

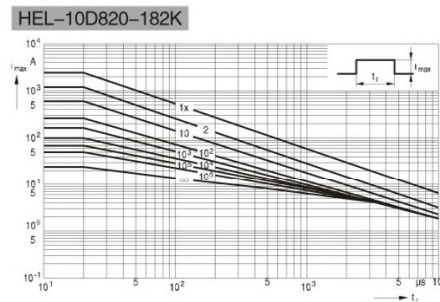
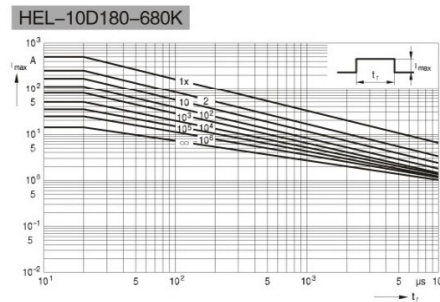
10D系列 HEL 压敏电阻 HEL VARISTOR WITH 10MM DIAMETER

| 型号规格 Part No. | 压敏电压 Varistor Voltage | | 最大允许 使用电压 Maximum Allowable Voltage | | 最大限制 电压 Maximum Clamping Voltage | | 通流容量 Withstanding Surge Current (8/20 μs) 1 time | | 静态功率 Rated Wattage | | 能量容量 Energy (2ms) | | 静态电容量 (参考值) Typical Capacitance | |
|------------------|--------------------------|-------------|---|-------------------------|--|--------------------|--|----------|--------------------------|--------------|-------------------------|--|--|--|
| | V _{1mA} (V) | AC (V) | DC (V) | V _{25A} (V) | K class (A) | KJ class (A) | (W) | K (J) | KJ (J) | 1kHz (PF) | | | | |
| HEL-10D180 | 18 | (16-20) | 11 | 14 | · 38 | 500 | 1000 | 0.05 | 1.6 | 2.0 | 7,500 | | | |
| HEL-10D220 | 22 | (20-24) | 14 | 18 | · 43 | 500 | 1000 | 0.05 | 2.0 | 2.5 | 6,000 | | | |
| HEL-10D270 | 27 | (24-30) | 17 | 22 | · 53 | 500 | 1000 | 0.05 | 2.4 | 3.0 | 4,800 | | | |
| HEL-10D330 | 33 | (30-36) | 20 | 26 | · 65 | 500 | 1000 | 0.05 | 3.0 | 3.7 | 4,200 | | | |
| HEL-10D390 | 39 | (35-43) | 25 | 31 | · 77 | 500 | 1000 | 0.05 | 3.5 | 4.4 | 3,700 | | | |
| HEL-10D470 | 47 | (42-52) | 30 | 38 | · 93 | 500 | 1000 | 0.05 | 4.2 | 5.3 | 3,300 | | | |
| HEL-10D560 | 56 | (50-62) | 35 | 45 | · 110 | 500 | 1000 | 0.05 | 5.0 | 6.3 | 2,900 | | | |
| HEL-10D680 | 68 | (61-75) | 40 | 56 | · 135 | 500 | 1000 | 0.05 | 6.1 | 7.7 | 2,500 | | | |
| HEL-10D820 | 82 | (74-90) | 50 | 65 | 135 | 2500 | 3500 | 0.4 | 7.4 | 9.2 | 2,100 | | | |
| HEL-10D101 | 100 | (90-110) | 60 | 85 | 165 | 2500 | 3500 | 0.4 | 9.0 | 11.3 | 1,700 | | | |
| HEL-10D121 | 120 | (108-132) | 75 | 100 | 200 | 2500 | 3500 | 0.4 | 10.8 | 13.5 | 1,500 | | | |
| HEL-10D151 | 150 | (135-165) | 95 | 125 | 250 | 2500 | 3500 | 0.4 | 13.5 | 16.9 | 1,300 | | | |
| HEL-10D181 | 180 | (162-198) | 115 | 150 | 300 | 2500 | 3500 | 0.4 | 16.2 | 20.3 | 470 | | | |
| HEL-10D201 | 200 | (180-220) | 130 | 170 | 340 | 2500 | 3500 | 0.4 | 18.0 | 22.5 | 430 | | | |
| HEL-10D221 | 220 | (198-242) | 140 | 180 | 360 | 2500 | 3500 | 0.4 | 19.8 | 24.8 | 390 | | | |
| HEL-10D241 | 240 | (216-264) | 150 | 200 | 395 | 2500 | 3500 | 0.4 | 21.6 | 27.0 | 360 | | | |
| HEL-10D271 | 270 | (243-297) | 175 | 225 | 455 | 2500 | 3500 | 0.4 | 24.3 | 30.4 | 330 | | | |
| HEL-10D301 | 300 | (270-330) | 195 | 250 | 505 | 2500 | 3500 | 0.4 | 27.0 | 33.8 | 290 | | | |
| HEL-10D331 | 330 | (297-363) | 210 | 275 | 550 | 2500 | 3500 | 0.4 | 29.7 | 37.1 | 280 | | | |
| HEL-10D361 | 360 | (324-396) | 230 | 300 | 595 | 2500 | 3500 | 0.4 | 32.4 | 40.5 | 260 | | | |
| HEL-10D391 | 390 | (351-429) | 250 | 320 | 650 | 2500 | 3500 | 0.4 | 35.1 | 43.9 | 240 | | | |
| HEL-10D431 | 430 | (387-473) | 275 | 350 | 710 | 2500 | 3500 | 0.4 | 38.7 | 48.4 | 220 | | | |
| HEL-10D471 | 470 | (423-517) | 300 | 385 | 775 | 2500 | 3500 | 0.4 | 42.3 | 52.9 | 190 | | | |
| HEL-10D511 | 510 | (459-561) | 320 | 418 | 842 | 2500 | 3500 | 0.4 | 42.3 | 52.9 | 180 | | | |
| HEL-10D561 | 560 | (504-616) | 350 | 460 | 920 | 2500 | 3500 | 0.4 | 42.3 | 52.9 | 180 | | | |
| HEL-10D621 | 620 | (558-682) | 385 | 505 | 1,025 | 2500 | 3500 | 0.4 | 42.3 | 52.9 | 160 | | | |
| HEL-10D681 | 680 | (612-748) | 420 | 560 | 1,120 | 2500 | 3500 | 0.4 | 42.3 | 52.9 | 140 | | | |
| HEL-10D751 | 750 | (675-825) | 460 | 615 | 1,240 | 2500 | 3500 | 0.4 | 42.3 | 52.9 | 130 | | | |
| HEL-10D781 | 780 | (702-858) | 485 | 640 | 1,290 | 2500 | 3500 | 0.4 | 42.3 | 52.9 | 130 | | | |
| HEL-10D821 | 820 | (738-902) | 510 | 670 | 1,355 | 2500 | 3500 | 0.4 | 44.3 | 55.4 | 130 | | | |
| HEL-10D911 | 910 | (819-1001) | 550 | 745 | 1,500 | 2500 | 3500 | 0.4 | 49.1 | 61.4 | 120 | | | |
| HEL-10D951 | 950 | (855-1045) | 580 | 780 | 1,570 | 2500 | 3500 | 0.4 | 51.3 | 64.1 | 110 | | | |
| HEL-10D102 | 1000 | (900-1100) | 625 | 825 | 1,650 | 2500 | 3500 | 0.4 | 54.0 | 67.5 | 100 | | | |
| HEL-10D112 | 1100 | (990-1210) | 680 | 895 | 1,815 | 2500 | 3500 | 0.4 | 59.4 | 74.3 | 90 | | | |
| HEL-10D152 | 1500 | (1350-1650) | 900 | 1220 | 2,475 | 2500 | 3500 | 0.4 | 80.0 | 100.0 | 80 | | | |
| HEL-10D182 | 1800 | (1620-1980) | 1000 | 1465 | 2,970 | 2500 | 3500 | 0.4 | 97.2 | 121.5 | 60 | | | |

• The clamping voltage from 180K to 680K is tested with current 5A,
Note: The energy (10/1000 μs) is about 1.4 times of energy (2ms).
• 180K至680K最大限制电压测试电流是5A。
注: 10/1000 μs的能量耐量值约为2ms能量耐量值的1.4倍

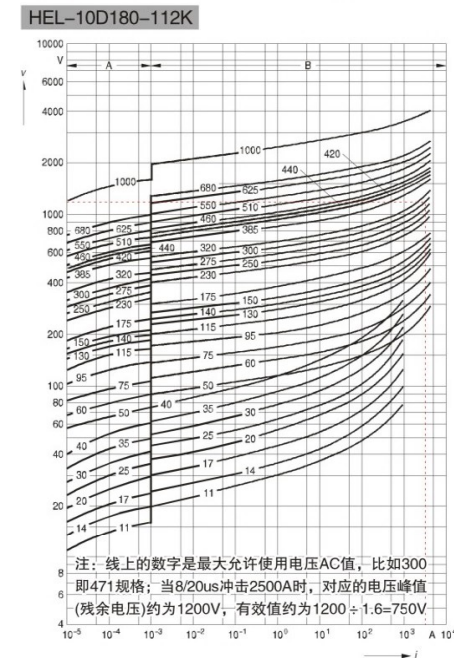
降额曲线图 Derating curves

横轴是冲击时间即浪涌波形宽度，纵轴是冲击电流峰值，
线上的数字是冲击次数；
Maximum surge current $I_{max} = f(t_r, \text{pulse train})$



伏安特性图 v/i characteristics

A区是泄漏电流区，A = Leakage current,
B区是冲击电流与限制电压对应区
B = Protection level for worst-case varistor tolerances



注：线上的数字是最大允许使用电压AC值，比如300
即471规格；当8/20us冲击2500A时，对应的电压峰值
(残余电压)约为1200V，有效值约为1200 ÷ 1.6=750V

产品尺寸 DIMENSION

单位Unit: mm

| 产品外型 Product Shape | 系列 Series | 压敏电压 Varistor Voltage | 厚度 Tmax |
|-----------------------|--------------|--------------------------|------------|
| | 10D | 18V-39V | 6.5 |
| | | 47V-68V | 7.0 |
| | | 82V-150V | 7.5 |
| | | 180V-270V | 8.0 |
| | | 330V-390V | 8.5 |
| | | 430V-560V | 9.0 |
| | | 620V-780V | 9.5 |
| | | 820V-1200V | 10.0 |
| | | 1300V-1500V | 10.5 |
| | | 1600V-1800V | 11.0 |