

Ordering

The required voltage rating may be defined by substituting the appropriate voltage code number (see table 1.) into the type number in place of the "x" symbol, see type list. When phase control thyristors are supplied with critical dv/dt other than 200V/ μ sec an additional code (see table 2.) is appended to the type number.

Examples

N018RH12 : 1200 volt device with standard 200V/ μ sec critical dv/dt

N105PH12H00 : 1200 volt device with 400V/ μ sec critical dv/dt

Table 2. dv/dt Code

Linear to 80% V_{DRM}

dv/dt (V/ μ sec)	Code
200	NO CODE
300	G00
400	H00
500	J00
750	K00
1000	L00

Table 1. Voltage Code

Code Number	V_{DRM} and V_{RRM}	V_{RSM}
02	200	300
04	400	500
06	600	700
08	800	900
10	1000	1100
12	1200	1300
14	1400	1500
15	1500	1600
16	1600	1700
18	1800	1900
20	2000	2100
22	2200	2300
24	2400	2500
26	2600	2700
28	2800	2900
30	3000	3100
32	3200	3300
34	3400	3500
36	3600	3700
38	3800	3900
40	4000	4100
42	4200	4300
44	4400	4500
45	4500	4600

Note

$$(1) \quad I_{TSM}(8.3ms) = I_{TSM}(10ms) \times 1.066$$

$$I^2 t(8.3ms) = I^2 t(10ms) \times 0.943$$

$$T_j = 125^\circ\text{C}$$

$$(2) \quad \left. \begin{array}{l} V_o \text{ Threshold voltage} \\ r \text{ Slope resistance} \end{array} \right\} \begin{array}{l} \text{for conduction loss and} \\ \text{heatsink calculations} \\ T_j = 125^\circ\text{C} \end{array}$$

(3) These outlines available with the following compressed heights :

Outline 11 23.5 / 24.5 (0.93 / 0.96)

Outline 12 25.6 / 26.9 (1.00 / 1.06)

Ordering code NxxxDHxx

e.g. N980DH12

(4) di/dt ratings refer to the sum of snubber discharge and load currents.

Stud & Flat Base Thyristors

Type	V_{DRM} V_{RRM} Range (V)	$I_{T(AV)}$ at T case (A)	(°C)	$I_{T(RMS)}$ (A)	I_T (A)	$I_{TSM(1)}$ 10ms $V_R \leq 60\%$ V_{RRM} (Note 1) (A)	$I_{TSM(2)}$ 10ms $V_R \leq 10V$ (Note 1) (A)	$I^2t_{(2)}$ (Note 1) (A ² S)	di/dt Non- Rep/Rep (Note 4) (A/μs)	I_{GT}/V_{GT} 25°C (mA/V)	I_{DRM} I_{RRM} 125°C (mA)	I_H 25°C (mA)	R _{th-c} (K/W) dc & 180° sine	120° Rect
N018RHx	200 - 1500	21	(85)	40	40	210	240	290	400/200	100/3	5	160	1.00	1.25
N023RHx	200 - 1500	23	(85)	48	48	300	345	595	400/200	100/3	5	160	1.00	1.25
N029RHx	200 - 1500	30	(96)	48	48	500	575	1653	400/200	100/3	5	160	0.55	0.69
N044RHx	200 - 1500	45	(85)	100	100	750	863	3720	400/200	100/3	10	160	0.45	0.52
N060RHx	200 - 1500	63	(85)	100	100	1000	1100	6613	400/200	100/3	10	160	0.35	0.40
N086PHx N086RHx	200 - 1500	85	(85)	175	175	1700	1950	19 x 10 ³	1000/500	150/3	20	600	0.23	0.28
N105PHx N105RHx	200 - 1500	110	(90)	175	175	2450	2695	36.3 x 10 ³	1000/500	150/3	20	600	0.23	0.28
N170PHx	200 - 1500	196	(85)	355	355	4200	4620	107 x 10 ³	1000/500	150/3	20	600	0.12	0.14
N195PHx	200 - 1500	226	(85)	355	355	4650	5120	131 x 10 ³	1000/500	150/3	20	600	0.12	0.14
N260KHx	200 - 3600	245*	-	550	550	5700	6270	196 x 10 ³	400/200	300/3	60	1000	0.08 *	0.09 *
N330KHx	1600 - 2400	324*	-	550	550	9200	10100	510 x 10 ³	500/300	300/3	60	1000	0.08 *	0.09 *
N350MHx	200 - 1800	350*	-	900	900	11500	12650	800 x 10 ³	1000/500	300/3	60	1000	0.08 *	0.09 *
N370MHx	200 - 1500	370*	-	900	900	12700	13970	975 x 10 ³	1000/500	300/3	60	1000	0.08 *	0.09 *

Capsule Thyristors

N086CHx	200 - 1500	195†	-	390	320	1700	1950	19 x 10 ³	1000/500	150/3	20	600	0.135 *	0.190 *
N105CHx	200 - 1500	256†	-	500	440	2450	2695	36.3 x 10 ³	1000/500	150/3	20	600	0.135 *	0.190 *
N170CHx	200 - 1500	340†	-	674	575	4200	4620	107 x 10 ³	1000/500	150/3	20	600	0.095 *	0.110 *
N195CHx	200 - 1500	390†	-	780	668	4650	5120	131 x 10 ³	1000/500	150/3	20	600	0.095 *	0.110 *
N275CHx	200 - 800	490†	-	986	818	6000	6600	218 x 10 ³	1000/500	150/3	20	400	0.095 *	0.110 *
N282CHx	2000 - 2200	607†	-	1202	1029	7100	7810	305 x 10 ³	600/300	200/3	40	500	0.050 *	0.058 *
N281CHx	1200 - 1800	680†	-	1350	1140	7500	8300	345 x 10 ³	1000/500	150/3	40	500	0.050 *	0.058 *
N280CHx	200 - 1500	735†	-	1470	1230	8400	9270	430 x 10 ³	1000/500	150/3	40	500	0.050 *	0.058 *
N310CHx	200 - 600	990†	-	2000	1650	11000	12100	732 x 10 ³	1000/500	150/3	40	500	0.050 *	0.058 *
N255CHx	3600 - 4500	590†	-	1150	1040	5250	5780	167 x 10 ³	300/150	300/3	60	1000	0.0342 *	0.042 *
N260CHx	200 - 3600	620†	-	1260	1135	5700	6270	196 x 10 ³	400/200	300/3	60	1000	0.0342 *	0.042 *
N330CHx	1600 - 2400	910†	-	1790	1570	9200	10100	510 x 10 ³	500/300	300/3	60	1000	0.0342 *	0.042 *
N350CHx	200 - 1800	1045†	-	2075	1760	11500	12650	800 x 10 ³	1000/500	300/3	60	1000	0.032 *	0.0397 *
N370CHx	200 - 1800	1130†	-	2260	1890	12700	14000	975 x 10 ³	1000/500	300/3	60	1000	0.032 *	0.0397 *
N520CHx	200 - 1500	1310†	-	2610	2200	15500	17000	1.45 x 10 ⁶	1000/500	300/3	60	1000	0.032 *	0.0397 *
N320CHx	3600 - 4500	880†	-	1725	1535	7700	8470	359 x 10 ³	300/150	300/3	100	1000	0.024 *	0.0291 *
N360CHx	2200 - 3800	1010†	-	1975	1750	12100	13300	884 x 10 ³	400/200	300/3	100	1000	0.024 *	0.0291 *
N390CHx	2200 - 3800	1130†	-	2220	1945	14300	15700	1.23 x 10 ⁶	400/200	300/3	100	1000	0.024 *	0.0291 *
N450CHx	1400 - 2600	1300†	-	2560	2220	17600	19400	1.88 x 10 ⁶	500/300	300/3	100	1000	0.024 *	0.0291 *
N490CHx	200 - 2600	1470†	-	2915	2485	21500	23600	2.78 x 10 ⁶	1000/500	300/3	100	1000	0.024 *	0.0291 *
N510CHx	200 - 2000	1550†	-	3065	2630	23280	25600	3.28 x 10 ⁶	1000/500	300/3	100	1000	0.024 *	0.0291 *
N540CHx	200 - 1800	1715†	-	3435	2850	27200	29900	4.47 x 10 ⁶	1000/500	300/3	100	1000	0.024 *	0.0291 *
N600CHx	200 - 1500	1800†	-	3600	3030	29600	32500	5.28 x 10 ⁶	1000/500	300/3	100	1000	0.024 *	0.0291 *
N560CHx	3600 - 4500	1465†	-	2870	2540	19000	20900	2.18 x 10 ⁶	100/50	300/3	150	1000	0.017 *	0.020 *
N630CHx	2600 - 3600	1663†	-	3261	2875	23000	25000	3.13 x 10 ⁶	300/150	300/3	150	1000	0.017 *	0.020 *
N640CHx	2000 - 3000	1715†	-	3370	2950	24500	30000	4.50 x 10 ⁶	300/150	300/3	150	1000	0.017 *	0.020 *
N760CHx	200 - 2000	1945†	-	3890	3240	31500	38000	7.22 x 10 ⁶	300/150	300/3	150	1000	0.017 *	0.020 *
N990CHx	200 - 1600	2500†	-	5000	4200	37000	45000	10.1 x 10 ⁶	300/150	300/3	150	1000	0.017 *	0.020 *
N750CHx	2600 - 4500	2175†	-	4420	3700	28000	33500	5.61 x 10 ⁶	300/150	350/4	200	1000	0.011 *	0.012 *
N850CHx	3000 - 3600	2420†	-	4880	4160	30000	36000	6.48 x 10 ⁶	300/150	300/3	200	1000	0.011 *	0.012 *
N880CHx	2000 - 3000	2550†	-	4930	4515	32000	39000	7.61 x 10 ⁶	300/150	300/3	200	1000	0.011 *	0.012 *
N980CHx	200 - 2000	3000†	-	5900	5200	45600	55000	11.0 x 10 ⁶	300/150	300/3	200	1000	0.011 *	0.012 *
N1400CHx	200 - 2000	3545†	-	7060	5930	50000	60000	18.0 x 10 ⁶	300/150	300/3	200	1000	0.011 *	0.012 *
N1600CHx	200 - 1200	4090†	-	8165	6840	64000	70000	24.5 x 10 ⁶	300/150	300/3	200	1000	0.011 *	0.012 *

* at 85°C
heatsink† at 55°C
heatsink* R_{th-j-sink}

Rth-s	V _O	r	V _{TM} at I _{TM}	Wt	Mounting	Fig.	Type
(K/W)	(V)	(mΩ)	T _J 125°C (V) (A)	(gm)	Torque (Kgm) or force (Kgf)		
0.10	1.38	10.30	1.96/55	10	0.41 - 0.48	1	N018R
0.10	1.20	8.30	1.80/70	10	0.41 - 0.48	1	N023R
0.10	1.17	8.10	1.93/94	10	0.41 - 0.48	1	N029R
0.10	1.10	7.90	2.22/140	33	0.41 - 0.48	2	N044R
0.10	0.89	6.10	2.10/195	33	0.41 - 0.48	2	N060R
0.08	1.57	2.29	2.19/270	130	1.45	3 3A	N086P N086R
0.08	0.90	1.79	1.57/380	130	1.45	3 3A	N105P N105R
0.04	1.08	1.30	1.88/616	280	2.50 - 2.77	4	N170P
0.04	0.92	0.99	1.62/710	280	2.50 - 2.77	4	N195P
-	1.21	1.36	2.26/770	1000	1.65 - 2.07	5	N260K
-	1.04	0.61	1.66/1020	1000	1.65 - 2.07	5	N330K
-	1.08	0.40	1.51/1100	820	1.65 - 2.07	6	N350M
-	1.06	0.31	1.42/1156	820	1.65 - 2.07	6	N370M

-	1.57	2.29	2.49/400	70	330 - 550	7	N086C
-	0.90	1.79	1.89/550	70	330 - 550	7	N105C
-	1.08	1.30	2.00/720	70	330 - 550	7	N170C
-	0.92	0.99	1.75/840	70	330 - 550	7	N195C
-	0.85	0.535	1.39/1000	70	330 - 550	7	N275C
-	1.14	0.781	2.35/1550	80	530 - 1000	8	N282C
-	1.09	0.587	2.00/1550	80	530 - 1000	8	N281C
-	1.03	0.483	1.78/1550	80	530 - 1000	8	N280C
-	0.82	0.24	1.19/1550	80	530 - 1000	8	N310C
-	1.22	1.53	2.90/1100	340	1000 - 2000	9	N255C
-	1.21	1.36	2.71/1100	340	1000 - 2000	9	N260C
-	1.04	0.61	2.07/1700	340	1000 - 2000	9	N330C
-	1.08	0.40	1.75/1700	340	1000 - 2000	9	N350C
-	1.06	0.31	1.59/1700	340	1000 - 2000	9	N370C
-	0.89	0.241	1.30/1700	340	1000 - 2000	9	N520C
-	1.30	0.92	2.77/1600	510	1900 - 2600	10	N320C
-	1.17	0.687	2.40/1800	510	1900 - 2600	10	N360C
-	1.15	0.51	2.08/1830	510	1900 - 2600	10	N390C
-	1.03	0.38	1.90/2300	510	1900 - 2600	10	N450C
-	1.00	0.27	1.69/2550	510	1900 - 2600	10	N490C
-	0.92	0.252	1.56/2550	510	1900 - 2600	10	N510C
-	0.965	0.174	1.41/2550	510	1900 - 2600	10	N540C
-	0.855	0.171	1.41/3250	510	1900 - 2600	10	N600C
-	1.15	0.46	2.63/3220	1000	2700 - 3400	11	N560C
-	1.04	0.35	2.17/3220	1000	2700 - 3400	11	N630C
-	1.05	0.32	2.08/3220	1000	2700 - 3400	11	N640C
-	1.00	0.167	2.00/6000	1000	2700 - 3400	11	N760C
-	0.88	0.124	1.28/3220	1000	2700 - 3400	11	N990C
-	1.35	0.294	2.23/3000	1700	2700 - 4700	12	N750C
-	1.16	0.246	1.90/3000	1700	2700 - 4700	12	N850C
-	0.78	0.274	1.60/3000	1700	2700 - 4700	12	N880C
-	0.88	0.164	1.37/3000	1700	2700 - 4700	12	N980C
-	0.97	0.095	1.25/3000	1700	2700 - 4700	12	N1400C
-	0.85	0.070	1.06/3000	1700	2700 - 4700	12	N1600C

