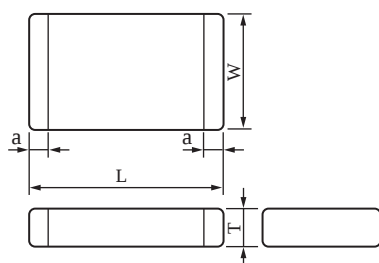


● Chip Type For Direct Surface Mounting (5C and 7C Type)

Operating Temperature Range: -40 ~ +125°C
Storage Temperature Range: -50 ~ +150°C

Model Number	Maximum Applied Voltage (Continuous)		Maximum Peak Current (8/20μSec.)	Maximum Energy Rating (2mSec.)	Rated Wattage	Maximum Clamping Voltage		Varistor Voltage at V0.1mA	T±1
	Acrms(V)	DC(V)	(A)	(J)	(W)	Ip(A)	Vc (V)	(V)	(mm)
TNR5C220K	14	18	25/2 times	0.16	0.005	0.5	48	22 (20~ 24)	1.5
TNR5C270K	17	22		0.20			60	27 (24~ 30)	
TNR5C330K	20	26		0.24			73	33 (30~ 36)	
TNR5C390K	25	30		0.32			86	39 (35~ 43)	
TNR5C470K	30	37		0.34			104	47 (42~ 52)	
TNR5C560K	35	44	100/2 times	0.37	0.05	2.5	123	56 (50~ 62)	2.0
TNR5C680K	40	55		0.43			150	68 (61~ 75)	
TNR5C820K	50	65		0.65			145	82 (74~ 90)	
TNR5C101K	60	85		0.65			175	100 (90~110)	
TNR5C121K	75	100		0.65			210	120 (108~132)	
TNR5C151K	95	125	100/2 times	1.0	0.05	2.5	260	150 (135~165)	1.5
TNR5C181K	110	145		1.0			325	180 (162~198)	
TNR5C201K	130	170		1.0			355	200 (180~220)	
TNR5C221K	140	180		1.5			380	220 (198~242)	
TNR5C241K	150	200		1.5			415	240 (216~264)	
TNR5C271K	175	225		2.0			475	270 (243~297)	
TNR7C220K	14	18	60/2 times	0.4	0.01	1.0	48	22 (20~ 24)	1.5
TNR7C270K	17	22		0.5			60	27 (24~ 30)	
TNR7C330K	20	26		0.6			73	33 (30~ 36)	
TNR7C390K	25	30		0.8			86	39 (35~ 43)	
TNR7C470K	30	37		1.0			104	47 (42~ 52)	
TNR7C560K	35	44	250/2 times	1.1	0.1	5.0	123	56 (50~ 62)	2.0
TNR7C680K	40	55		1.3			150	68 (61~ 75)	
TNR7C820K	50	65		2.0			145	82 (74~ 90)	
TNR7C101K	60	85		2.0			175	100 (90~110)	
TNR7C121K	75	100		3.0			210	120 (108~132)	
TNR7C151K	95	125	250/2 times	3.0	0.1	5.0	260	150 (135~165)	1.5
TNR7C181K	110	145		4.0			325	180 (162~198)	
TNR7C201K	130	170		5.0			355	200 (180~220)	
TNR7C221K	140	180		5.0			380	220 (198~242)	
TNR7C241K	150	200		5.0			415	240 (216~264)	
TNR7C271K	175	225	250/2 times	6.0	0.1	5.0	475	270 (243~297)	2.0
TNR7C331K	210	270		8.0			600	330 (297~363)	
TNR7C361K	230	300		8.0			620	360 (324~396)	
TNR7C391K	250	320		8.0			675	390 (351~429)	
TNR7C431K	275	350		10.0			745	430 (387~473)	
TNR7C471K	300	385		10.0			810	470 (423~517)	

● Dimensions



Type	L±0.3	W±0.3	a (NOM.)
5C	8.0	6.3	0.8
7C	10.0	8.0	1.0
9C	12.5	10.0	1.0
12C	16.0	12.5	1.0

Unit : mm

● Chip Type For Direct Surface Mounting (9C and 12C Type)

Operating Temperature Range: -40 ~ +125°C

Storage Temperature Range: -50 ~ +150°C

Model Number	Maximum Applied Voltage (Continuous)		Maximum Peak Current (8/20μSec.)	Maximum Energy Rating (2mSec.)	Rated Wattage	Maximum Clamping Voltage		Varistor Voltage at V0.1mA	T±1
	Acrms(V)	DC(V)	(A)	(J)	(W)	Ip(A)	Vc(V)	(V)	(mm)
TNR9C220K	14	18	125/2 times	1.0	0.02	2.0	43	22(20~ 24)	1.5
TNR9C270K	17	22		1.0			53	27(24~ 30)	
TNR9C330K	20	26		1.2			65	33(30~ 36)	
TNR9C390K	25	30		1.5			77	39(35~ 43)	
TNR9C470K	30	37		1.8			93	47(42~ 52)	
TNR9C560K	35	44	600/2 times	2.2	0.2	10.0	110	56(50~ 62)	2.0
TNR9C680K	40	55		2.5			135	68(61~ 75)	
TNR9C820K	50	65		4.0			135	82(74~ 90)	1.5
TNR9C101K	60	85		4.0			164	100(90~110)	
TNR9C121K	75	100		5.0			195	120(108~132)	
TNR9C151K	95	125		6.0			245	150(135~165)	
TNR9C181K	110	145		8.0			295	180(162~198)	
TNR9C201K	130	170	1300/2 times	10.0	0.4	25.0	330	200(180~220)	1.5
TNR9C221K	140	180		10.0			360	220(198~242)	
TNR9C241K	150	200		10.0			390	240(216~264)	
TNR9C271K	175	225		12.0			440	270(243~297)	
TNR9C331K	210	270		15.0			540	330(297~363)	
TNR9C361K	230	300	1300/2 times	16.0	0.4	25.0	590	360(324~396)	2.0
TNR9C391K	250	320		17.0			640	390(351~429)	
TNR9C431K	275	350		20.0			700	430(387~473)	2.5
TNR9C471K	300	385		20.0			765	470(423~517)	
TNR12C220K	14	18	250/2 times	2.0	0.05	5.0	43	22(20~ 24)	1.5
TNR12C270K	17	22		2.5			53	27(24~ 30)	
TNR12C330K	20	26		3.0			65	33(30~ 36)	
TNR12C390K	25	30		3.5			77	39(35~ 43)	
TNR12C470K	30	37		4.5			93	47(42~ 52)	
TNR12C560K	35	44	1300/2 times	5.5	0.4	25.0	110	56(50~ 62)	2.0
TNR12C680K	40	55		6.5			135	68(61~ 75)	
TNR12C820K	50	65		8.0			135	82(74~ 90)	1.5
TNR12C101K	60	85		10.0			165	100(90~110)	
TNR12C121K	75	100		12.0			195	120(108~132)	
TNR12C151K	95	125		16.0			245	150(135~165)	
TNR12C181K	110	145		18.0			295	180(162~198)	
TNR12C201K	130	170	1300/2 times	20.0	0.4	25.0	330	200(180~220)	1.5
TNR12C221K	140	180		25.0			360	220(198~242)	
TNR12C241K	150	200		25.0			390	240(216~264)	
TNR12C271K	175	225		30.0			440	270(243~297)	
TNR12C331K	210	270		35.0			540	330(297~363)	
TNR12C361K	230	300	1300/2 times	35.0	0.4	25.0	590	360(324~396)	2.0
TNR12C391K	250	320		40.0			640	390(351~429)	
TNR12C431K	275	350		45.0			700	430(387~473)	2.5
TNR12C471K	300	385		45.0			765	470(423~517)	

