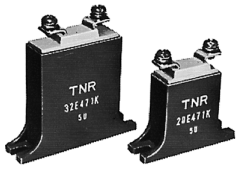
METAL OXIDE VARISTORS TNR™

E Series

RoHS Compliant



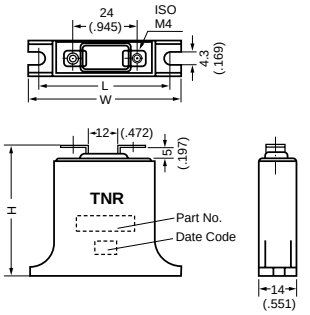
◆FEATURES

- ●Excellent clamping voltage characteristic and fast response time (<50 ns) when subjected to impulse surges.
- ●No follow current.
- ●Any voltage rating within a V1mA range from 200 to 1,100V available. (V1mA : varistor voltage.)
- ●Bilateral and symmetrical V- I characteristics curve.
- ●The TNR can, therefore, be used both in AC and DC circuits, for protection of either positive or negative transients.
- ●Large withstanding peak current 8,000 to 25,000A(8/20μs).

◆APPLICATIONS

- ●Protection of semiconductors such as transistors, diodes, ICs, thyristors, triacs, etc.
- ●Protection of various equipment including:
  - *Broadcasting, communications equipment.
  - *Traffic and railway signal systems.
  - *Automatic control devices for power distribution.
  - *Waterworks.
  - *Home entertainment equipment.
- ●Surge absorption of relays and electromagnetic valves.
- ●Absorption of surges generated within equipment such as TVs.

◆DIMENSIONS [mm (in.)]



Type	W	H	L
20E	48±1 (1.890±0.039)	42±1 (1.653±0.039)	39±1 (1.535±0.039)
32E	60±1 (2.362±0.039)	55±1 (2.165±0.039)	51±1 (2.008±0.039)

Operating Temperature Range -40 to +85℃
Storage Temperature Range -40 to +110℃

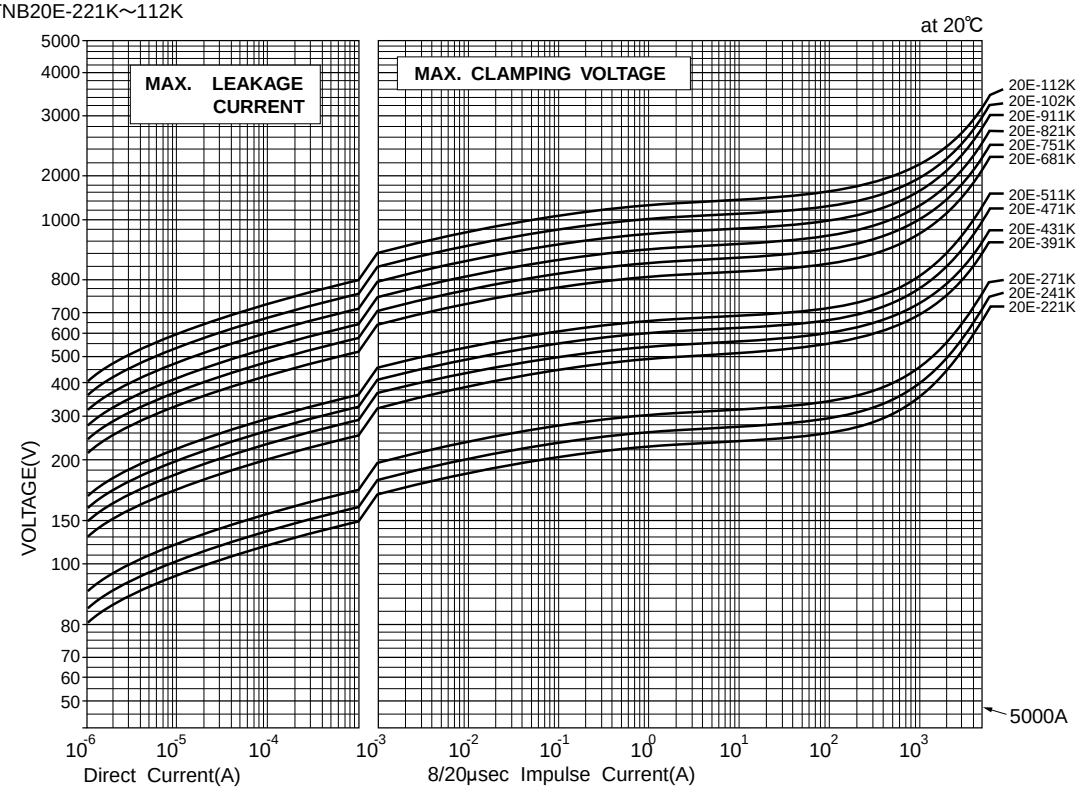
Part Number	Previous Part Number (Just for your reference)	Maximum Ratings					Max. Clamping Voltage	Capacitance Typical @1kHz	Varistor Voltage V1mA
		Max. Allowable Voltage		Max. Peak Current	Max. Energy	Rated Wattage			
20E Series		AC (Vrms)	DC (V)	8/20μs (kA)	2ms (J)	(W)	V100A (V)	(pF)	(V)
TNB20E-221KB00AAA0	TNR20E221K	140	180		80		360	2,200	220 (198～ 242)
TNB20E-241KB00AAA0	TNR20E241K	150	200		95		395	1,500	240 (216～ 264)
TNB20E-271KB00AAA0	TNR20E271K	175	225		100		445	1,400	270 (243～ 297)
TNB20E-391KB00AAA0	TNR20E391K	250	320		130		650	1,200	390 (351～ 429)
TNB20E-431KB00AAA0	TNR20E431K	275	350		140		710	1,000	430 (387～ 473)
TNB20E-471KB00AAA0	TNR20E471K	300	385	8,000A/1 time	150		775	950	470 (423～ 517)
TNB20E-511KB00AAA0	TNR20E511K	315	420		160	0.8	840	930	510 (459～ 561)
TNB20E-681KB00AAA0	TNR20E681K	420	560	10,000A/2 times	175		1,120	850	680 (612～ 748)
TNB20E-751KB00AAA0	TNR20E751K	460	615		190		1,240	800	750 (675～ 825)
TNB20E-821KB00AAA0	TNR20E821K	510	670		215		1,355	700	820 (738～ 902)
TNB20E-911KB00AAA0	TNR20E911K	550	745		240		1,500	600	910 (819～1,001)
TNB20E-102KB00AAA0	TNR20E102K	625	825		245		1,650	400	1,000 (900～1,100)
TNB20E-112KB00AAA0	TNR20E112K	680	895		250		1,815	350	1,100 (990～1,210)
32E Series		AC (Vrms)	DC (V)	8/20μs (kA)	2ms (J)	(W)	V200A (V)	(pF)	(V)
TNB32E-221KB00AAA0	TNR32E221K	140	180		200		360	5,500	220 (198～ 242)
TNB32E-241KB00AAA0	TNR32E241K	150	200		240		395	4,800	240 (216～ 264)
TNB32E-271KB00AAA0	TNR32E271K	175	225		260		445	4,200	270 (243～ 297)
TNB32E-391KB00AAA0	TNR32E391K	250	320		350		650	3,500	390 (351～ 429)
TNB32E-431KB00AAA0	TNR32E431K	275	350		400		710	2,700	430 (387～ 473)
TNB32E-471KB00AAA0	TNR32E471K	300	385	25,000A/1 time	410		775	2,600	470 (423～ 517)
TNB32E-511KB00AAA0	TNR32E511K	315	420		420	1.2	840	2,400	510 (459～ 561)
TNB32E-681KB00AAA0	TNR32E681K	420	560	20,000A/2 times	450		1,120	2,100	680 (612～ 748)
TNB32E-751KB00AAA0	TNR32E751K	460	615		500		1,240	2,000	750 (675～ 825)
TNB32E-821KB00AAA0	TNR32E821K	510	670		545		1,355	1,800	820 (738～ 902)
TNB32E-911KB00AAA0	TNR32E911K	550	745		600		1,500	1,700	910 (819～1,001)
TNB32E-102KB00AAA0	TNR32E102K	625	825		620		1,650	1,000	1,000 (900～1,100)
TNB32E-112KB00AAA0	TNR32E112K	680	895		640		1,815	800	1,100 (990～1,210)

CAT. No. E1006R

E Series

◆V-I CURVE

●TNB20E-221K～112K



●TNB32E-221K～112K