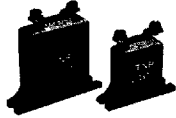


E-SERIES (High Surge Current)



- Operating temperature range: $-40 \sim +85^{\circ}\text{C}$
- Storage temperature range: $-40 \sim +110^{\circ}\text{C}$

E-SERIES (High Surge Current)

● Features

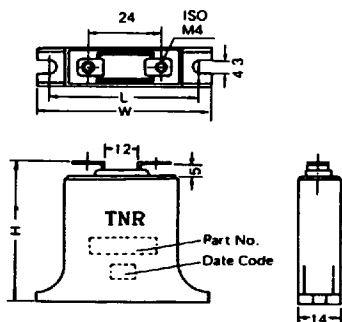
- Excellent clamping voltage characteristic and fast response time ($< 50\text{nsec.}$) when subjected to impulse surges.
- No follow current.
- Any voltage rating within a V1mA range from 220V to 1,100V available. (V1mA: varistor voltage).
- Bilateral and Symmetrical V-I characteristics curve. The TNR can, therefore, be used both in AC and DC circuits, for protection of either positive or negative transients.
- Large withstanding peak current 8000A—25000A ($8/20\mu\text{sec.}$)

● Applications

- Protection of semiconductors such as transistors, diodes, ICs, thyristers, triacs, etc.
- Protection of various electronic equipment including:
 - Broadcasting, communications equipment.
 - Traffic and railway signal systems.
 - Automatic control devices for power distribution.
 - Waterworks.
 - Home entertainment equipment.

Model Number	Varistor Voltage	Maximum Applied Voltage		Maximum Clamping Voltage	Rated Wattage	Maximum Peak Current	Energy (2msec.)	Typical Capacitance
		V1mA (V)	AC Vrms (V)					
TNR20E221K	220(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		8,000	140	1,000
TNR20E471K	470(423~517)	300	385	775		1Time	150	950
TNR20E511K	510(459~561)	315	420	840	0.8		160	930
TNR20E681K	680(612~748)	420	560	1,120		5,000	175	850
TNR20E751K	750(675~825)	460	615	1,240		2Time	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
	V1mA (V)	ACrms (V)	DC (V)	V200A (V)	(W)	8/20 $\mu\text{sec.}$ (A)	(J)	1kHz (pF)
TNR32E221K	220(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		25,000	400	2,700
TNR32E471K	470(423~517)	300	385	775		1Time	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	450	2,100
TNR32E751K	750(675~825)	460	615	1,240		2Times	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

E-SERIES



Series	W	H	L
TNR20E	48 \pm 1	42 \pm 1	39 \pm 1
TNR32E	60 \pm 1	55 \pm 1	51 \pm 1

Unit: mm