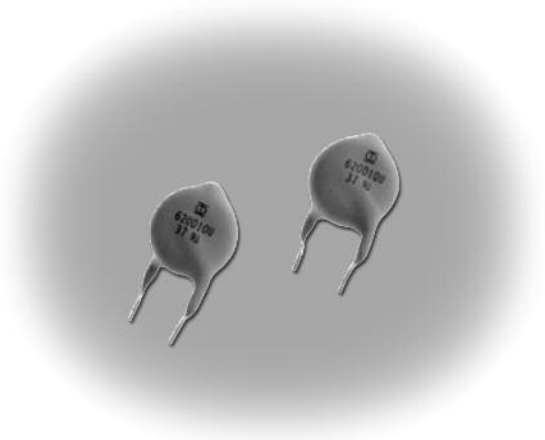
KOA SPEER ELECTRONICS, INC.

NOT RECOMMENDED FOR NEW DESIGN

NVF

metal oxide varistor (nonflammable coated)

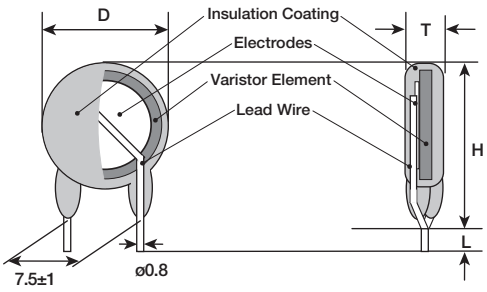
EU RoHS COMPLIANT



features

- Varistors have two-way symmetries and can absorb positive and negative surges
- Flame retardant SILICONE (UL94V-0) outer coating (UL Registered Marking)
- Products meet EU RoHS requirements

dimensions and construction



Type	Dimensions inches (mm)			
	D (max.)*	T (max.)*	H (max.)	L
NVF10U	.591 - .630 (15.0 - 16.0)	.268 - .453 (6.8 - 11.5)	.866 (22.0)	.157±.004 (4.0 - 0.1)

* D max. and t max. vary according to the varistor voltage

ordering information

NVF	10	U	C	D	F	470
Type	Diameter of Element	Series	Termination Material	Inner Connect Solder Material	Forming & Packaging	Varistor Voltage
	10: ø10mm	U: U series	C: Sn-Cu	D: SnAg	F: L= 4.0mm	470V 470

applications and ratings

Part Designation	Varistor Voltage V_{1mA} (V)	Maximum Allowable Voltage		Maximum Energy E (J) T= 2ms	Maximum Peak Current T= 8/20μs (A)		Clamping Volume V25A
		A.C.($V_{r.m.s.}$)	D.C.(V)		Ip(1 time)	Ip(10000 times)	
NVF10UCDF220	198~242	140	180	27.5	3500	150	360
NVF10UCDF240	216~264	150	200	30.0			395
NVF10UCDF270	247~303	175	225	35.0			455
NVF10UCDF430	387~473	275	350	55.0			710
NVF10UCDF470	423~517	300	385	60.0			775
NVF10UCDF510	459~561	320	410	67.0			845
NVF10UCDF620	558~682	385	505	67.0			1025
NVF10UCDF680	612~748	420	560	67.0			1120

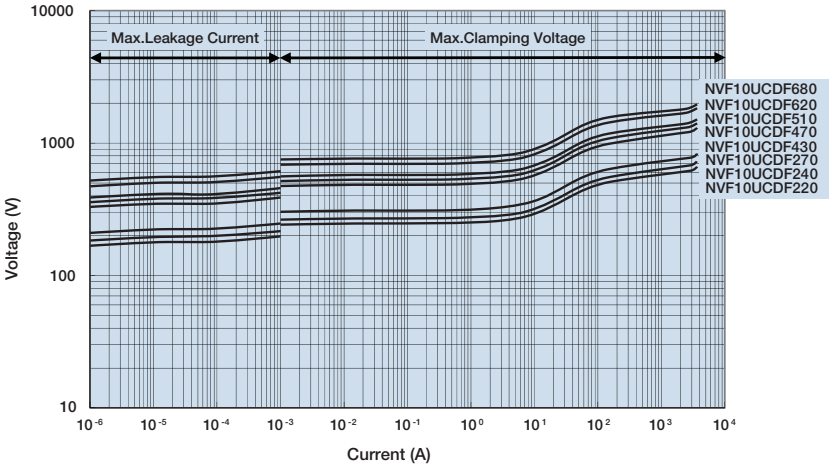
Operating temperature range: -40°C to +85°C
Storage temperature range: -40°C to +125°C

For further information on packaging, please refer to Appendix C.

circuit protection

environmental applications

Voltage Current Curves (Ta = +25°C)



Performance Characteristics

Parameter	Requirement Δ V1±%	Test Method
Varistor Voltage	Within specified tolerance	Voltage between terminals when the specified current is flowed
Resistance to Solder Heat	±5% no abnormality in appearance	260°C ± 5°C, 10 seconds ± 1 second
Solderability	95% coverage minimum	230°C ± 5°C, 5 seconds ± 0.5 second/250°C ± 5°C, 5 seconds ± 0.5 second (Pb free)
Rapid Change of Temperature	±5% no abnormality in appearance	-40°C (30 minutes)/ +125°C (30 minutes), 50 cycles
Maximum Peak Current	±10% no abnormality in appearance	Rated impulse current of (T=8/20μ seconds), positive or negative applied once
Maximum Energy	±10% no abnormality in appearance	A single standard impulse of (T=2m second), once
High Temperature Life with d.c. Bias	±10% no abnormality in appearance	85°C ± 5°C, 1000h, Load: Maximum allowable circuit voltage (Vd.c.)
High Temperature & High Humidity Life with d.c. Bias	±10% no abnormality in appearance	85°C ± 5°C, 85% RH, 1000h, Load: Maximum allowable circuit voltage (Vd.c.)
High Temperature & High Humidity Storage Life	±5% no abnormality in appearance	80°C ± 5°C, 95% RH, 1000h
High Temperature Storage	±5% no abnormality in appearance	125°C ± 5°C, 1000h
Low Temperature Storage	±5% no abnormality in appearance	-40°C ± 5°C, 1000h
Peak Current Life	±10% no abnormality in appearance	Rated impulse current of (T=8/20μ seconds), 10,000 times, interval 10 seconds