERIES	**SIZE**	**DIELECTRIC**	**CAPACITANCE**	**TOLERANCE**	**VOLTAGE VDCW**	**LEAD STYLE**	**PACKAGING**	**CAPS/LEADS**	**RoHS**
	See Chart	BB = X7R Class II BME	Value in picofarads—Two significant figures, followed by number of zeros: **476 = 47,000,000pF**	M = +/-20%	Two significant figures, followed by number of zeros: **250 = 25V** **500 = 50V** **101 = 100V**	LN = Straight LL = L Lead LJ = J Lead	W = Waffle Pack	Number of caps and leads per side	R = RoHS compliant with exemption 7a R = 100% Sn finish on lead No R on P/N = 60Sn/40Pb finish on leads