GRACE

Ceramic transient voltage suppressors

SMD multilayer transient voltage suppressors,
standard series

Series/Type:

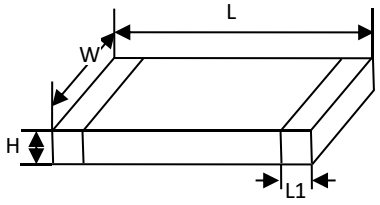
Date: November 2019

1 . Standard series

KRVA	2220	G	250	N	CXXX	A122	TWS	NNN	T
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩

①production series： GRACE Varistor/ESD
②size：1206=3216, 1210=3225, 1812=4532, 2220=5650
③type：E:ESD, G:general, H:high energy, S:high speed
④working voltage (AC): 4R0=4V, 110=11V, 170=17V, 250=25V
⑤end termination: S: Ag/Pd N: Ag/Ni/Sn
⑥typical capacitance value measured : A:1.0-5PF, B:5.1-10PF, C:10.1-20PF, D:20.1-30PF, E:30.1-50PF, F:50.1-100PF, G:100.1-200PF, H:200.1-300PF, I:300.1-500PF, J:500.1-800PF, K:800PF-1200PF
201=200PF ,250=25PF,100=10PF,3R0=3PF,0R15=0.15PF,0R2=0.2PF
CXXX:Not required or not shown, X:Not required or not shown;
⑦rated peak single pulse transient current at *5: A801=800A, A102=1000A，
AXXX= Not required or not shown, AX=Not required or not shown
⑧design NO.: TWS
⑨customer identification code: NNN
⑩package：T: taping, B: bulk

2 . Size



Model	0201(0603)	0402(1005)	0603(1608)	0604(1610)	0805(2012)	0806(2016)	1206(3216)	1210(3225)	1812(4532)
Length(L)	0.60±0.15	1.00±0.20	1.60±0.20	1.60±0.15	2.00±0.20	2.20±0.20	3.20±0.20	3.20±0.20	4.50±0.20
Width(W)	0.30±0.15	0.50±0.20	0.80±0.20	1.00±0.15	1.20±0.20	1.70±0.20	1.60±0.20	2.50±0.20	3.20±0.20
High(H)	0.30±0.15	0.50±0.20	0.80±0.20	1.15Max	0.80±0.20	1.80Max	1.6Max	3.2Max	3.5Max
L1	0.30±0.10	0.30±0.20	0.30±0.20	0.25±0.10	0.40±0.20	0.25±0.10	0.40±0.30	0.40±0.30	0.50±0.30

Model	2220(5650)	3220(08CL)	4032(10CL)	4840(12CL)
Length(L)	5.60±0.20	8.00±0.30	10.0±0.30	12.0±0.30
Width(W)	5.00±0.20	5.00±0.30	8.00±0.30	10.0±0.30
High(H)	3.5Max	2.00±0.30	2.00±0.30	2.50±0.30
L1	0.80±0.30	0.80±0.30	0.80±0.30	2.50±0.30

3 . Electrical specifications and ordering codes

Type: 0201～0603

- ☐ Leadless, size 0603～1608
- ☐ Multilayer ceramic construction
- ☐ Wide operating temperature : -55℃ to+125℃
- ☐ Fast response (≤1ns)
- ☐ High transient current capability
- ☐ Low leakage current

GRACE Varistor Part number	Working voltage		Breakdown voltage		Clamping voltage	Transient energy	Peak current	Capacitance
	AC	DC	@1mA DC		8/20 μs 1A	10/100μs	8/20μs	@ 1kHz
	V_{RMS}(V)	V_{DC}(V)	V_B(V)		Vc(V)	E_T(J)	Ip(A)	C(pF)
KRVA0201G3R0N101AXRBTNNNT	3	4.0	6.8	±20%	10	0.01	5	100
KRVA0201G3R3N101AXRBTNNNT	3.3	5.0	8	±20%	10	0.01	5	100
KRVA0201G4R0N101AXRBTNNNT	4	5.6	12	±20%	20	0.01	8	100
KRVA0402G2R5NIAXZQHNNNT	2.5	3.3	5	±20%	10	0.02	10	360
KRVA0402G4R0NGAXZQHNNNT	4	5.0	8	±20%	20	0.05	10	160
KRVA0402G4R0N481AXRBTNNNT	4	5.0	8	±20%	20	0.05	10	480
KRVA0402G4R0N651AXRBTNNNT	4	5.0	8	±20%	20	0.05	10	650
KRVA0402G4R0N121AXSZSNNNT	4	5.6	12	±10%	20	0.05	10	120
KRVA0403G4R0N231AXSZSNNNT	4	5.6	12	±10%	20	0.03	10	230
KRVA0402G4R0N361AXTWSNNNT	4	5.6	12	±10%	20	0.05	10	360
KRVA0403G4R0N481AXTWSNNNT	4	5.6	12	±10%	20	0.03	10	480
KRVA0403G4R0N481A500TWSNNNT	4	5.6	12	±10%	20	0.03	10	480
KRVA0603G2R5NIA300ZQHNNNT	2.5	3.3	5	±20%	10	0.10	30	360
KRVA0603G3R5NIA300GZCNNNT	3.5	5.5	8	±20%	15	0.10	30	360
KRVA0603G3R5NHA300GZCNNNT	3.5	5.5	8	±20%	15	0.10	30	270
KRVA0603G3R5NJA300GZCNNNT	3.5	5.5	8	±20%	15	0.10	30	480
KRVA0603G3R5N801A300TWSNNNT	3.5	5.5	8	±20%	15	0.10	30	800
KRVA0603G3R5NPA300GZCNNNT	3.5	5.5	8	±20%	15	0.10	30	2200
KRVA0603G4R0NHA300GZCNNNT	4	5.6	9	±20%	15	0.10	30	270
KRVA0603G4R0N121A300GZCNNNT	4	5.6	12	±10%	20	0.10	30	120
KRVA0603G4R0N361A300GZCNNNT	4	5.6	12	±10%	20	0.10	30	360
KRVA0603G4R0N481A300GZCNNNT	4	5.6	12	±10%	20	0.10	30	480
KRVA0603G6R4N551A300GZCNNNT	6.4	9	12	±10%	26	0.20	30	550
KRVA0603G6R4N821A300GZCNNNT	6.4	9	12	±10%	26	0.20	30	820
KRVA0603G8R0N251A300SZSNNNT	8	12	16	±10%	28	0.20	30	250
KRVA0603G110NIA300GZCNNNT	11	14	18	±10%	30	0.20	30	350
KRVA0603G140N251A300GZCNNNT	14	18	24	±10%	39	0.20	30	250
KRVA0603G170N181A300GZCNNNT	17	22	27	±10%	45	0.20	30	180
KRVA0603G200N121A300GZCNNNT	20	26	33	±10%	54	0.10	30	120
KRVA0603G250NGA300GZCNNNT	25	30	39	±10%	65	0.20	30	160
KRVA0603G300NGA300GZCNNNT	30	38	47	±10%	77	0.20	30	130
KRVA0603G350NGA300GZCNNNT	35	45	56	±10%	90	0.20	30	110

KRVA0603G400NFA300GZCNNNT	40	56	68	±10%	110	0.20	30	80
KRVA0603G500NFA300GZCNNNT	50	65	82	±10%	135	0.20	30	60

Notes:

1.Typical leakage at 25℃<50uA, maximum leakage 100uA。

2.At normal:ΔCp±30%,In order to satisfy the applications of customer in various fields, the capacitance range can be designed during manufacturing according to the request, please contact our sales department if needed

Type: 0805～1206 Medium and low voltage , low surge protection varistor type

- ☐ Leadless, size 2012～3216
- ☐ Multilayer ceramic construction
- ☐ Wide operating temperature : -55℃ to+125℃
- ☐ Fast response (≤1ns)
- ☐ High transient current capability
- ☐ Low leakage current

GRACE Varistor Part number	Working voltage		Breakdown voltage		Clamping voltage	Transient energy	Peak current	Capacitance
	AC	DC	@1mA DC		8/20 μs 1A	10/100μs	8/20μs	@ 1kHz
	V_{RMS}(V)	V_{DC}(V)	V_B(V)		Vc(V)	E_T(J)	Ip(A)	C(pF)
KRVA0805G2R5NXA400ZQHNNNT	2.5	3.3	5	±20%	10	0.10	40	1600
KRVA0805G4R0NXA400ZQHNNNT	4	5.6	8	±20%	15	0.10	40	1200
KRVA0805G6R0NXA400ZQHNNNT	6	8	12	±10%	20	0.10	40	900
KRVA0805G110NXA400ZQHNNNT	11	14	18	±10%	30	0.10	40	800
KRVA0805G140NXA400ZQHNNNT	14	18	22	±10%	33	0.20	40	600
KRVA0805G170NXA400ZQHNNNT	17	22	27	±10%	44	0.20	40	520
KRVA0805G200NXA400ZQHNNNT	20	26	33	±10%	54	0.20	40	450
KRVA0805G250NXA400ZQHNNNT	25	30	39	±10%	65	0.20	40	440
KRVA0805G300NXA400ZQHNNNT	30	38	47	±10%	77	0.20	40	430
KRVA0805G350NXA400ZQHNNNT	35	45	56	±10%	90	0.20	40	380
KRVA0805G400NXA400ZQHNNNT	40	56	68	±10%	110	0.20	40	360
KRVA0805G500NXA400ZQHNNNT	50	65	82	±10%	135	0.20	40	330
KRVA0805G600NXA400ZQHNNNT	60	85	100	±10%	165	0.20	40	320
KRVA0805G750NXA400ZQHNNNT	75	100	120	±10%	250	0.20	40	220
KRVA1206G2R5NXA151ZQHNNNT	2.5	3.3	5	±20%	10	0.40	150	1900
KRVA1206G4R0NXA151ZQHNNNT	4	5.6	8	±20%	15	0.40	150	1600
KRVA1206G6R0NXA151ZQHNNNT	6	8	12	±10%	20	0.40	150	1300
KRVA1206G9R0NXA151ZQHNNNT	9	12	15	±10%	26	0.40	150	1200
KRVA1206G110NXA151ZQHNNNT	11	14	18	±10%	30	0.40	150	1200
KRVA1206G140NXA151ZQHNNNT	14	18	22	±15%	39	0.40	150	1000
KRVA1206G170NXA151ZQHNNNT	17	22	27	±10%	45	0.40	150	990
KRVA1206G200NXA151ZQHNNNT	20	26	33	±10%	54	0.40	150	850
KRVA1206G250NXA151ZQHNNNT	25	30	39	±10%	65	0.40	150	750
KRVA1206G280NXA151ZQHNNNT	28	33	45	±10%	72	0.40	150	720
KRVA1206G300NXA151ZQHNNNT	30	38	47	±10%	77	0.40	150	680
KRVA1206G350NXA151ZQHNNNT	35	45	56	±10%	90	0.40	150	580
KRVA1206G400NXA151ZQHNNNT	40	56	68	±10%	110	0.40	150	420
KRVA1206G500NXA151ZQHNNNT	50	65	82	±10%	135	0.40	150	400
KRVA1206G600NXA151ZQHNNNT	60	85	100	±10%	165	0.40	150	320
KRVA1206G750NXA151ZQHNNNT	75	100	120	±10%	250	0.40	150	220
KRVA1206G2R5NXA201ZQHNNNT	2.5	3.3	5	±20%	10	0.40	200	1900
KRVA1206G4R0NXA201ZQHNNNT	4	5.6	8	±20%	15	0.40	200	1600
KRVA1206G6R0NXA201ZQHNNNT	6	8	12	±10%	20	0.40	200	1300
KRVA1206G9R0NXA201ZQHNNNT	9	12	15	±10%	26	0.40	200	1200

KRVA1206G110NXA201ZQHNNNT	11	14	18	±10%	30	0.40	200	1200
KRVA1206G140NXA201ZQHNNNT	14	18	22	±15%	39	0.40	200	1000
KRVA1206G170NXA201ZQHNNNT	17	22	27	±10%	45	0.40	200	990
KRVA1206G200NXA201ZQHNNNT	20	26	33	±10%	54	0.40	200	850
KRVA1206G250NXA201ZQHNNNT	25	30	39	±10%	65	0.40	200	750
KRVA1206G280NXA201ZQHNNNT	28	33	45	±10%	72	0.40	200	720
KRVA1206G300NXA201ZQHNNNT	30	38	47	±10%	77	0.40	200	680
KRVA1206G350NXA201ZQHNNNT	35	45	56	±10%	90	0.40	200	580
KRVA1206G400NXA201ZQHNNNT	40	56	68	±10%	110	0.40	200	420
KRVA1206G500NXA201ZQHNNNT	50	65	82	±10%	135	0.40	200	400

Notes:

1.Typical leakage at 25℃<50uA, maximum leakage 100uA。

2.In order to satisfy the applications of customer in various fields, the capacitance range can be designed during manufacturing according to the request, please contact our sales department if needed。

Type: 1210～2220 Medium and low voltage , low surge protection varistor type

- ☐ Leadless, size 3225～5650
- ☐ Multilayer ceramic construction
- ☐ Wide operating temperature : -55℃ to+125℃
- ☐ Fast response (≤1ns)
- ☐ High transient current capability
- ☐ Low leakage current

GRACE Varistor Part number	Working voltage		Breakdown voltage		Clamping voltage	Transient energy	Peak current	Capacitance
	AC	DC	@1mA DC		8/20 μs 1A	10/100μs	8/20μs	@ 1kHz
	V_{RMS}(V)	V_{DC}(V)	V_B(V)		Vc(V)	E_T(J)	Ip(A)	C(pF)
KRVA1210G4R0NXA301ZQHNNNT	4	5.6	8	±20%	15.5	1.50	300	1600
KRVA1210G6R0NXA301ZQHNNNT	6	8	12	±10%	25	1.50	300	1600
KRVA1210G110NXA301ZQHNNNT	11	14	18	±10%	35	1.50	300	1500
KRVA1210G140NXA301ZQHNNNT	14	18	22	±10%	39	1.50	300	1500
KRVA1210G170NXA301ZQHNNNT	17	22	27	±10%	45	1.50	300	1500
KRVA1210G200NXA301ZQHNNNT	20	26	33	±10%	54	1.50	300	1400
KRVA1210G250NXA301ZQHNNNT	25	30	39	±10%	65	1.50	300	1300
KRVA1210G280NXA301ZQHNNNT	28	33	45	±10%	72	1.50	300	900
KRVA1210G300NXA301ZQHNNNT	30	38	47	±10%	77	1.50	300	600
KRVA1210G350NXA301ZQHNNNT	35	45	56	±10%	90	1.50	300	500
KRVA1210G400NXA301ZQHNNNT	40	56	68	±10%	110	1.50	300	450
KRVA1210G500NXA301ZQHNNNT	50	65	82	±10%	135	1.50	300	400
KRVA1210G600NXA301ZQHNNNT	60	85	100	±10%	165	1.50	300	300
KRVA1210G750NXA301ZQHNNNT	75	100	120	±10%	250	1.50	300	220
KRVA1210G950NXA301ZQHNNNT	95	120	150	±10%	290	1.50	300	220
KRVA1812G4R0NXA501ZQHNNNT	4	5.6	8	±20%	15	2.50	500	1500
KRVA1812G6R0NXA501ZQHNNNT	6	8	12	±10%	20	2.50	500	1300
KRVA1812G9R0NXA501ZQHNNNT	9	12	15	±10%	26	2.50	500	1200
KRVA1812G110NXA501ZQHNNNT	11	14	18	±10%	30	2.50	500	1200
KRVA1812G140NXA501ZQHNNNT	14	18	22	±10%	35	2.50	500	1600
KRVA1812G170NXA501ZQHNNNT	17	22	27	±10%	45	1.50	500	1550
KRVA1812G200NXA501ZQHNNNT	20	26	33	±10%	45	1.00	500	1500
KRVA1812G250NXA501ZQHNNNT	25	30	39	±10%	65	1.00	500	1400
KRVA1812G300NXA501ZQHNNNT	30	38	47	±10%	77	1.00	500	1300
KRVA1812G350NXA501ZQHNNNT	35	45	56	±10%	90	1.00	500	1200
KRVA1812G400NXA501ZQHNNNT	40	56	68	±10%	110	2.00	500	1100
KRVA1812G500NXA501ZQHNNNT	50	65	82	±10%	135	2.00	500	1000
KRVA1812G600NXA501ZQHNNNT	60	85	100	±10%	160	2.00	500	900
KRVA1812G750NXA501ZQHNNNT	75	100	120	±10%	250	2.50	500	800
KRVA2220G4R0NXA122TWSNNNT	4	5.6	8	±20%	15.5	2.00	1200	18000
KRVA2220G110NXA122TWSNNNT	11	14	18	±10%	30	5.40	1200	4000
KRVA2220G140NXA122TWSNNNT	14	18	24	±10%	39	5.80	1200	4000
KRVA2220G180NXA122TWSNNNT	18	22	27	±10%	45	7.20	1200	3500
KRVA2220G200NXA122TWSNNNT	20	26	33	±10%	54	7.80	1200	3500

KRVA2220G250NXA122TWSNNNT	25	30	39	±10%	65	9.60	1200	3000
KRVA2220G300NXA122TWSNNNT	30	38	47	±10%	77	12.0	1200	2500
KRVA2220G350NXA122TWSNNNT	35	45	56	±10%	85	12.0	1200	2000
KRVA2220G400NXA102TWSNNNT	40	56	68	±10%	110	8.80	1000	2000
KRVA2220G500NXA801TWSNNNT	50	65	82	±10%	135	5.60	800	2000
KRVA2220G600NXA801TWSNNNT	60	85	100	±10%	160	5.00	800	1000
KRVA2220G750NXA801TWSNNNT	75	100	120	±10%	200	4.50	800	1000

Notes:

1.Typical leakage at 25℃<50uA, maximum leakage 100uA。

2.In order to satisfy the applications of customer in various fields, the capacitance range can be designed during manufacturing according to the request, please contact our sales department if needed。

Type: 0805～1206 Medium and low voltage , high surge protection varistor type

☐ Leadless, size 1610~3216
☐ Multilayer ceramic construction
☐ Wide operating temperature : -55℃ to+125℃
☐ Fast response（≤1ns）
☐ High transient current capability
☐ Low leakage current

GRACE Varistor Part number	Working voltage		Breakdown voltage		Clamping voltage	Transient energy	Peak current/ Surge voltage	Capacitance
	AC	DC	@1mA DC		8/20 μs 1A	10/100μs	8/20μs/ （1.2/50μs, 2Ω	@ 1kHz
	V_{RMS} (V)	V_{DC} (V)	V_B(V)		Vc(V)	E_T(J)	Ip(A) /Vsurge	C(pF)
KRVA0805H2R5NXA121ZQHNNNT	2.5	3.3	5	±15%	12	0.10	120	800
KRVA0805H4R0NXA121ZQHNNNT	4	5.5	8	±10%	18	0.10	120	850
KRVA0805H6R0NXA101ZQHNNNT	6	9	12	±10%	20	0.10	100	900
KRVA0805H110NXA101ZQHNNNT	11	14	18	±10%	30	0.10	100	800
KRVA0805H140NXA101ZQHNNNT	14	18	24	±10%	39	0.20	100	600
KRVA0805H170NXA101ZQHNNNT	17	22	27	±10%	44	0.20	100	520
KRVA0805H200NXA101ZQHNNNT	20	26	33	±10%	54	0.20	100	450
KRVA0805H250NXA101ZQHNNNT	25	30	39	±10%	65	0.20	100	400
KRVA0805H300NXA101ZQHNNNT	30	38	47	±10%	77	0.20	100	330
KRVA0805H350NXA101ZQHNNNT	35	45	56	±10%	90	0.20	100	230
KRVA0805H400NXA101ZQHNNNT	40	56	68	±10%	120	0.20	100	120
KRVA0805H500NXA101ZQHNNNT	50	65	82	±10%	135	0.20	100	350
KRVA0805H600NXA800ZQHNNNT	60	85	100	±10%	165	0.20	80	300
KRVA0805H750NXA800ZQHNNNT	75	100	120	±10%	250	0.20	80	250
KRVA1206H2R5NXA501GDKNNNT	2.5	3.3	5	±15%	12	0.20	500	900
KRVA1206H4R0NXA501DGKNNNT	4	5.5	8	±10%	18	0.20	500	1500
KRVA1206H6R0NXA501DGKNNNT	6	9	12	±10%	20	0.30	500	1300
KRVA1206H110NXA501DGKNNNT	11	14	18	±10%	30	0.40	500	1200
KRVA1206H140NXA501DGKNNNT	14	18	24	±10%	39	0.40	500	1000
KRVA1206H170NXA501DGKNNNT	17	22	27	±10%	44	0.40	500	1000
KRVA1206H200NXA501DGKNNNT	20	26	33	±10%	54	0.50	500	990
KRVA1206H250NXA501DGKNNNT	25	30	39	±10%	65	0.50	500	950
KRVA1206H300NXA501DGKNNNT	30	38	47	±10%	77	0.50	500	880
KRVA1206H350NXA501DGKNNNT	35	45	56	±10%	90	0.50	500	500
KRVA1206H400NXA501DGKNNNT	40	56	68	±10%	120	0.50	500	400
KRVA1206H500NXA501DGKNNNT	50	65	82	±10%	135	0.50	500	350
KRVA1206H600NXA501DGKNNNT	60	85	100	±10%	165	0.50	500	300
KRVA1206H750NXA501DGKNNNT	75	100	120	±10%	250	0.50	500	250

Notes:

1.Typical leakage at 25℃<50uA, maximum leakage 100uA。

2.In order to satisfy the applications of customer in various fields, the capacitance range can be designed during manufacturing according to the request, please contact our sales department if needed。

Type: 1210～2220 Medium and low voltage , high surge protection varistor type

- ☐ Leadless, size 3225~5650
- ☐ Multilayer ceramic construction
- ☐ Wide operating temperature : -55℃ to+125℃
- ☐ Fast response (≤1ns)
- ☐ High transient current capability
- ☐ Low leakage current

KRVA1210H4R0NXA152DGKNNNT	4	5.6	8	±20%	15.5	1.50	1500	1600
KRVA1210H6R0NXA152DGKNNNT	6	8	12	±10%	25	1.50	1500	1600
KRVA1210H110NXA152DGKNNNT	11	14	18	±10%	35	1.50	1500	1500
KRVA1210H140NXA152DGKNNNT	14	18	22	±10%	39	1.50	1500	1500
KRVA1210H170NXA152DGKNNNT	17	22	27	±10%	45	1.50	1500	1500
KRVA1210H200NXA152DGKNNNT	20	26	33	±10%	54	1.50	1500	1400
KRVA1210H250NXA152DGKNNNT	25	30	39	±10%	65	1.50	1500	1300
KRVA1210H280NXA152DGKNNNT	28	33	45	±10%	72	1.50	1500	900
KRVA1210H300NXA152DGKNNNT	30	38	47	±10%	77	1.50	1500	600
KRVA1210H350NXA152DGKNNNT	35	45	56	±10%	90	1.50	1500	500
KRVA1210H400NXA152DGKNNNT	40	56	68	±10%	110	1.50	1500	450
KRVA1210H500NXA152DGKNNNT	50	65	82	±10%	135	1.50	1500	400
KRVA1210H600NXA102DGKNNTT	60	85	100	±10%	165	1.50	1000	300
KRVA1210H750NXA102DGKNNNT	75	100	120	±10%	250	1.50	1000	220
KRVA1210H950NXA102DGKNNNT	95	120	150	±10%	290	1.50	1000	220
KRVA1812H4R0NXA252DGKNNNT	4	5.6	8	±20%	15	2.50	2500	1500
KRVA1812H6R0NXA252DGKNNNT	6	8	12	±10%	20	2.50	2500	1300
KRVA1812H9R0NXA252DGKNNNT	9	12	15	±10%	26	2.50	2500	1200
KRVA1812H110NXA252DGKNNNT	11	14	18	±10%	30	2.50	2500	1200
KRVA1812H140NXA252DGKNNNT	14	18	22	±10%	35	2.50	2500	1600
KRVA1812H170NXA252DGKNNNT	17	22	27	±10%	45	1.50	2500	1550
KRVA1812H200NXA252DGKNNNT	20	26	33	±10%	45	1.00	2500	1500
KRVA1812H250NXA222DGKNNNT	25	30	39	±10%	65	1.00	2200	1400
KRVA1812H300NXA222DGKNNNT	30	38	47	±10%	77	1.00	2200	1300
KRVA1812H350NXA202DGKNNNT	35	45	56	±10%	90	1.00	2000	1200
KRVA1812H400NXA202DGKNNNT	40	56	68	±10%	110	2.00	2000	1100
KRVA1812H500NXA202DGKNNNT	50	65	82	±10%	135	2.00	2000	1000
KRVA1812H600NXA152DGKNNNT	60	85	100	±10%	160	2.00	1500	900
KRVA1812H750NXA152DGKNNNT	75	100	120	±10%	250	2.50	1500	800
KRVA2220H4R0NXA802DGKNNNT	4	5.6	8	±20%	15.5	2.00	8000	18000
KRVA2220H110NXA802DGKNNNT	11	14	18	±10%	30	5.40	8000	4000
KRVA2220H140NXA802DGKNNNT	14	18	24	±10%	39	5.80	8000	4000
KRVA2220H180NXA802DGKNNNT	18	22	27	±10%	45	7.20	8000	3500
KRVA2220H200NXA802DGKNNNT	20	26	33	±10%	54	7.80	8000	3500
KRVA2220H250NXA802DGKNNNT	25	30	39	±10%	65	9.60	8000	3000
KRVA2220H300NXA802DGKNNNT	30	38	47	±10%	77	12.0	8000	2500
KRVA2220H350NXA802DGKNNNT	35	45	56	±10%	85	12.0	8000	2000
KRVA2220H400NXA802DGKNNNT	40	56	68	±10%	110	8.80	8000	2000
KRVA2220H500NXA602DGKNNNT	50	65	82	±10%	135	5.60	6000	2000
KRVA2220H600NXA602DGKNNNT	60	85	100	±10%	160	5.00	6000	1000

KRVA2220H750NXA452DGKNNNT	75	100	120	±10%	200	4.50	4500	1000

Notes:

1.Typical leakage at 25℃<50uA, maximum leakage 100uA。

2.In order to satisfy the applications of customer in various fields, the capacitance range can be designed during manufacturing according to the request, please contact our sales department if needed。

Type: 0604～1210 High voltage high surge protection varistor type

- ☐ Leadless, size 1610~3225
- ☐ Multilayer ceramic construction
- ☐ Wide operating temperature : -55℃ to+125℃
- ☐ Fast response (≤1ns)
- ☐ High transient current capability
- ☐ Low leakage current

GRACE Varistor Part number	Working voltage		Breakdown voltage		Clamping voltage	Transient energy	Peak current/ Surge voltage	Capacitance
	AC	DC	@1mA DC		8/20 μs 1A	10/100μs	8/20μs/ (1.2/50μs, 2Ω	@ 1kHz
	V_{RMS} (V)	V_{DC} (V)	V_B(V)		Vc(V)	E_T(J)	Ip(A) /Vsurge	C(pF)
KRVA0604G171NXAXXXTWSNNNT	175	225	270	±10%	450	0.10	40	30
KRVA0806G151NXA101GZCNNNT	150	200	240	±10%	390	0.30	100	100
KRVA0806H151NXA201TWSNNNT	150	200	240	±10%	390	0.30	200	100
KRVA0806G171NXA101GZCNNNT	175	225	270	±10%	450	0.30	100	60
KRVA0806H171NXA201TWSNNNT	175	225	270	±10%	450	0.30	200	60
KRVA0806G271NXA400GZCNNNT	275	350	430	±10%	705	0.30	40	40
KRVA0806H271NXA101TWSNNNT	275	350	430	±10%	705	0.30	100	40
KRVA0806G301NXA400GZCNNNT	300	380	470	±10%	775	0.30	40	40
KRVA0806H301NXA101TWSNNNT	300	380	470	±10%	775	0.30	100	40
KRVA1206G141NXV501GZCNNNT	140	180	220	±10%	380	0.60	V500	100
KRVA1206G151NXV501GZCNNNT	150	200	240	±10%	415	0.60	V500	100
KRVA1206H151NXA351TWSNNNT	150	200	240	±10%	415	0.60	350	100
KRVA1206G171NXV501GZCNNNT	175	225	270	±10%	450	0.60	V500	60
KRVA1206G191NXV501GZCNNNT	190	240	300	±10%	495	0.60	V500	50
KRVA1206G201NXV501GZCNNNT	200	260	330	±10%	545	0.60	V500	50
KRVA1206G231NXV501GZCNNNT	230	280	360	±10%	595	0.60	V500	50
KRVA1206G251NXV501GZCNNNT	250	300	390	±10%	650	0.60	V500	50
KRVA1206G271NXV501GZCNNNT	275	350	430	±10%	705	0.60	V500	50
KRVA1206H271NXA201TWSNNNT	275	350	430	±10%	705	0.60	200	50
KRVA1206G271NXA101SZSNNNT	275	350	430	±10%	705	0.60	100	50
KRVA1206G301NXV501GZCNNNT	300	380	470	±10%	775	0.60	V500	50
KRVA1206H301NXA201TWSNNNT	300	380	470	±10%	775	0.60	200	50
KRVA1206G301NXA101SZSNNNT	300	380	470	±10%	775	0.60	100	50
KRVA1206G321NXV501GZCNNNT	320	420	510	±10%	850	0.60	V500	50
KRVA1206G351NXV501GZCNNNT	350	460	560	±10%	925	0.60	V500	40
KRVA1210G141NXV751GZCNNNT	140	180	220	±10%	380	0.60	V750	100
KRVA1210G141NXA351TWSNNNT	140	180	220	±10%	380	0.60	350	100
KRVA1210G151NXV751GZCNNTN	150	200	240	±10%	415	0.60	V750	100
KRVA1210G151NXA351TWSNNNT	150	200	240	±10%	415	0.60	350	100
KRVA1210G171NXA251GZCNNNT	175	225	270	±10%	450	0.80	250	100

KRVA1210G171NXA401GZCNNNT	175	225	270	±10%	450	0.80	400	100
KRVA1210H171NXA801TWSNNNT	175	225	270	±10%	450	0.80	800	100
KRVA1210G201NXV751GZCNNNT	200	260	330	±10%	705	0.60	V750	50
KRVA1210G201NXA200GZCNNNT	200	260	330	±10%	705	0.60	200	50
KRVA1210G231NXV751GZCNNNT	230	280	360	±10%	595	0.60	V750	50
KRVA1210G251NXV751GZCNNNT	250	300	390	±10%	650	0.60	V750	50
KRVA1210G251NXA201TWSNNNT	250	310	390	±10%	650	0.80	200	90
KRVA1210G271NXV751GZCNNNT	275	350	430	±10%	705	0.80	V750	80
KRVA1210G271NXA201SZSNNNT	275	350	430	±10%	705	0.80	200	80
KRVA1210G271NXA501TWSNNNT	275	350	430	±10%	705	0.80	500	80
KRVA1210G301NXV751GZCNNNT	300	380	470	±10%	775	0.80	V750	80
KRVA1210G301NXA201SZSNNNT	300	380	470	±10%	775	0.80	200	80
KRVA1210G301NXA501TWSNNNT	300	380	470	±10%	775	0.80	500	80
KRVA1210G321NXV751GZCNNNT	320	420	510	±10%	850	0.80	V750	70
KRVA1210G321NXA351TWSNNNT	320	420	510	±10%	850	0.80	350	70
KRVA1210G351NXV751GZCNNNT	350	460	560	±10%	925	0.80	V750	60

Notes:

1.Typical leakage at 25℃<50uA, maximum leakage 100uA。

2.In order to satisfy the applications of customer in various fields, the capacitance range can be designed during manufacturing according to the request, please contact our sales department if needed。

3.The peak current can be adjust according to the request of customer

Type: 1812～4840 High voltage high surge protection varistor type

- ☐ Leadless, size 4532~12CL
- ☐ Multilayer ceramic construction
- ☐ Wide operating temperature : -55℃ to+125℃
- ☐ Fast response (≤1ns)
- ☐ High transient current capability
- ☐ Low leakage current

GRACE Varistor Part number	Working voltage		Breakdown voltage		Clamping voltage	Transient energy	Peak current/ Surge voltage	Capacitance
	AC	DC	@1mA DC		8/20 μs 1A	10/100μs	8/20μs/ (1.2/50μs, 2Ω	@ 1kHz
	V_{RMS} (V)	V_{DC} (V)	V_B(V)		Vc(V)	E_T(J)	Ip(A) /Vsurge	C(pF)
KRVA1812G171NXA401GZCNNNT	175	225	270	±10%	450	0.90	400	100
KRVA1812G171NXA102TWSNNNT	175	225	270	±10%	450	0.90	1000	100
KRVA1812G171NXA202TWSNNNT	175	225	270	±10%	450	0.90	2000	100
KRVA1812G271NXA401GZCNNNT	275	350	430	±10%	705	0.90	400	80
KRVA1812G271NXA801TWSNNNT	275	350	430	±10%	705	0.90	800	80
KRVA1812G271NXA102TWSNNNT	275	350	430	±10%	705	0.90	1000	80
KRVA1812G301NXA401GZCNNNT	300	380	470	±10%	775	0.90	400	60
KRVA1812G301NXA801TWSNNNT	300	380	470	±10%	775	0.90	800	60
KRVA1812G301NXA102TWSNNNT	300	380	470	±10%	775	0.90	1000	60
KRVA1812G321NXA401GZCNNNT	320	420	510	±10%	850	0.90	400	50
KRVA1812G321NXA801TWSNNNT	320	420	510	±10%	850	0.90	800	50
KRVA1812G351NXA401GZCNNNT	350	460	560	±10%	925	0.90	400	50
KRVA1812G351NXA801TWSNNNT	350	460	560	±10%	925	0.90	800	50
KRVA2220G271NXA701GZCNNNT	275	350	430	±10%	710	2.00	700	380
KRVA2220G271NXA801TWSNNNT	275	350	430	±10%	710	2.00	800	380
KRVA2220G271NXA102TWSNNNT	275	350	430	±10%	710	2.00	1000	380
KRVA2220G301NXA701GZCNNNT	300	380	470	±10%	775	2.00	700	250
KRVA2220G301NXA801TWSNNNT	300	380	470	±10%	775	2.00	800	250
KRVA2220G301NXA102TWSNNNT	300	380	470	±10%	775	2.00	1000	250
KRVA2220G301NXA182TWSNNNT	300	380	470	±10%	775	2.00	1800	250
KRVA2220G321NXA801GZCNNNT	320	420	510	±10%	850	1.00	800	180
KRVA2220G321NXA801GZCNNNT	350	460	560	±10%	925	1.00	800	120
KRVA3220G750NXA501TWSNNNT	75	100	120	±10%	200	3.00	500	450
KRVA3220G151NXA501TWSNNNT	150	200	240	±10%	360	3.00	500	300
KRVA3220G171NXA501TWSNNNT	175	225	270	±10%	380	3.00	500	250
KRVA3220G251NXA501TWSNNNT	250	300	390	±10%	650	3.00	500	120
KRVA3220G271NXA502TWSNNNT	275	350	430	±10%	710	4.50	500	100
KRVA3220G301NXA501TWSNNNT	300	380	470	±10%	775	5.00	500	80
KRVA3225G271NXA502ZQHNNNT	275	350	430	±10%	710	4.50	500	100
KRVA3225G301NXA501ZQHNNNT	300	380	470	±10%	775	5.00	500	80

KRVA4032G750NXA501ZQHNNNT	75	100	120	±10%	200	5.00	500	500
KRVA4032G251NXA501ZQHNNNT	250	300	390	±10%	650	5.00	500	200
KRVA4032G271NXA501ZQHNNNT	275	350	430	±10%	710	5.00	500	160
KRVA4032G301NXA501ZQHNNNT	300	380	470	±10%	775	5.00	500	135
KRVA4840G750NXA501ZQHNNNT	75	100	120	±10%	200	5.00	500	350
KRVA4840G251NXA501ZQHNNNT	250	300	390	±10%	650	5.00	500	320
KRVA4840G271NXA451ZQHNNNT	275	350	430	±10%	710	5.00	450	180
KRVA4840G301NXA451ZQHNNNT	300	380	470	±10%	775	5.00	450	150

Notes:

1.Typical leakage at 25℃<50uA, maximum leakage 100uA。

2.In order to satisfy the applications of customer in various fields, the capacitance range can be designed during manufacturing according to the request, please contact our sales department if needed。

3. The peak current can be adjust according to the request of customer