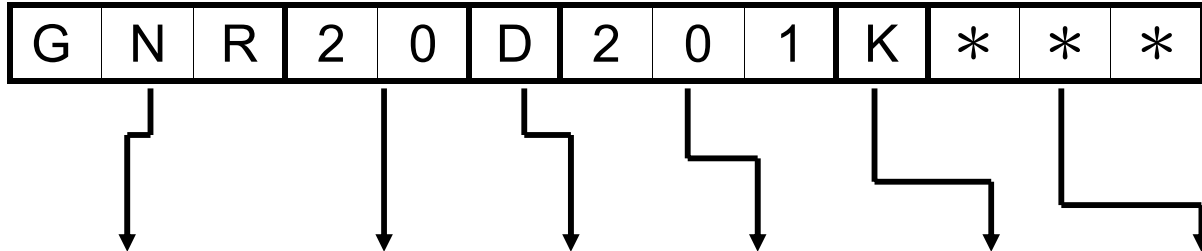


VARISTORS

Catalog number system



Product Series	Element Size	Type	Nominal Voltage at 1mA DC	Tolerance	Suffixes
GNR: General Nonlinear Resistor	05 :φ5mm 07 :φ7mm 10 :φ10mm 14 :φ14mm 20 :φ20mm 25 :φ25mm 32 :φ32mm 34 :34mm x 34mm 40 :φ40mm 53 :φ53mm 60 :60mm x 60mm	D: Disk S: Square B: Block	The first two digits are significant figures and the third one denotes the number of zeros following	J: ±5% K: ±10% L: ±15% or customer special requirement	A: F=7.5 4: L=4mm±1mm C: Crimped lead T: Ammo R: Reel

CERAMATE	TYPE	GNR07D□□□K	MODEL		PAGE	1/4
CITATION				DATE	Jul. 21,2004	
SUBJECT	QUALITY APPROVAL and STRUCTURE			REV.	C01	

1. SAFETY STANDARDS APPROVAL

Standard No.	UL 1414	UL 1449	UL 497B	CUL	CSA C22.2 No.1	VDE 42000
File No.	E181368	E166389	E187844	E166389	LR105317	5938
180K~680K			Approved			
820K~181K		Approved	Approved	Approved		Approved
201K~471K	Approved	Approved	Approved	Approved	Approved	Approved

2. STRUCTURE

NO.	ITEM	DESCRIPTION		
2.1	Main Material	Zinc Oxide		
2.2	Coating Material	Epoxy Resin		
2.3	Marking	GNR, Part number, UL, CSA(or CUL) and VDE recognized component mark, Date code		
2.4	Appearance	Without dirt and crack, marking should be clear		
2.5	Dimensions		D(max.)	9.0
			H(max.)	12.0
			T(max.)	*(1)
			F	5.0±1.0
			φd	0.6±0.1
			L(min.)	25.0
			k(max.)	3.0
			Unit: mm	

***(1) See Page 2, Dimensions Table**

CITATION

DATE

Jul. 21,2004

SUBJECT

DIMENSIONS TABLE

REV.

C01

Part No.	T_{max.}
07D180K	3.4
07D220K	3.6
07D270K	3.9
07D330K	3.2
07D390K	3.4
07D470K	3.6
07D560K	3.8
07D680K	3.6
07D820K	3.2
07D101K	3.4
07D121K	3.6
07D151K	3.9
07D181K	3.3
07D201K	3.4
07D221K	3.5
07D241K	3.6
07D271K	3.7
07D301K	3.9
07D331K	4.0
07D361K	4.2
07D391K	4.3
07D431K	4.5
07D471K	4.7

Unit:mm

CERAMATE	TYPE	GNR07D□□□K	MODEL		PAGE	3/4
CITATION				DATE	Jul. 21,2004	
SUBJECT	ELECTRICAL CHARACTERISTICS			REV.	C01	

3. ELECTRICAL CHARACTERISTICS

NO.	ITEM	PERFORMANCE	TEST METHODS
3.0	Standard Conditions		Unless otherwise specified, all tests are made under environmental conditions as given below: Temperature: 5~35°C Relative humidity: 45~85 % RH
3.1	Maximum Allowable Voltage	AC : *(2) V _{rms} DC : *(2) V	Maximum continuous sine wave(RMS) or DC voltage which may be applied.
3.2	Varistor Voltage	V _{0.1mA} : *(2) V	Voltage across the varistor measured at C _{mA} DC.
3.3	Varistor Voltage Temperature Coefficient	0 ~ -0.05 %/°C	$\frac{V_{CmA@85^{\circ}C} - V_{CmA@25^{\circ}C}}{V_{CmA@25^{\circ}C}} \times \frac{1}{60} \times 100$
3.4	Max. Clamping Voltage	*(2) V at *(2) A	Peak voltage across the varistor with a specified peak impulse current of 8x20μs waveform.
3.5	Rated Power	*(2) W	Maximum 50~60Hz power which may be loaded for 1,000 hrs at 85±2°C with $\Delta V_{CmA} / V_{CmA} \leq \pm 10\%$.
3.6	Withstanding Surge Current	*(2) A	The max. current within the varistor voltage change of less than ±10% when one impulse current (8x20μs) applied.
			The max. current with a varistor voltage change of less than ±10% when two times impulse current (8x20μs) are applied at intervals of 5 minutes.
3.7	Energy	*(2) Joule	The max. energy absorbed with a varistor voltage change of less than ±10% when one impulse (10x1000μs) is applied.
3.8	Surge Life	*(2) A	The max. current with a varistor voltage change of less than ±10% when 10,000 times impulse current (8x20μs) are applied at intervals of 20 seconds at room temperature.

***(2) See Page 4**

PART NUMBER	MAXIMUM ALLOWABLE VOLTAGE		VARISTOR VOLTAGE (V)	CLAMPING VOLTAGE (MAX.)		RATED WATTAGE (MAX.) (W)	SURGE CURRENT (8/20 μ s)		MAXIMUM ENERGY (10/1000 μ s)	SURGE LIFE
	AC _{rms} (V)	DC(V)		(V)	Ip(A)		I _{tm} (A)			
			1 TIME			2 TIMES	AC _{rms} (V)			
07D180K	11	14	16~20	36	2.5	0.02	500	250	1.1	25
07D220K	14	18	20~24	43					1.3	
07D270K	17	22	24~30	53					1.6	
07D330K	20	26	30~36	65					2.0	
07D390K	25	31	35~43	77					2.4	
07D470K	30	38	42~52	93					2.8	
07D560K	35	45	50~62	110					3.4	
07D680K	40	56	61~75	135					4.1	
07D820K	50	65	74~90	135	10	0.25	1750	1250	7.0	100
07D101K	60	85	90~110	165					8.5	
07D121K	75	100	108~132	200					10.0	
07D151K	95	125	135~165	250					13.0	
07D181K	115	150	162~198	300					16.0	
07D201K	130	170	185~225	340					17.5	
07D221K	140	180	198~242	360					19.0	
07D241K	150	200	216~264	395					21.0	
07D271K	175	225	247~303	455					24.0	
07D301K	190	250	270~330	505					26.0	
07D331K	210	275	297~363	550					28.0	
07D361K	230	300	324~396	595					32.0	
07D391K	250	320	351~429	650	35.0					
07D431K	275	350	387~473	710	40.0					
07D471K	300	385	423~517	775	42.0					