

# 6 VARISTORS

T-11-25

## ■ Ceramic Varistors

SNR - □□□ □ D □□

Sanken  
Nonlinear  
Resistor

Diameter of ceramic disc

Number	05	07	10	14	20
Diameter	5 φ	7 φ	10 φ	14 φ	20 φ

Series Designation

Tolerance of varistor voltage

K : ±10%、L : ±15%、M : ±20%

Varistor Voltage:

The first two digits represent the first two figures of varistor voltage and the last digit represents the number of zeros to follow. In addition, in case there are decimal points, they are shown by R and all digits should be effective. EX:(241:240V, 120:12V, 8R0:8.0V)

## ■ Ratings in Common (p.28-30)

Operating Temperature ..... -40°C ~ +85°C  
 Storage Temperature ..... -40°C ~ +125°C  
 Varistor Voltage Temperature Coefficient .....  
 ..... -0.08%/°C (typical)  
 Varistor Voltage Temperature Coefficient (Low Voltage Series) ..... -0.05%/°C (typical)

## SNR Low Voltage Series (5φ·7φ·10φ)

Type No.	Max. Applied Voltage		Energy (J)	Peak Pulse Current (A)	Average Power Dissipation (W)	Varistor Voltage (V)		Max. Clamping Voltage (V)		Typical Capacitance @ 1kHz (pF)	Fig. No.	Dimensions(mm)	
	ACrms(V)	DC(V)				@	@	T max	W max				
SNR-8ROMD05	4.0	5.5	0.2	50	0.01	8 (6~11)	V <sub>0.1mA</sub>	22	V <sub>1.0A</sub>	2500	1	4.0	2.0
SNR-120MD05	6.0	8.0	0.3			12 (9~16)		32		2000			
SNR-8ROMD07	4.0	5.5	0.4	125	0.02	8 (6~11)	V <sub>1mA</sub>	20	V <sub>2.5A</sub>	6000	2	4.0	2.0
SNR-120MD07	6.0	8.0	0.6			12 (9~16)		30		4000			
SNR-8ROMD10	4.0	5.5	0.8	250	0.05	8 (6~11)	V <sub>1mA</sub>	20	V <sub>5A</sub>	12000	3	4.4	2.0
SNR-120MD10	6.0	8.0	1.2			12 (9~16)		30		7500			

## SNR Series (5φ)

Type No.	Max. Applied Voltage		Energy (J)	Peak Pulse Current (A)	Average Power Dissipation (W)	Varistor Voltage (V)		Max. Clamping Voltage (V)		Typical Capacitance @ 1kHz (pF)	Fig. No.	Dimensions(mm)	
	ACrms(V)	DC(V)				@	@	T max	W max				
SNR-180LD05	10	14	0.3	50	0.01	18 (15~21)	V <sub>0.1mA</sub>	42	V <sub>1A</sub>	1200	1	4.0	2.0
SNR-220KD05	14	18	0.4			22 (20~24)		48		1000			
SNR-270KD05	17	22	0.5			27 (24~30)		60		800			
SNR-330KD05	20	26	0.6			33 (30~36)		73		690			
SNR-390KD05	25	31	0.8			39 (35~43)		86		570		4.5	2.5
SNR-470KD05	30	38	1.0			47 (42~52)		104		490			
SNR-560KD05	35	45	1.0			56 (50~62)		123		460		5.0	3.0
SNR-680KD05	40	56	1.2			68 (61~75)		150		420			
SNR-820KD05	50	65	1.7			82 (74~90)		145		200		5.5	3.5
SNR-101KD05	60	85	2.0			100 (90~110)		175		170			
SNR-121KD05	75	100	2.5			120 (108~132)		210		150		5.0	2.5
SNR-151KD05	95	125	3.0			150 (135~165)		260		120			
SNR-201KD05	130	170	4.0			200 (185~225)		355		100		6.0	3.5
SNR-221KD05	140	180	4.5			220 (198~242)		380		80			
SNR-241KD05	150	200	5.0	240 (216~264)	415	75	6.0	3.5					
SNR-271KD05	175	225	6.0	270 (247~303)	475	70							
SNR-391KD05	250	320	8.0	390 (351~429)	675	50	7.0	5.0					
SNR-431KD05	275	350	9.0	430 (387~473)	745	45							
SNR-471KD05	300	385	10.0	470 (423~517)	810	40							

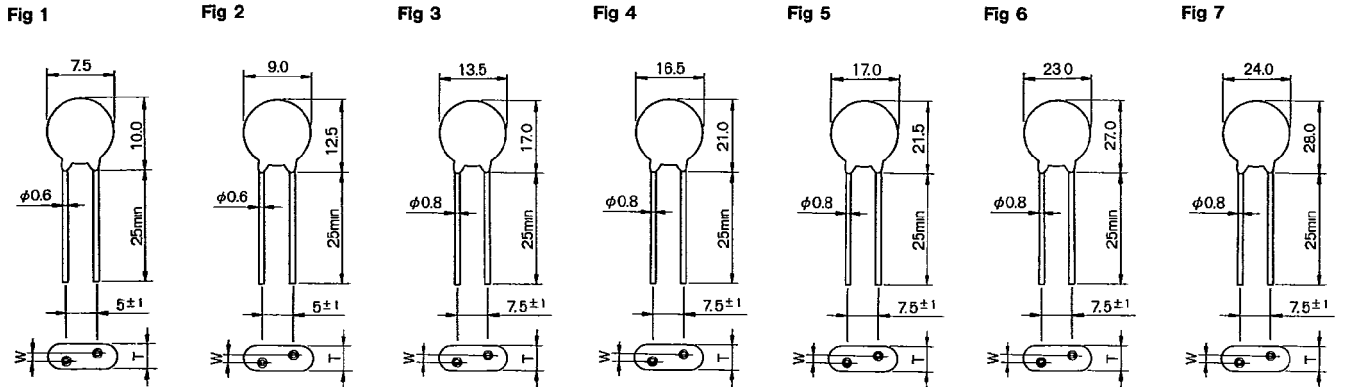
SNR Series(7φ·10φ·14φ)

Type No.	Max. Applied Voltage		Energy (J)	Peak Pulse Current (A)	Average Power Dissipation (W)	Varistor Voltage (V)		Max. Clamping Voltage (V)		Typical Capacitance @ 1kHz (pF)	Fig. No.	Dimensions(mm)	
	ACrms(V)	DC(V)				@	@	T max	W max				
SNR-180LD07	10	14	0.8	125	0.02	18( 15~ 21)	V1mA	38	V2.5A	3200	2	4.0	2.0
SNR-220KD07	14	18	0.9			22( 20~ 24)		43		2600			
SNR-270KD07	17	22	1.0			27( 24~ 30)		53		2100			
SNR-330KD07	20	26	1.2			33( 30~ 36)		65		1800			
SNR-390KD07	25	31	1.5			39( 35~ 43)		77		1500			
SNR-470KD07	30	38	1.8			47( 42~ 52)		93		1300			
SNR-560KD07	35	45	2.2			56( 50~ 62)		110		1200			
SNR-680KD07	40	56	2.5			68( 61~ 75)		135		1100			
SNR-820KD07	50	65	3.5			82( 74~ 90)		135		550			
SNR-101KD07	60	85	4.0			100( 90~110)		165		450			
SNR-121KD07	75	100	5.0			120(108~132)		200		380			
SNR-151KD07	95	125	6.0			150(135~165)		250		300			
SNR-201KD07	130	170	10.0			200(185~225)		340		250			
SNR-221KD07	140	180	10.0			220(198~242)		360		220			
SNR-241KD07	150	200	10.0			240(216~264)		395		200			
SNR-271KD07	175	225	12.0			270(247~303)		455		180			
SNR-391KD07	250	320	17.0	390(351~429)	650	130							
SNR-431KD07	275	350	20.0	430(387~473)	710	120							
SNR-471KD07	300	385	20.0	470(423~517)	775	100							
SNR-180LD10	10	14	1.5	250	0.05	18( 15~ 21)	V1mA	38	V5A	5000	3	4.4	2.0
SNR-220KD10	14	18	2.0			22( 20~ 24)		43		4200			
SNR-270KD10	17	22	2.5			27( 24~ 30)		53		3500			
SNR-330KD10	20	26	3.0			33( 30~ 36)		65		2900			
SNR-390KD10	25	31	3.5			39( 35~ 43)		77		2400			
SNR-470KD10	30	38	4.5			47( 42~ 52)		93		2000			
SNR-560KD10	35	45	5.5			56( 50~ 62)		110		1800			
SNR-680KD10	40	56	6.5			68( 61~ 75)		135		1400			
SNR-820KD10	50	65	8.0			82( 74~ 90)		135		940			
SNR-101KD10	60	85	10.0			100( 90~110)		165		780			
SNR-121KD10	75	100	12.0			120(108~132)		200		680			
SNR-151KD10	95	125	16.0			150(135~165)		250		520			
SNR-201KD10	130	170	20.0			200(185~225)		340		390			
SNR-221KD10	140	180	23.0			220(198~242)		360		360			
SNR-241KD10	150	200	25.0			240(216~264)		395		340			
SNR-271KD10	175	225	30.0			270(247~303)		455		310			
SNR-391KD10	250	320	40.0	390(351~429)	650	230							
SNR-431KD10	275	350	45.0	430(387~473)	710	210							
SNR-471KD10	300	385	45.0	470(423~517)	775	190							
SNR-681KD10	420	560	45.0	680(612~748)	1120	140							
SNR-821KD10	510	670	55.0	820(738~902)	1355	120							
SNR-180LD14	10	14	3.5	500	0.1	18( 15~ 21)	V1mA	38	V10A	9500	4	4.4	2.0
SNR-220KD14	14	18	4.0			22( 20~ 24)		43		8000			
SNR-270KD14	17	22	5.0			27( 24~ 30)		53		6800			
SNR-330KD14	20	26	6.0			33( 30~ 36)		65		5600			
SNR-390KD14	25	31	7.0			39( 35~ 43)		77		4700			
SNR-470KD14	30	38	8.5			47( 42~ 52)		93		4000			
SNR-560KD14	35	45	10.0			56( 50~ 62)		110		3900			
SNR-680KD14	40	56	12.0			68( 61~ 75)		135		2800			
SNR-820KD14	50	65	14.0			82( 74~ 90)		135		1800			
SNR-101KD14	60	85	18.0			100( 90~110)		165		1500			
SNR-121KD14	75	100	20.0			120(108~132)		200		1300			
SNR-151KD14	95	125	25.0			150(135~165)		250		1000			
SNR-201KD14	130	170	35.0			200(185~225)		340		750			
SNR-221KD14	140	180	40.0			220(198~242)		360		700			
SNR-241KD14	150	200	40.0			240(216~264)		395		650			
SNR-271KD14	175	225	50.0			270(247~303)		455		600			
SNR-391KD14	250	320	70.0	390(351~429)	650	450							
SNR-431KD14	275	350	75.0	430(387~473)	710	400							
SNR-471KD14	300	385	80.0	470(423~517)	775	370							
SNR-681KD14	420	560	90.0	680(612~748)	1120	260							
SNR-821KD14	510	670	110.0	820(738~902)	1355	230							

**SNR Series(20φ)**

Type No.	Max. Applied Voltage		Energy (J)	Peak Pulse Current (A)	Average Power Dissipation (W)	Varistor Voltage (V)		Max. Clamping Voltage (V)		Typical Capacitance @ 1kHz (pF)	Fig. No.	Dimensions(mm)	
	AC <sub>rms</sub> (V)	DC(V)					@	(V)	@			T max	W max
SNR-201KD20	130	170	70.0	4000	1.0	200 (185~225)	V <sub>1mA</sub>	340	V <sub>100A</sub>	1500	6	6.5	4.0
SNR-221KD20	140	180	75.0			220 (198~242)		360		1400			
SNR-241KD20	150	200	80.0			240 (216~264)		395		1300			
SNR-271KD20	175	225	90.0			270 (247~303)		455		1200			
SNR-391KD20	250	320	130.0			390 (351~409)		650		900			
SNR-431KD20	275	350	140.0			430 (387~473)		710		800			
SNR-471KD20	300	385	150.0			470 (423~517)		775		750			
SNR-681KD20	420	560	160.0			680 (612~748)		1120		500			
SNR-821KD20	510	670	190.0			820 (738~902)		1355		460			
												11.5	9.5

● Outline Drawings (Dimensions in mm)



■ Silicon Varistors

Type No.	Maximum Ratings				Electrical Characteristics (Ta = 25°C)						Color Band	Fig. No.
	I <sub>F</sub> (mA)	I <sub>FSM</sub> (A)	T <sub>OP</sub> (°C)	T <sub>STG</sub> (°C)	V <sub>F1</sub> (V)	I <sub>F1</sub> (mA)	V <sub>F2</sub> (V)	I <sub>F2</sub> (mA)	V <sub>F3</sub> (V)	I <sub>F3</sub> (mA)		
VR-60SS	400	—	65	-40~+100	1.5	1000	—	—	0.2	0.02	Orange	8
-6ISS	150	—			2.3±0.25	1	2.75±0.25	10	3.1±0.25	70	Orange & Red	
SV-2SS	150	25	65	-40~+100	4.0	100	—	—	1.2	0.05	Red	8
-3SS	250	30			2.0		—	0.6	Orange			
-4SS	150	—			1.5±0.2		1	2.15±0.2	12		2.4±0.25	
SV02YS	200	30	70	-40~+130	1.2±0.2	1	1.5±0.25	70	V <sub>R</sub> (100V)	I <sub>R</sub> (10μA)	—	9
03YS	150	27			1.8±0.2		2.3±0.25					
04YS	100	25			2.35±0.25		3.0±0.3					
05YS	80	22			3.0±0.3		3.8±0.4					
06YS	70	20			3.5±0.35		4.5±0.45					

● Outline Drawings (Dimensions in mm)

