



## SPECIFICATIONS

PRODUCT : VARISTOR

TYPE : GNR07D□□□K

MODEL :

CITATION :

REVISION : B01

TOTAL PAGES : 5 PAGE : 1/5

RELEASED DATE : Oct. 13, 2001

### REVISION HISTORY

NO	REV. DATE	DCR NO.	DESCRIPTION OF CHANGE	REV.
1	Oct. 13, 2001		NEW RELEASE	B01
2				
3				
4				
5				
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7				
8				
9				
10				
11				
12				

Approved by	Checked by	Edited by
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<b>CERAMATE</b>	TYPE	<b>GNR07D□□□K</b>	MODEL		PAGE	2/5
CITATION				DATE	<b>Oct. 13, 2001</b>	
SUBJECT	<b>QUALITY APPROVAL and STRUCTURE</b>			REV.	<b>B01</b>	

### 1. QUALITY SYSTEM APPROVAL

ISO9001 Certificate of approval No.97-HOU-AQ-1382

### 2. 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

### 3. STRUCTURE

NO.	ITEM	DESCRIPTION		
3.1	Main Material	Zinc Oxide		
3.2	Coating Material	Epoxy Resin		
3.3	Marking	GNR, Part number, UL, CSA(or CUL) and VDE recognized component mark, Date code		
3.4	Appearance	Without dirt and crack, marking should be clear		
3.5	Dimensions		D(max.)	9.0
			H(max.)	12.0
			T(max.)	<b>*(1)</b>
			F	5.0± 1.0
			φ d	0.6± 0.1
			L(min.)	25.0
			k(max.)	3.0
			Unit: mm	

**\*(1) See Page 3, Dimensions Table**

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SUBJECT

**DIMENSIONS TABLE**

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

**Unit:mm**

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SUBJECT	<b>ELECTRICAL CHARACTERISTICS</b>			REV.	<b>B01</b>	

#### 4. ELECTRICAL CHARACTERISTICS

N0.	ITEM	PERFORMANCE	TEST METHODS
4.0	Standard Conditions		Unless otherwise specified, all tests are made under environmental conditions as given below: Temperature: 5~35°C Relative humidity: 45~85 % RH
4.1	Maximum Allowable Voltage	AC : <b>*(2)</b> Vrms DC : <b>*(2)</b> V	Maximum continuous sine wave(RMS) or DC voltage which may be applied.
4.2	Varistor Voltage	V <sub>1mA</sub> : <b>*(2)</b> V	Voltage across the varistor measured at C <sub>mA</sub> DC.
4.3	Varistor Voltage Temperature Coefficient	0 ~ -0.05 %/°C	$\frac{V_{CmA \text{ at } 85^{\circ}\text{C}} - V_{CmA \text{ at } 25^{\circ}\text{C}}}{V_{CmA \text{ at } 25^{\circ}\text{C}}} \times \frac{1}{60} \times 100$
4.4	Max. Clamping Voltage	<b>*(2)</b> V at <b>*(2)</b> A	Peak voltage across the varistor with a specified peak impulse current of 8x 20 μs waveform.
4.5	Rated Power	<b>*(2)</b> W	Maximum 50~60Hz power which may be loaded for 1,000 hrs at 85± 2°C with $\Delta V_{CmA} / V_{CmA} \leq \pm 10\%$ .
4.6	Withstanding Surge Current	<b>*(2)</b> A	The max. current within the varistor voltage change of less than ± 10% when impulse current (8x 20 μs) applied .
			The max. current within the varistor voltage change of less than ± 10% when impulse current (8x 20 μs) applied two times with an interval of 5 minutes.
4.7	Energy	<b>*(2)</b> Joule	The max. energy absorbed with a varistor voltage change of less than ± 10% when one impulse(10x 1000 μs) is applied.
4.8	Surge Life	<b>*(2)</b> A	The max. current with a varistor voltage change of less than ± 10% when 10,000 times impulse current (8x 20 μs) are applied at intervals of 20 seconds at room temperature.

\* (2) See Page 5

PART NUMBER	MAXIMUM ALLOWABLE VOLTAGE		VARISTOR VOLTAGE (V)	CLAMPING VOLTAGE (MAX.)		RATED WATTAGE (MAX.) (W)	SURGE CURRENT (8/20 $\mu$ s)		MAXIMUM ENERGY (10/1000 $\mu$ s) $W_{tm}$ (joule)	SURGE LIFE (A)
	AC <sub>rms</sub> (V)	DC(V)		(V)	Ip(A)		I <sub>tm</sub> (A)	1 TIME		
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					