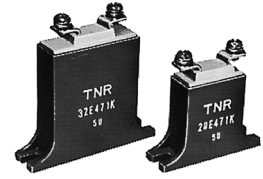


## E Series



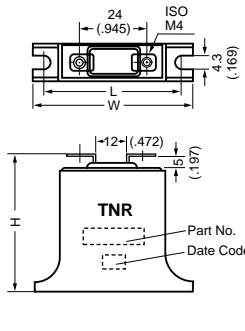
### ◆FEATURES

- Excellent clamping voltage characteristic and fast response time (<50nsec.) when subjected to impulse surges.
- No follow current.
- Any voltage rating within a V1mA range from 200V 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 8,000A-25,000A(8/20µsec.).

### ◆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)

### ◆STANDARD RATINGS

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				
<b>20E Series</b>		AC (Vrms)	DC (V)	8/20µs (kA)	2ms (J)	(W)	V100A (V)	(pF)	(V)	
TNB20E-221KB00AAA0	TNR20E221K	140	180	8,000A/1 time	80	0.8	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		150		775	950	470 (423~ 517)	
TNB20E-511KB00AAA0	TNR20E511K	315	420		160		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)		
<b>32E Series</b>		AC (Vrms)	DC (V)	8/20µs (kA)	2ms (J)	(W)	V200A (V)	(pF)	(V)	
TNB32E-221KB00AAA0	TNR32E221K	140	180	25,000A/1 time	200	1.2	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		410		775	2,600	470 (423~ 517)	
TNB32E-511KB00AAA0	TNR32E511K	315	420		420		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)		

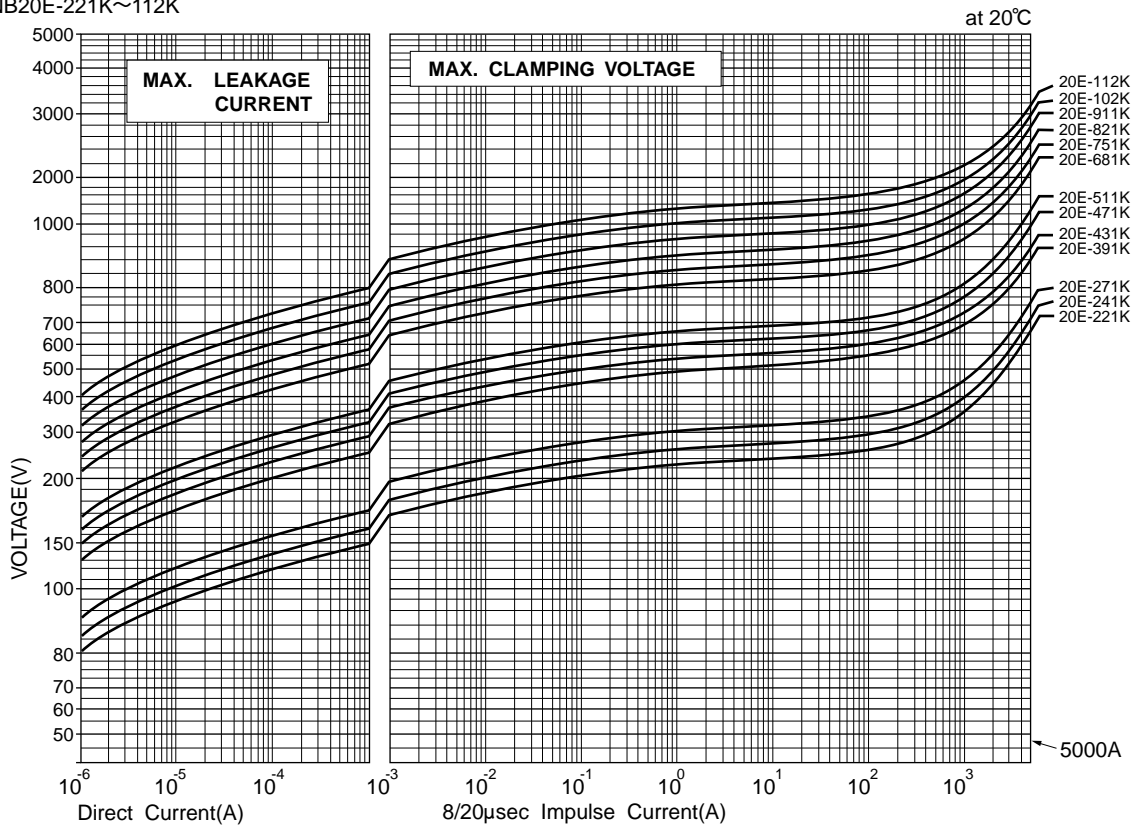
Operating Temperature Range -40 to +85°C Storage Temperature Range -40 to +110°C



# E Series

## ◆V-I CURVE

●TNB20E-221K~112K



●TNB32E-221K~112K

