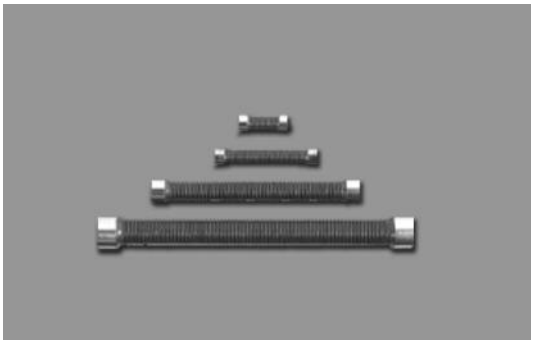
PSN, PV, PSO, PN, PWW, PAP

high voltage power resistors

KOA SPEER ELECTRONICS, INC.

EU RoHS COMPLIANT



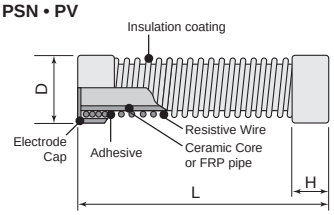
features

- PSO is made completely moisture preventive to be PSN that can be used under high moisture environment
- PN is a non-inductive type and can be used for high frequency
- PWW resistors, which are non-inductive wirewound resistors for high voltage with resistance wires wound on insulation pipes
- PAP resistors are non-inductive wirewound resistors with inductance less than PWW, can be used for pulse wave measurement, impulse generators, etc. and have the same dimensions as PWW resistors

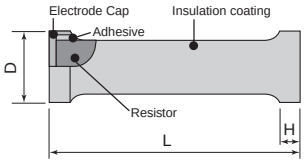
leaded resistors

dimensions and construction

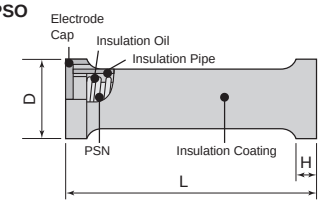
PSN • PV



PN, PWW, PAP



PSO



Size Code	Dimensions (mm) L	D±0.5	H (Nominal)	Weight (g)
PSN-0.5	50±2	17.5	10	20
PSN-1	100±2			30
PSN-2	200±2	24	15	85
PSN-3	300±2	33	20	250
PSN-4	400±3	45		600
PSN-5	500±3	62	25	800
PSN-6	1000±5			1350
PV-0.5	80±2	9.5	8	12
PV-1	150±2			23
PV-2		17.5	10	45
PV-5	250±2	24	15	105
PV-8		33	20	220
PSO-0.5	55±5	28	10	120
PSO-1	105±5			150
PSO-2	205±5	38		370

Size Code	Dimensions (mm) L	D±0.5	H (Nominal)	Weight (g)
PSO-3	320±5	46	20	760
PSO-4	420±5	65		1900
PSO-5	530±5	80	25	3500
PSO-6	1050±5			6200
PN-0.5	50±2	17	8	25
PN-1	100±2		12	55
PN-2	200±2			80
PN-3	300±2			100
PN-4	400±2			125
PWW-3, PAP-3	300±2	33	20	310 • 250
PWW-4, PAP-4	400±3	45		660 • 510
PWW-5, PAP-5	500±3	62	25	1330 • 960
PWW-6, PAP-6	1000±5			2700 • 1850

ordering information

PSN RoHS

PSN-	0.5	CP	F	A	105	J
Product Code	Power Rating	Cap	RoHS	Holder	Nominal Resistance	Resistance Tolerance
	0.5 : 2W 1 : 5W 2 : 10W 3 : 25W 4 : 50W 5 : 125W 6 : 250W	C M CP		Nil: No Holder A B	3 digits	J : ±5% K : ±10% M : ±20%

PSO RoHS

PSO-	0.5	C	F	105	J
Product Code	Power Rating	Cap	RoHS	Nominal Resistance	Resistance Tolerance
	1 : 4W 2 : 8W 3 : 20W 4 : 40W 5 : 100W 6 : 200W	C		3 digits	J : ±5% K : ±10% M : ±20%

10/05/22

PSN, PV, PSO, PN, PWW, PAP

high voltage power resistors

ordering information

PV RoHS

PV-	0.5	CP	F	A	105	J
Product Code	Power Rating	Cap	RoHS	Holder	Nominal Resistance	Resistance Tolerance
	0.5 : 2W 1 : 4W 2 : 7W 5 : 12W 8 : 20W	C M CP		Nil: No Holder A B	3 digits	J : ±5% K : ±10% M : ±20%

PN RoHS

PN-	0.5	CP	F	105	J
Product Code	Power Rating	Cap	RoHS	Nominal Resistance	Resistance Tolerance
	0.5 : 1.5W 1 : 3W 2 : 6W 3 : 9W 4 : 12W	C M CP		3 digits	J : ±5% K : ±10% M : ±20%

PWW, PAP RoHS

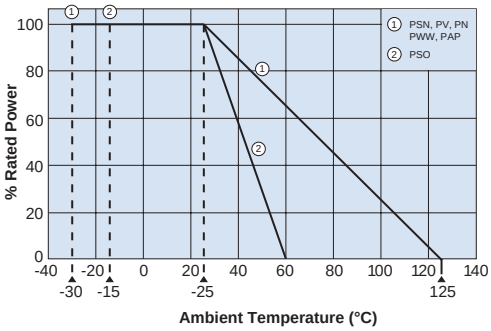
PWW-	3	M	F	A	102	J
Product Code	Power Rating	Cap	RoHS	Holder	Nominal Resistance	Resistance Tolerance
PWW PAP	3 : 25W 4 : 50W 5 : 100W 6 : 200W	M		Nil: No Holder A B	3 digits	J : ±5% K : ±10% M : ±20%

applications and ratings

Part Designation	Power Rating (W)	Resistance Range (Ω) J: ±5% K: ±10% M: ±20% (E24)	T.C.R. (x10^{-6}/K)	Maximum Working Voltage	Impulse Withstand Voltage	Energy Rating 1 time/ 5 min.	Operating Temperature Range	Inductance (µH) Maximum
PSN-0.5	2	500~500M	±1500: +25°C/-15°C ±1000: +25°C/+85°C (R<1GΩ) ±3000 (R≥1GΩ)	15kV	20kV	50J	-30°C~+125°C	17.5
PSN-1	5	1k~1G		30kV	40kV	125J		
PSN-2	10	2k~2G		60kV	80kV	400J		24
PSN-3	25	3k~3G		90kV	120kV	1.8kJ		33
PSN-4	50	4k~4G		120kV	160kV	4.0kJ		45
PSN-5	125	5k~5G		150kV	200kV	9.0kJ		62
PSN-6	250	6k~6G		300kV	400kV	20.0kJ		
PV-0.5	2	500~500M		24kV	32kV	45J		9.5
PV-1	4	1k~1G		45kV	60kV	90J		
PV-2	7	1.5k~1.5G				270J		17.5
PV-5	12	2.5k~2.5G		75kV	100kV	650J		24
PV-8	20	2.5k~2.5G				950J		33
PSO-1	4	1k~1G		30kV	40kV	100J	-15°C~+60°C	28
PSO-2	8	2k~2G		60kV	80kV	320J		38
PSO-3	20	3k~3G		90kV	120kV	1.5kJ		46
PSO-4	40	4k~4G		120kV	160kV	3.2kJ		65
PSO-5	100	5k~5G		150kV	200kV	7.2kJ		80
PSO-6	200	6k~6G		300kV	400kV	16.0kJ		
PN-0.5	1.5	50~500k		—	20kV	35J	-30°C~+125°C	17
PN-1	3	100~1M		—	40kV	70J		
PN-2	6	200~2M		—	80kV	130J		
PN-3	9	300~3M		—	120kV	200J		
PN-4	12	400~4M		—	160kV	270J		
PWW-3	25	10~800	±200	—	120kV	2kJ~5kJ		33
PWW-4	50	15~1.5k			160kV	4kJ~12kJ		45
PWW-5	100	25~2.5k			200kV	7kJ~20kJ		62
PWW-6	200	50~5k			400kV	14kJ~40kJ		62
PAP-3	25	10~400			120kV	1kJ~2kJ		33
PAP-4	50	10~800			160kV	1.5kJ~4kJ		45
PAP-5	100	15~1k			200kV	3.5kJ~10kJ		62
PAP-6	200	25~2k			400kV	7kJ~25kJ		62

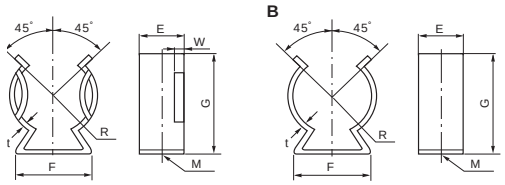
environmental applications

Derating Curve



For resistors operated at an ambient temperature of 25°C or above, a power rating shall be rated in accordance with the above derating table.

Holder Dimensions (mm)



Type	R	E	F	G	M	t	W
PSN-0.5, PSN-1, PV-2	8.5	11	16	24	ø4.2	0.8	1.5±0.5
PSN-2, PV-5	11.5	15	18	32		1.0	
PSN-3, PV-8, PWW-3, PAP-3	16	18	24	40	ø6.5		1.5±1.0
PSN-4, PWW-4, PAP-4	22	20	36	59		1.5	2.0±1.0
PSN-5, 6, PWW-5, 6, PAP-5, 6	30	25	46	74		1.5	

leaded resistors

Performance Characteristics

Parameter	Requirements Δ R±%	Test Method	
Resistance	Within specified tolerance	25°C	
T.C.R.	Within specified T.C.R.	R<1GΩ	PSN: ±1500 : +25°C/-15°C
			PSN: ±1000 : +25°C/+85°C
		R≥1GΩ	PSN: ±3000 : +25°C/-15°C, +25°C/+85°C
Rapid Change of Temperature	5%	-30°C (30 minutes)/+85°C (30 minutes) 5 cycles Except for PSN	
Voltage Characteristics	3%	Rated voltage or max. working voltage, whichever is lower and 1/10 of its voltage	
Moisture Resistance	5% : R<100MΩ	40°C, 90%~95%RH, 250 hours	
	10% : R≥100MΩ		
Endurance at 25°C	5% : R<100MΩ	25°C, 500 hours	
	10% : R≥100MΩ	25°C, 500 hours, Continuous load	

Cap Dimensions (mm)

Cap Shape	C		M				CP		C			
Type	D	d	D	M	K	A	d	ℓ	D	M	ℓ1	ℓ2
PSN-05;PSN-1;PV-2	17.5	7	17.5	3	2	7	1.0	90	—	—	—	—
PSN-2;PV-5	24	12	24	4	2	10	1.2	120	—	—	—	—
PSN-3;PV-8,PWW-3;PAP-3	33	14	33	5	4	14	—	—	—	—	—	—
PSN-4;PWW-4;PAP-4	—	—	45	6	4	16	—	—	—	—	—	—
PSN-5,6;PWW-5,6;PAP-5,6	—	—	62	8	7	26	—	—	—	—	—	—
PV-0.5;PV-1	9.5	Without hole	—	—	—	—	0.9	90	—	—	—	—
PN-0.5	17	Without hole	—	—	—	—	1.0	90	—	—	—	—
PN-1	—	—	17	4	—	—	1.0	90	—	—	—	—
PN-2~PN-4	—	—	17	4	—	—	1.2	120	—	—	—	—
PSO-05,1	—	—	—	—	—	—	—	—	28	4	8	—
PSO-2	—	—	—	—	—	—	—	—	38	6	10	—
PSO-3	—	—	—	—	—	—	—	—	46	8	—	15
PSO-4	—	—	—	—	—	—	—	—	65	10	—	20
PSO-5,6	—	—	—	—	—	—	—	—	80	12	—	25