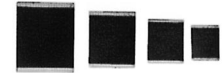


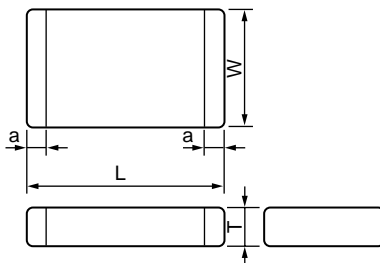
C Series

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


◆ RATINGS

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

Model Number	Maximum Applied Voltage (Continuous)		Maximum Peak Current 8/20 μ Sec. (A)	Maximum Energy 2mSec. (J)	Rated Wattage (W)	Maximum Clamping Voltage		Varistor Voltage at V _{0.1mA} (V)	T \pm 1 (mm)
	AC. (Vrms)	DC. (V)				I _p (A)	V _c (V)		
TNR5C220K	14	18	25/2 times	0.16	0.005	0.5	48	22 (20~ 24)	1.5
TNR5C270K	17	22		60			27 (24~ 30)		
TNR5C330K	20	26		73			33 (30~ 36)		
TNR5C390K	25	30		86			39 (35~ 43)		
TNR5C470K	30	37		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	100/2 times	0.65	0.05	2.5	145	82 (74~ 90)	1.5
TNR5C101K	60	85		175			100 (90~110)		
TNR5C121K	75	100		210			120 (108~132)		
TNR5C151K	95	125		260			150 (135~165)		
TNR5C181K	110	145		325			180 (162~198)		
TNR5C201K	130	170		355			200 (180~220)		
TNR5C221K	140	180		380			220 (198~242)		
TNR5C241K	150	200		415			240 (216~264)		
TNR5C271K	175	225		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		60			27 (24~ 30)		
TNR7C330K	20	26		73			33 (30~ 36)		
TNR7C390K	25	30		86			39 (35~ 43)		
TNR7C470K	30	37		104			47 (42~ 52)		
TNR7C560K	35	44		123			56 (50~ 62)	2.0	
TNR7C680K	40	55	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		175			100 (90~110)		
TNR7C121K	75	100		210			120 (108~132)		
TNR7C151K	95	125		260			150 (135~165)		
TNR7C181K	110	145		325			180 (162~198)		
TNR7C201K	130	170		355			200 (180~220)		
TNR7C221K	140	180		380			220 (198~242)		
TNR7C241K	150	200		415			240 (216~264)		
TNR7C271K	175	225		475			270 (243~297)		
TNR7C331K	210	270		600			330 (297~363)		
TNR7C361K	230	300		620			360 (324~396)	2.0	
TNR7C391K	250	320		675			390 (351~429)		
TNR7C431K	275	350		745			430 (387~473)	2.5	
TNR7C471K	300	385	810	470 (423~517)					

◆ DIMENSIONS [mm]


Type	L \pm 0.3	W \pm 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

◆ Precautions for pattern design and soldering

Do not line under the chip varistors at pattern design.
 TNR C Series is designed for reflow soldering only.
 Peak temperature of reflow soldering profile shall be 220~240°C during 5~10 sec.

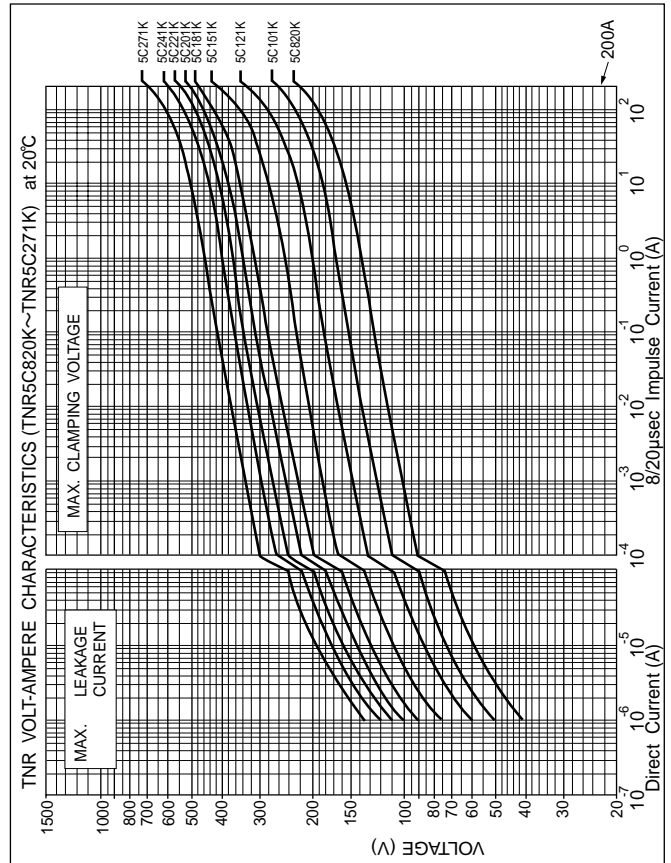
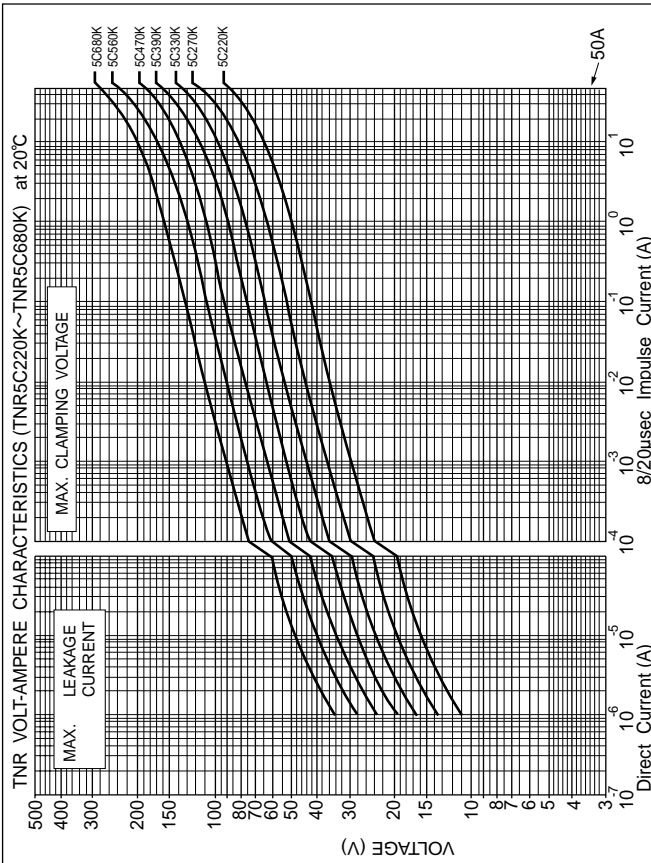
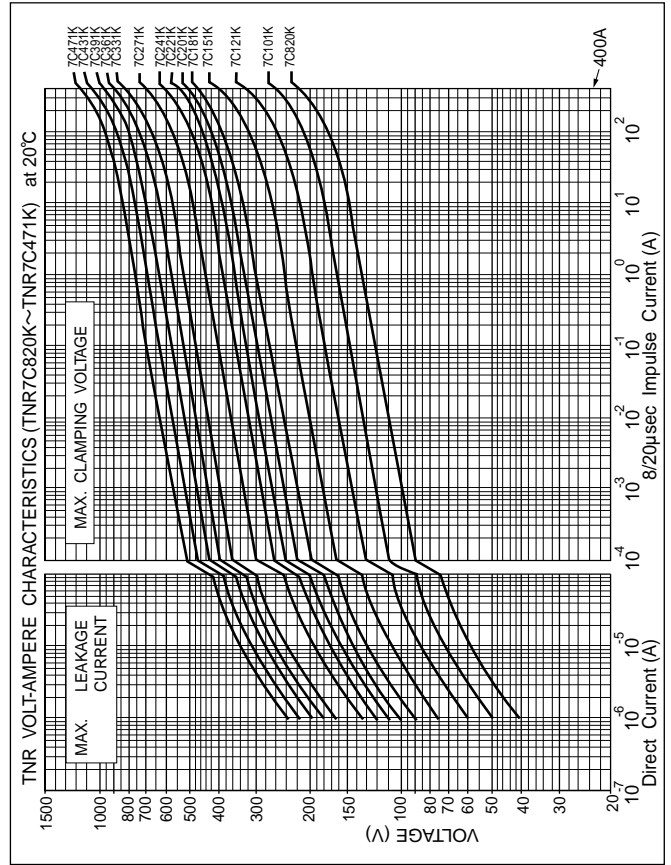
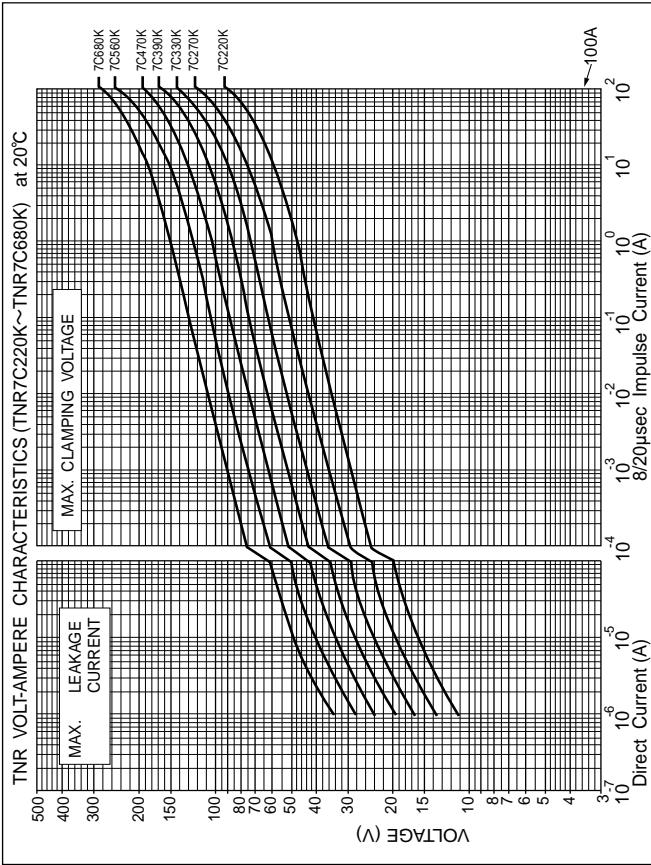


◆Chip Type For Direct Surface Mounting (9C and 12C Type)

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

Model Number	Maximum Applied Voltage (Continuous)		Maximum Peak Current 8/20 μ Sec. (A)	Maximum Energy 2mSec. (J)	Rated Wattage (W)	Maximum Clamping Voltage		Varistor Voltage at 0.1mA (V)	T \pm 1 (mm)
	AC. (Vrms)	DC. (V)				I _p (A)	V _c (V)		
TNR9C220K	14	18	125/2 times	1.0	0.02	2.0	43	22 (20~ 24)	1.5
TNR9C270K	17	22		53			27 (24~ 30)		
TNR9C330K	20	26		65			33 (30~ 36)		
TNR9C390K	25	30		77			39 (35~ 43)		
TNR9C470K	30	37		93			47 (42~ 52)		
TNR9C560K	35	44		110			56 (50~ 62)		
TNR9C680K	40	55	135	68 (61~ 75)	2.0				
TNR9C820K	50	65	600/2 times	4.0	0.2	10.0	135	82 (74~ 90)	1.5
TNR9C101K	60	85		164			100 (90~110)		
TNR9C121K	75	100		195			120 (108~132)		
TNR9C151K	95	125		245			150 (135~165)		
TNR9C181K	110	145		295			180 (162~198)		
TNR9C201K	130	170		330			200 (180~220)		
TNR9C221K	140	180		360			220 (198~242)		
TNR9C241K	150	200		390			240 (216~264)		
TNR9C271K	175	225		440			270 (243~297)		
TNR9C331K	210	270		540			330 (297~363)		
TNR9C361K	230	300		590			360 (324~396)	2.0	
TNR9C391K	250	320		640			390 (351~429)		
TNR9C431K	275	350		700			430 (387~473)	2.5	
TNR9C471K	300	385		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		53			27 (24~ 30)		
TNR12C330K	20	26		65			33 (30~ 36)		
TNR12C390K	25	30		77			39 (35~ 43)		
TNR12C470K	30	37		93			47 (42~ 52)		
TNR12C560K	35	44		110			56 (50~ 62)		
TNR12C680K	40	55	135	68 (61~ 75)	2.0				
TNR12C820K	50	65	1300/2 times	8.0	0.4	25.0	135	82 (74~ 90)	1.5
TNR12C101K	60	85		165			100 (90~110)		
TNR12C121K	75	100		195			120 (108~132)		
TNR12C151K	95	125		245			150 (135~165)		
TNR12C181K	110	145		295			180 (162~198)		
TNR12C201K	130	170		330			200 (180~220)		
TNR12C221K	140	180		360			220 (198~242)		
TNR12C241K	150	200		390			240 (216~264)		
TNR12C271K	175	225		440			270 (243~297)		
TNR12C331K	210	270		540			330 (297~363)		
TNR12C361K	230	300		590			360 (324~396)	2.0	
TNR12C391K	250	320		640			390 (351~429)		
TNR12C431K	275	350		700			430 (387~473)	2.5	
TNR12C471K	300	385		765			470 (423~517)		

◆V-I CURVE



◆V-I CURVE

