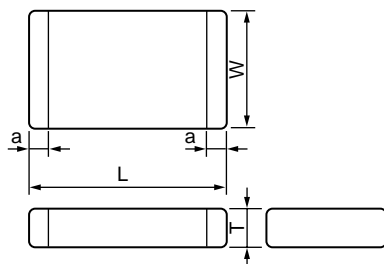


Operating Temperature Range: -40 to +125°C  
Storage Temperature Range: -50 to +150°C

◆STANDARD RATINGS (Type 5C, 7C)

Part Number	Previous Part Number (Just for your reference)	Maximum Ratings					Max. Clamping Voltage		Varistor Voltage V <sub>0.1mA</sub>	T±1 (mm)
		Max. Allowable Voltage		Max. Peak Current	Max. Energy	Rated Wattage	(A)	(V)		
		AC (Vrms)	DC (V)	8/20μs(A)	2ms(J)	(W)			(V)	(mm)
TNC05C-220KB00AAA0	TNR5C220K	14	18	25A/2 times	0.16	0.005	0.5	48	22 (20~24)	1.5
TNC05C-270KB00AAA0	TNR5C270K	17	22		0.20			60	27 (24~30)	
TNC05C-330KB00AAA0	TNR5C330K	20	26		0.24			73	33 (30~36)	
TNC05C-390KB00AAA0	TNR5C390K	25	30		0.32			86	39 (35~43)	
TNC05C-470KB00AAA0	TNR5C470K	30	37		0.34			104	47 (42~52)	
TNC05C-560KB00AAA0	TNR5C560K	35	44	100A/2 times	0.37	0.05	2.5	123	56 (50~62)	2.0
TNC05C-680KB00AAA0	TNR5C680K	40	55		0.43			150	68 (61~75)	
TNC05C-820KB00AAA0	TNR5C820K	50	65	100A/2 times	0.65	0.05	2.5	145	82 (74~90)	1.5
TNC05C-101KB00AAA0	TNR5C101K	60	85		0.65			175	100 (90~110)	
TNC05C-121KB00AAA0	TNR5C121K	75	100		0.65			210	120 (108~132)	
TNC05C-151KB00AAA0	TNR5C151K	95	125		1.0			260	150 (135~165)	
TNC05C-181KB00AAA0	TNR5C181K	110	145		1.0			325	180 (162~198)	
TNC05C-201KB00AAA0	TNR5C201K	130	170		1.0			355	200 (180~220)	
TNC05C-221KB00AAA0	TNR5C221K	140	180		1.5			380	220 (198~242)	
TNC05C-241KB00AAA0	TNR5C241K	150	200		1.5			415	240 (216~264)	
TNC05C-271KB00AAA0	TNR5C271K	175	225		2.0			475	270 (243~297)	
TNC07C-220KB00AAA0	TNR7C220K	14	18		60A/2 times			0.4	0.01	
TNC07C-270KB00AAA0	TNR7C270K	17	22	0.5		60	27 (24~30)			
TNC07C-330KB00AAA0	TNR7C330K	20	26	0.6		73	33 (30~36)			
TNC07C-390KB00AAA0	TNR7C390K	25	30	0.8		86	39 (35~43)			
TNC07C-470KB00AAA0	TNR7C470K	30	37	1.0		104	47 (42~52)			
TNC07C-560KB00AAA0	TNR7C560K	35	44	250A/2 times	1.1	0.1	5.0	123	56 (50~62)	2.0
TNC07C-680KB00AAA0	TNR7C680K	40	55		1.3			150	68 (61~75)	
TNC07C-820KB00AAA0	TNR7C820K	50	65	250A/2 times	2	0.1	5.0	145	82 (74~90)	1.5
TNC07C-101KB00AAA0	TNR7C101K	60	85		2			175	100 (90~110)	
TNC07C-121KB00AAA0	TNR7C121K	75	100		3			210	120 (108~132)	
TNC07C-151KB00AAA0	TNR7C151K	95	125		3			260	150 (135~165)	
TNC07C-181KB00AAA0	TNR7C181K	110	145		4			325	180 (162~198)	
TNC07C-201KB00AAA0	TNR7C201K	130	170		5			355	200 (180~220)	
TNC07C-221KB00AAA0	TNR7C221K	140	180		5			380	220 (198~242)	
TNC07C-241KB00AAA0	TNR7C241K	150	200		5			415	240 (216~264)	
TNC07C-271KB00AAA0	TNR7C271K	175	225		6			475	270 (243~297)	
TNC07C-331KB00AAA0	TNR7C331K	210	270		8			600	330 (297~363)	
TNC07C-361KB00AAA0	TNR7C361K	230	300		8			620	360 (324~396)	
TNC07C-391KB00AAA0	TNR7C391K	250	320		8			675	390 (351~429)	
TNC07C-431KB00AAA0	TNR7C431K	275	350		10			745	430 (387~473)	
TNC07C-471KB00AAA0	TNR7C471K	300	385	10	810	470 (423~517)				

◆DIMENSIONS [mm]



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

◆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 to 240°C during 5 to 10 sec.



C Series

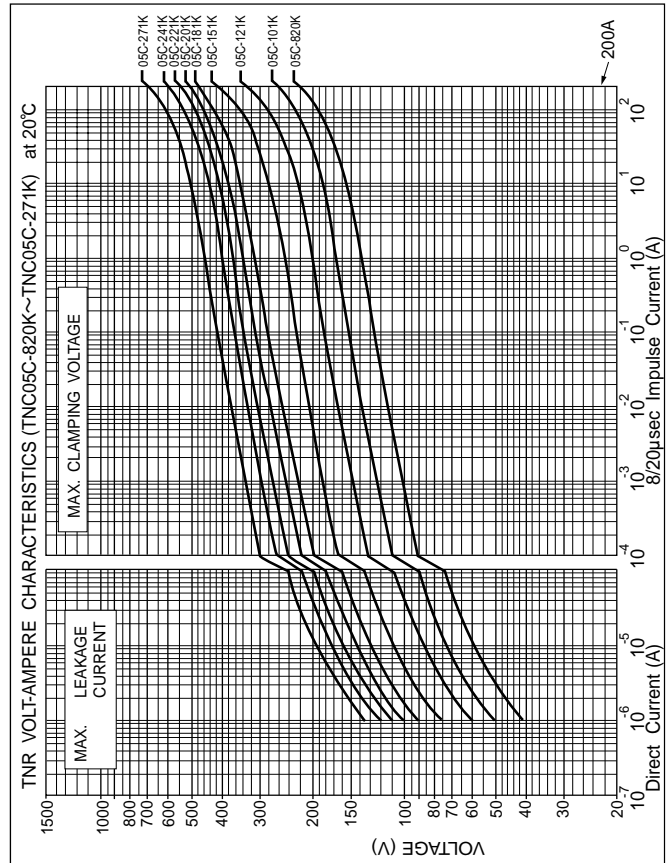
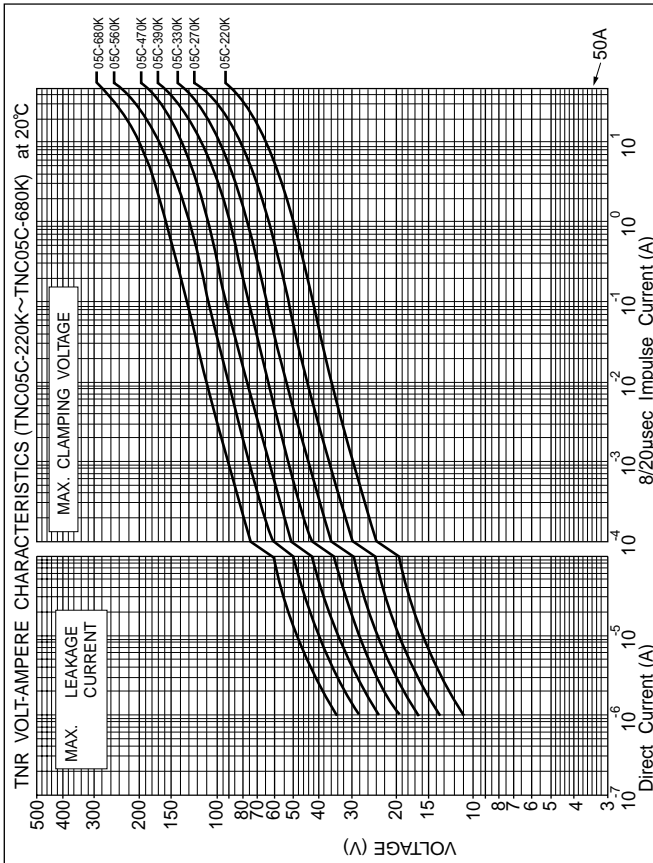
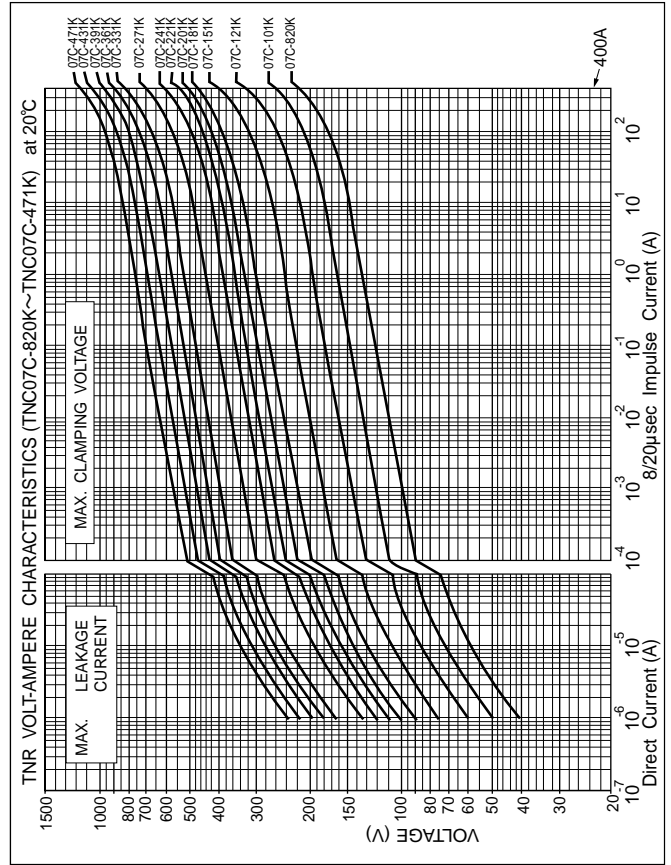
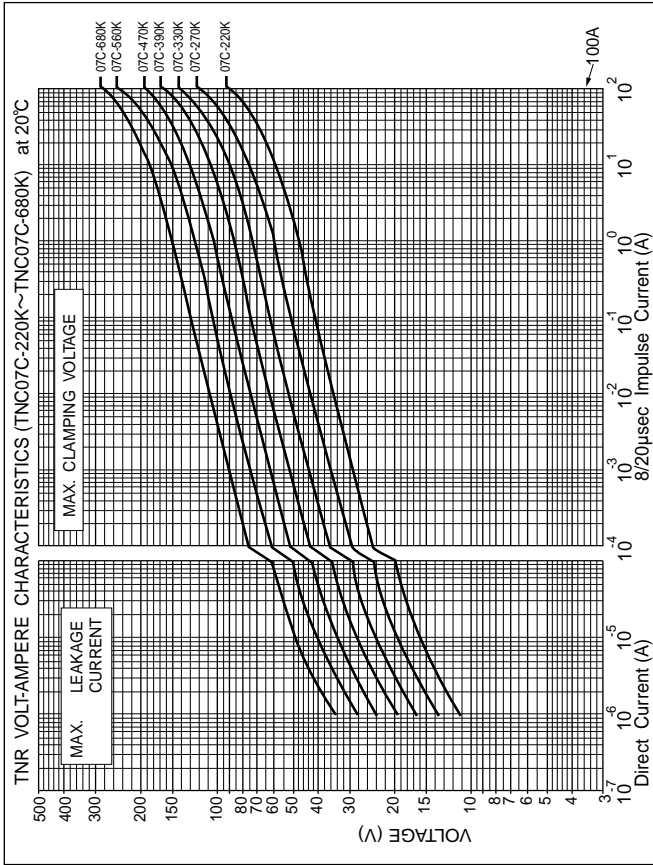
Chip Type for Direct Surface Mounting (9C and 12C Type)

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

◆STANDARD RATINGS (Type 9C, 12C)

Part Number	Previous Part Number (Just for your reference)	Maximum Ratings					Max. Clamping Voltage		Varistor Voltage V <sub>1mA</sub>	T±1	
		Max. Allowable Voltage		Max. Peak Current	Max. Energy	Rated Wattage	(A)	(V)			
		AC (Vrms)	DC (V)	8/20μs(A)	2ms(J)	(W)			(V)	(mm)	
TNC09C-220KB00AAA0	TNR9C220K	14	18	125A/2 times	1.0	0.02	2.0	43	22 ( 20~ 24)	1.5	
TNC09C-270KB00AAA0	TNR9C270K	17	22		1.0			53	27 ( 24~ 30)		
TNC09C-330KB00AAA0	TNR9C330K	20	26		1.2			65	33 ( 30~ 36)		
TNC09C-390KB00AAA0	TNR9C390K	25	30		1.5			77	39 ( 35~ 43)		
TNC09C-470KB00AAA0	TNR9C470K	30	37		1.8			93	47 ( 42~ 52)		
TNC09C-560KB00AAA0	TNR9C560K	35	44	2.2	110	135	56 ( 50~ 62)	2.0			
TNC09C-680KB00AAA0	TNR9C680K	40	55	2.5			68 ( 61~ 75)				
TNC09C-820KB00AAA0	TNR9C820K	50	65	4	600A/2 times	0.2	10.0	135	82 ( 74~ 90)	1.5	
TNC09C-101KB00AAA0	TNR9C101K	60	85	4				164	100 ( 90~110)		
TNC09C-121KB00AAA0	TNR9C121K	75	100	5				195	120 (108~132)		
TNC09C-151KB00AAA0	TNR9C151K	95	125	6				245	150 (135~165)		
TNC09C-181KB00AAA0	TNR9C181K	110	145	8				295	180 (162~198)		
TNC09C-201KB00AAA0	TNR9C201K	130	170	10				330	200 (180~220)		
TNC09C-221KB00AAA0	TNR9C221K	140	180	10				360	220 (198~242)		
TNC09C-241KB00AAA0	TNR9C241K	150	200	10				390	240 (216~264)		
TNC09C-271KB00AAA0	TNR9C271K	175	225	12				440	270 (243~297)		
TNC09C-331KB00AAA0	TNR9C331K	210	270	15				540	330 (297~363)		
TNC09C-361KB00AAA0	TNR9C361K	230	300	16				590	360 (324~396)		2.0
TNC09C-391KB00AAA0	TNR9C391K	250	320	17				640	390 (351~429)		
TNC09C-431KB00AAA0	TNR9C431K	275	350	20				700	430 (387~473)		2.5
TNC09C-471KB00AAA0	TNR9C471K	300	385	20	765	470 (423~517)					
TNC12C-220KB00AAA0	TNR12C220K	14	18	250A/2 times	2.0	0.05	5.0	43	22 ( 20~ 24)	1.5	
TNC12C-270KB00AAA0	TNR12C270K	17	22		2.5			53	27 ( 24~ 30)		
TNC12C-330KB00AAA0	TNR12C330K	20	26		3.0			65	33 ( 30~ 36)		
TNC12C-390KB00AAA0	TNR12C390K	25	30		3.5			77	39 ( 35~ 43)		
TNC12C-470KB00AAA0	TNR12C470K	30	37		4.5			93	47 ( 42~ 52)		
TNC12C-560KB00AAA0	TNR12C560K	35	44	5.5	110	135	56 ( 50~ 62)	2.0			
TNC12C-680KB00AAA0	TNR12C680K	40	55	6.5			68 ( 61~ 75)				
TNC12C-820KB00AAA0	TNR12C820K	50	65	8	1300A/2 times	0.4	25.0	135	82 ( 74~ 90)	1.5	
TNC12C-101KB00AAA0	TNR12C101K	60	85	10				165	100 ( 90~110)		
TNC12C-121KB00AAA0	TNR12C121K	75	100	12				195	120 (108~132)		
TNC12C-151KB00AAA0	TNR12C151K	95	125	16				245	150 (135~165)		
TNC12C-181KB00AAA0	TNR12C181K	110	145	18				295	180 (162~198)		
TNC12C-201KB00AAA0	TNR12C201K	130	170	20				330	200 (180~220)		
TNC12C-221KB00AAA0	TNR12C221K	140	180	25				360	220 (198~242)		
TNC12C-241KB00AAA0	TNR12C241K	150	200	25				390	240 (216~264)		
TNC12C-271KB00AAA0	TNR12C271K	175	225	30				440	270 (243~297)		
TNC12C-331KB00AAA0	TNR12C331K	210	270	35				540	330 (297~363)		
TNC12C-361KB00AAA0	TNR12C361K	230	300	35				590	360 (324~396)		2.0
TNC12C-391KB00AAA0	TNR12C391K	250	320	40				640	390 (351~429)		
TNC12C-431KB00AAA0	TNR12C431K	275	350	45				700	430 (387~473)		2.5
TNC12C-471KB00AAA0	TNR12C471K	300	385	45	765	470 (423~517)					

◆V-I CURVE



◆V-I CURVE

