

TNR® H SERIES AND HP SERIES

High Energy, Low Varistor Voltage Series

• H Series

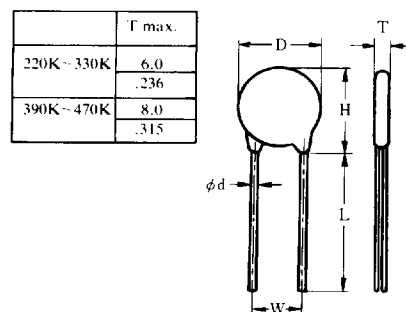
Model Number	Max. Applied Voltage			Max. Energy (20ms)	Max. Clamping Voltage		Varistor Voltage at 1mA DC	The most close GE Model Number (Reference purpose only)
	Continuous		5 Min.		A	V		
	AC V rms	DC V	DC V				J	
TNR9H220K	12	16	24	5	2	43	22 (20~24)	
TNR9H270K	15	19	29			53	27 (24~30)	
TNR9H330K	18	24	36			65	33 (30~36)	
TNR9H390K	22	28	42			77	39 (35~43)	
TNR9H470K	26	34	50			93	47 (42~52)	
TNR12H220K	12	16	24	10	5	43	22 (20~24)	
TNR12H270K	15	19	29			53	27 (24~30)	
TNR12H330K	18	24	36			65	33 (30~36)	
TNR12H390K	22	28	42			77	39 (35~43)	
TNR12H470K	26	34	50			93	47 (42~52)	
TNR15H220K	12	16	24	20	10	43	22 (20~24)	
TNR15H270K	15	19	29			53	27 (24~30)	
TNR15H330K	18	24	36			65	33 (30~36)	
TNR15H390K	22	28	42			77	39 (35~43)	
TNR15H470K	26	34	50			93	47 (42~52)	
TNR23H180S700	10	14	21	80	25	37	18 (14~22)	V18ZA40
TNR23H220K	12	16	24	40		43	22 (20~24)	V24ZA50
TNR23H240S701	14	18	27	100		43	24 (19~26)	
TNR23H270K	15	19	29	40		53	27 (24~30)	V27ZA60
TNR23H270S702	17	22	33	120		50	27 (23~31)	
TNR23H330K	18	24	36	40		65	33 (30~36)	V33ZA70
TNR23H330S703	21	27	40	150		58	33 (29~37)	
TNR23H360S704	23	31	44	160		63	36 (32~40)	V36ZA80
TNR23H390K	22	28	42	40		77	39 (35~43)	
TNR23H470K	26	34	50	40		93	47 (42~52)	

Operating Temp. Range -40 ~ 125°C Storage Temp Range -40 ~ +150°C

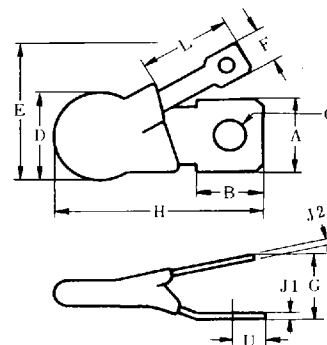
• H Series

Dimension unit: $\frac{mm}{inch}$

Type	D max.	H max.	W $\pm \frac{1}{0.39}$	L min.	ϕd
9H	10.0 .394	14.0 .551	5.0 .197	25.0 .984	0.5 .020
12H	14.0 .551	17.0 .669	7.5 .295	25.0 .984	0.8 .031
15H	17.0 .669	20.0 .787	7.5 .295	30.0 1.18	0.8 .031
23H	24.0 .945	28.0 1.10	10.0 .394	30.0 1.18	0.8 .031



• HP Series



• HP Series

Model Number	Maximum Applied Voltage			Maximum Energy (200ms)	Maximum Clamping Voltage	Varistor Voltage at 1mA DC	
	Continuous		5 Minutes				
	AC Vrms	DC V	DC V				
TNR12HP220K	12	16	24	100	5	43	22(20~24)
TNR12HP270K	15	19	29			53	27(24~30)
TNR12HP330K	18	24	36			65	33(30~36)
TNR12HP390K	22	28	42			77	39(35~43)
TNR12HP470K	26	34	50			93	47(42~52)
TNR15HP220K	12	16	24	200	10	43	22(20~24)
TNR15HP270K	15	19	29			53	27(24~30)
TNR15HP330K	18	24	36			65	33(30~36)
TNR15HP390K	22	28	42			77	39(35~43)
TNR15HP470K	26	34	50			93	47(42~52)
TNR23HP220K	12	16	24	400	25	43	22(20~24)
TNR23HP270K	15	19	29			53	27(24~30)
TNR23HP330K	18	24	36			65	33(30~36)
TNR23HP390K	22	28	42			77	39(35~43)
TNR23HP470K	26	34	50			93	47(42~52)

Operating Temp. Range -40 ~ 150°C Storage Temp Range -40 ~ +150°C

DIMENSION Unit= $\frac{mm}{inch}$

	12H	15H	23H
A	$\frac{10}{.394}$	$\frac{12}{.472}$	$\frac{14}{.551}$
B	$\frac{10}{.394}$	$\frac{12}{.472}$	$\frac{14}{.551}$
ϕC	$\frac{5.0}{.197}$	$\frac{5.5}{.217}$	$\frac{6.5}{.256}$
D	$\frac{15}{.591}$ Max.	$\frac{18}{.709}$ Max.	$\frac{25}{.984}$ Max.
E	$\frac{23}{.906}$ Max.	$\frac{25}{.985}$ Max.	$\frac{30}{1.18}$ Max.
F	$\frac{6.4}{.252}$	$\frac{6.4}{.252}$	$\frac{6.4}{.252}$
G	$\frac{17}{.669}$ Max.	$\frac{20}{.787}$ Max.	$\frac{25}{.984}$ Max.
H	$\frac{32}{1.26}$ Max.	$\frac{37}{1.46}$ Max.	$\frac{45}{1.77}$ Max.
J1	$\frac{0.8}{.031}$	$\frac{0.8}{.031}$	$\frac{0.8}{.031}$
J2	$\frac{0.8}{.031}$	$\frac{0.8}{.031}$	$\frac{0.8}{.031}$
L	$\frac{8}{.315}$ Min.	$\frac{10}{.394}$ Min.	$\frac{12}{.472}$ Min.
U	$\frac{5.0}{.197}$	$\frac{6.0}{.236}$	$\frac{7.0}{.276}$