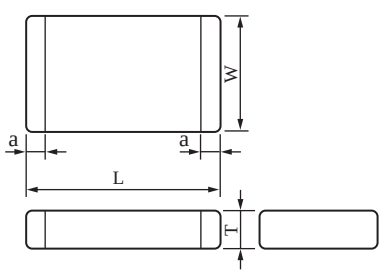
● Chip Type For Direct Surface Mounting (5C and 7C Type)

Operating Temperature Range: –40 ~ +125ºC
Storage Temperature Range: –50 ~ +150ºC

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		0.37			123	56 (50~ 62)	2.0
TNR5C680K	40	55		0.43			150	68 (61~ 75)	
TNR5C820K	50	65	100/2 times	0.65	0.05	2.5	145	82 (74~ 90)	1.5
TNR5C101K	60	85		0.65			175	100 (90~110)	
TNR5C121K	75	100		0.65			210	120 (108~132)	
TNR5C151K	95	125		1.0			260	150 (135~165)	
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		1.1			123	56 (50~ 62)	2.0
TNR7C680K	40	55		1.3			150	68 (61~ 75)	
TNR7C820K	50	65	250/2 times	2.0	0.1	5.0	145	82 (74~ 90)	1.5
TNR7C101K	60	85		2.0			175	100 (90~110)	
TNR7C121K	75	100		3.0			210	120 (108~132)	
TNR7C151K	95	125		3.0			260	150 (135~165)	
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		6.0			475	270 (243~297)	
TNR7C331K	210	270		8.0			600	330 (297~363)	
TNR7C361K	230	300		8.0			620	360 (324~396)	2.0
TNR7C391K	250	320		8.0			675	390 (351~429)	
TNR7C431K	275	350		10.0			745	430 (387~473)	2.5
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

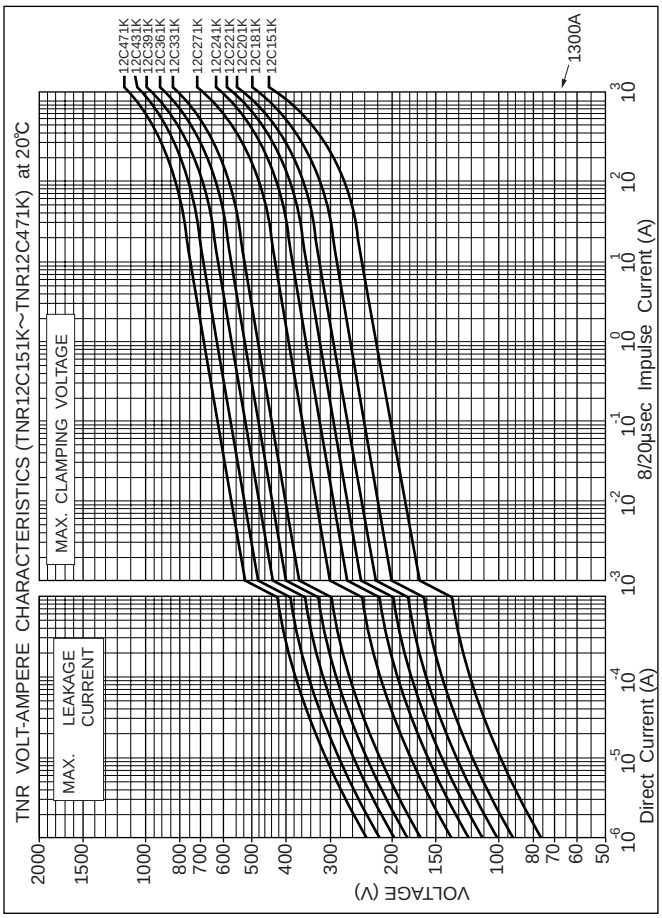
Unit : mm

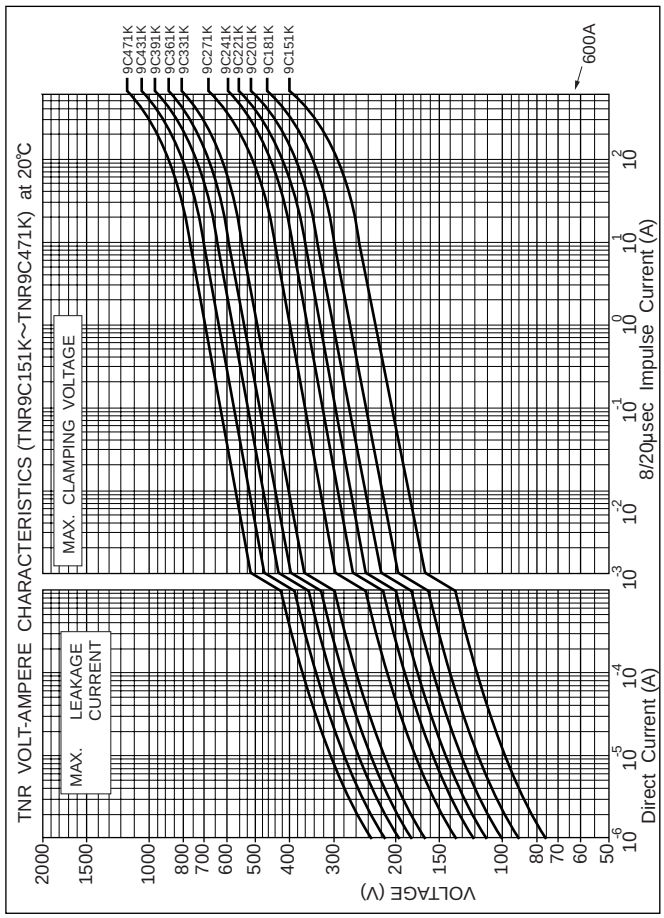
● Chip Type For Direct Surface Mounting (9C and 12C Type)

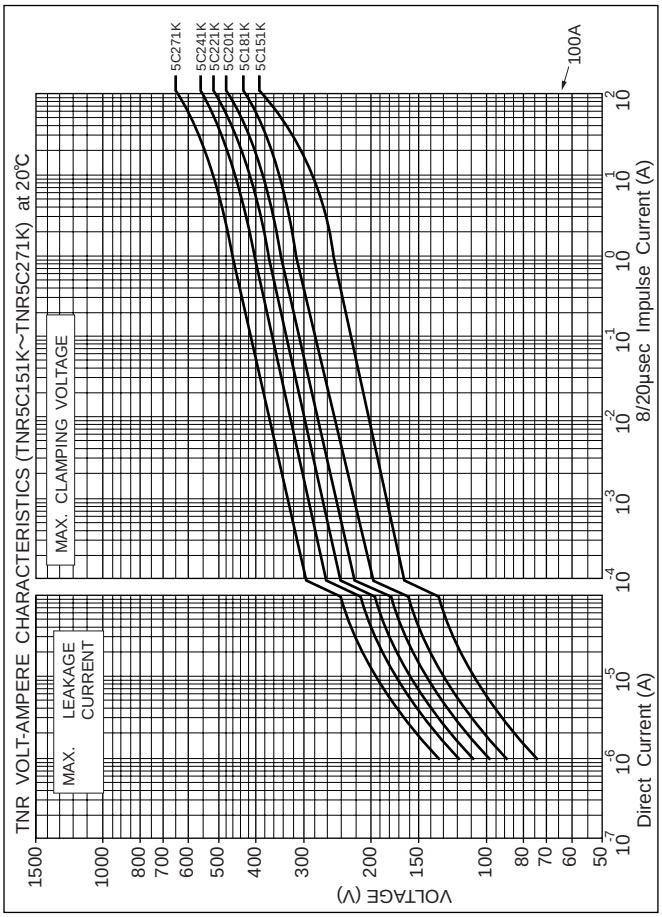
Operating Temperature Range: –40 ~ +125ºC
Storage Temperature Range: –50 ~ +150ºC

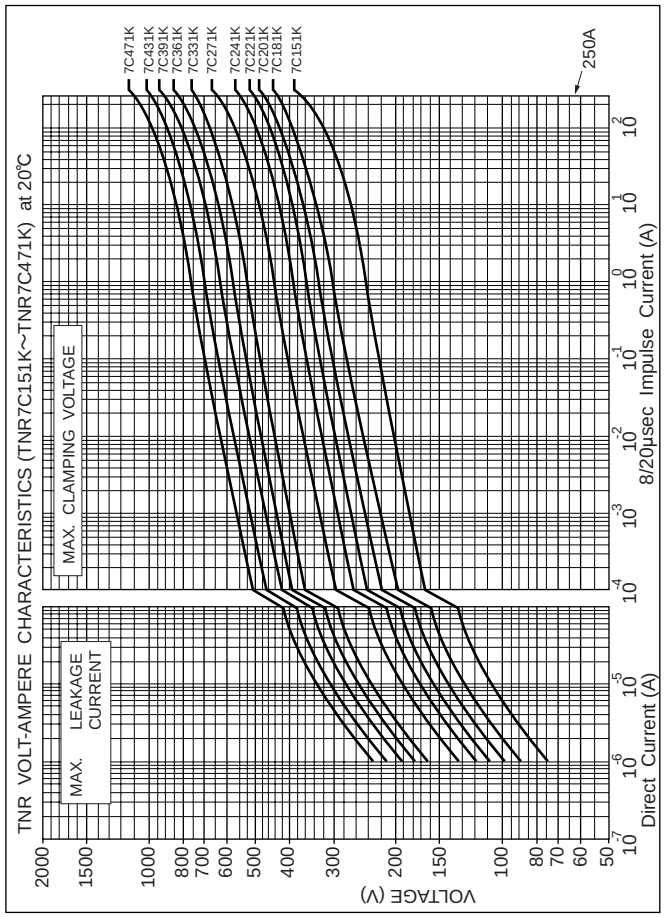
Model Number	Maximum Applied Voltage (Continuous)		Maximum Peak Current (8/20µSec.)	Maximum Energy Rating (2mSec.)	Rated Wattage	Maximum Clamping Voltage		Varistor Voltage at V0.1mA	T±1
	Acrms(V)	DC(V)	(A)	(J)	(W)	Ip(A)	Vc(V)	(V)	(mm)
TNR9C220K	14	18	125/2 times	1.0	0.02	2.0	43	22(20~ 24)	1.5
TNR9C270K	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		2.2			110	56(50~ 62)	2.0
TNR9C680K	40	55		2.5			135	68(61~ 75)	
TNR9C820K	50	65	600/2 times	4.0	0.2	10.0	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		10.0			330	200(180~220)	
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		16.0			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		5.5			110	56(50~ 62)	2.0
TNR12C680K	40	55		6.5			135	68(61~ 75)	
TNR12C820K	50	65	1300/2 times	8.0	0.4	25.0	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		20.0			330	200(180~220)	
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		35.0			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)	

CAT. No. E1006H


TNR VOLT-AMPERE CHARACTERISTICS (TNR12C151K~TNR12C471K) at 20℃
MAX. CLAMPING VOLTAGE
MAX. LEAKAGE CURRENT
12C471K
12C431K
12C391K
12C361K
12C331K
12C271K
12C241K
12C221K
12C201K
12C181K
12C151K
1300A
VOLTAGE (V)
8/20μsec Impulse Current (A)
Direct Current (A)


TNR VOLT-AMPERE CHARACTERISTICS (TNR9C151K~TNR9C471K) at 20℃
MAX. CLAMPING VOLTAGE
MAX. LEAKAGE CURRENT
9C471K
9C431K
9C391K
9C361K
9C331K
9C271K
9C241K
9C221K
9C201K
9C181K
9C151K
600A
VOLTAGE (V)
8/20μsec Impulse Current (A)
Direct Current (A)


TNR VOLT-AMPERE CHARACTERISTICS (TNR5C151K~TNR5C271K) at 20℃
MAX. CLAMPING VOLTAGE
MAX. LEAKAGE CURRENT
5C271K
5C241K
5C221K
5C201K
5C181K
5C151K
100A
VOLTAGE (V)
8/20μsec Impulse Current (A)
Direct Current (A)


TNR VOLT-AMPERE CHARACTERISTICS (TNR7C151K~TNR7C471K) at 20℃
MAX. CLAMPING VOLTAGE
MAX. LEAKAGE CURRENT
7C471K
7C431K
7C391K
7C361K
7C331K
7C271K
7C241K
7C221K
7C201K
7C181K
7C151K
250A
VOLTAGE (V)
8/20μsec Impulse Current (A)
Direct Current (A)