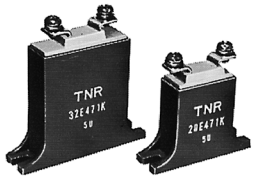
METAL OXIDE VARISTORS TNR®

E Series



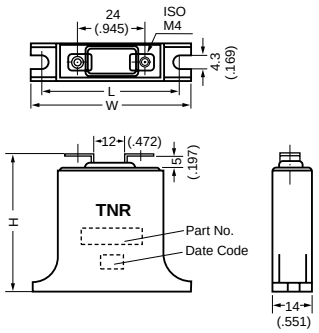
◆FEATURES

- ●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 epuipment such as TVs.

◆DIMENSIONS [mm (in.)]



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

◆RATINGS

Model Number	Varistor Voltage at 1mA DC	Maximum Applied Voltage		Maximum Clamping Voltage	Rated Wattage	Maximum Peak Current	Energy (2mSec.)	Typical Capacitance
20E Series	V_{1mA} (V)	AC. (Vrms)	DC. (V)	V_{100A} (V)	(W)	8/20μsec. (A)	(J)	1kHz (pF)
TNR20E221K	200 (198～ 242)	140	180	360			80	2,200
TNR20E241K	240 (216～ 264)	150	200	395			95	1,500
TNR20E271K	270 (243～ 297)	175	225	445			100	1,400
TNR20E391K	390 (351～ 429)	250	320	650			130	1,200
TNR20E431K	430 (387～ 473)	275	350	710			140	1,000
TNR20E471K	470 (423～ 517)	300	385	775		8,000/1 time	150	950
TNR20E511K	510 (459～ 561)	315	420	840	0.8		160	930
TNR20E681K	680 (612～ 748)	420	560	1,120		5,000/2 times	175	850
TNR20E751K	750 (675～ 825)	460	615	1,240			190	800
TNR20E821K	820 (738～ 902)	510	670	1,355			215	700
TNR20E911K	910 (819～1,001)	550	745	1,500			240	600
TNR20E102K	1,000 (900～1,100)	625	825	1,650			245	400
TNR20E112K	1,100 (990～1,210)	680	895	1,815			250	350
32E Series	V_{1mA} (V)	AC. (Vrms)	DC. (V)	V_{200A} (V)	(W)	8/20μsec. (A)	(J)	1kHz (pF)
TNR32E221K	200 (198～ 242)	140	180	360			200	5,500
TNR32E241K	240 (216～ 264)	150	200	395			240	4,800
TNR32E271K	270 (243～ 297)	175	225	445			260	4,200
TNR32E391K	390 (351～ 429)	250	320	650			350	3,500
TNR32E431K	430 (387～ 473)	275	350	710			400	2,700
TNR32E471K	470 (423～ 517)	300	385	775		25,000/1 time	410	2,600
TNR32E511K	510 (459～ 561)	315	420	840	1.2		420	2,400
TNR32E681K	680 (612～ 748)	420	560	1,120		20,000/2 times	450	2,100
TNR32E751K	750 (675～ 825)	460	615	1,240			500	2,000
TNR32E821K	820 (738～ 902)	510	670	1,355			545	1,800
TNR32E911K	910 (819～1,001)	550	745	1,500			600	1,700
TNR32E102K	1,000 (900～1,100)	625	825	1,650			620	1,000
TNR32E112K	1,100 (990～1,210)	680	895	1,815			640	800

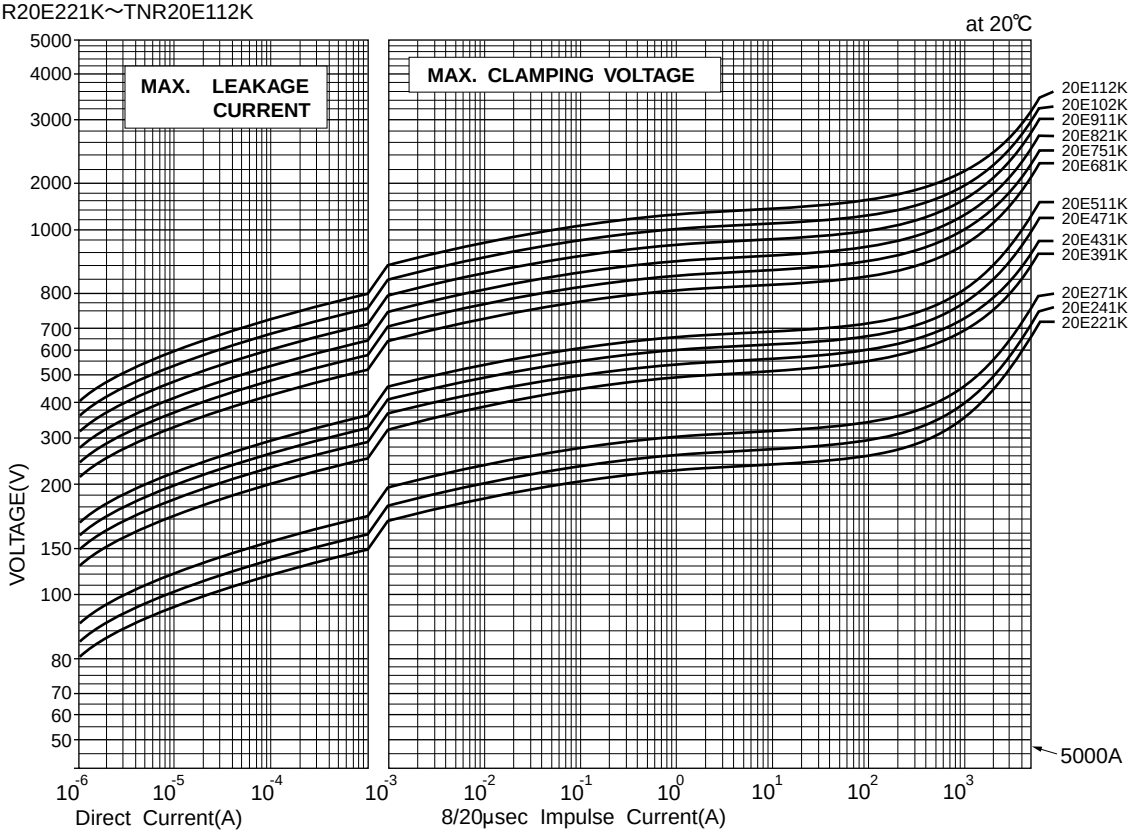
Operating Temperature Range -40～+85℃ Storage Temperature Range -40～+110℃

CAT. No. E1006K

E Series

◆V-I CURVE

●TNR20E221K～TNR20E112K



●TNR32E221K～TNR32E112K