

05D Specification

Put "J" in Free Code Stands For High Surge Series

| VCR | | Maximum Allowable Voltage | | Varistor Voltage | Clamping Voltage (Max.) | | Maximum Peak Current (8/20 μ s) | | Maximum Energy (10/1000 μ s) | | RATED POWER | Typical Capacitance (Reference) | | | |
|----------|------------|---------------------------|-----|------------------|-------------------------|------|-------------------------------------|----------|----------------------------------|----------|-------------|---------------------------------|---|---|---|
| | | AC.rms | DC | | V _{1.0mA} | VC | IP | Standard | High Surge | Standard | | | | | |
| Standard | High Surge | (V) | | (V) | | (V) | (A) | (A) | | (JOULE) | | (pf) | | | |
| 05D180L | J | 11 | 14 | 18(15-21) | 40 | 1 | 100 | 250 | 0.4 | 0.6 | 0.01 | 1400 | * | * | * |
| 05D220K | J | 14 | 18 | 22(20-24) | 48 | | | | 0.5 | 0.7 | | 1150 | * | * | * |
| 05D270K | J | 17 | 22 | 27(24-30) | 60 | | | | 0.6 | 0.9 | | 930 | * | * | * |
| 05D330K | J | 20 | 26 | 33(30-36) | 73 | | | | 0.8 | 1.1 | | 760 | * | * | * |
| 05D390K | J | 25 | 31 | 39(35-43) | 80 | | | | 0.9 | 1.2 | | 640 | * | * | * |
| 05D470K | J | 30 | 38 | 47(42-52) | 104 | | | | 1.1 | 1.5 | | 530 | * | * | * |
| 05D560K | J | 35 | 45 | 56(50-62) | 123 | | | | 1.3 | 1.8 | | 450 | * | * | * |
| 05D680K | J | 40 | 56 | 68(61-75) | 150 | | | | 1.6 | 2.2 | | 370 | * | * | * |
| 05D820K | J | 50 | 65 | 82(74-90) | 146 | 5 | 400 | 800 | 2.5 | 4.0 | 0.10 | 300 | * | * | * |
| 05D101K | J | 60 | 85 | 100(90-110) | 175 | | | | 3.0 | 4.1 | | 250 | * | * | * |
| 05D121K | J | 75 | 100 | 120(108-132) | 210 | | | | 4.0 | 4.9 | | 210 | * | * | * |
| 05D151K | J | 95 | 125 | 150(135-165) | 260 | | | | 4.8 | 6.5 | | 165 | * | * | * |
| 05D181K | J | 115 | 150 | 180(162-198) | 320 | | | | 5.9 | 7.5 | | 140 | * | * | * |
| 05D201K | J | 130 | 170 | 200(185-225) | 355 | | | | 6.5 | 8.5 | | 125 | * | * | * |
| 05D221K | J | 140 | 180 | 220(198-242) | 380 | | | | 7.0 | 9.0 | | 110 | * | * | * |
| 05D241K | J | 150 | 200 | 240(216-264) | 410 | | | | 8.0 | 10.5 | | 100 | * | * | * |
| 05D271K | J | 175 | 225 | 270(243-297) | 475 | | | | 8.5 | 11.0 | | 95 | * | * | * |
| 05D301K | J | 190 | 250 | 300(270-330) | 520 | | | | 9.0 | 12.0 | | 85 | * | * | * |
| 05D331K | J | 210 | 275 | 330(297-363) | 570 | | | | 9.5 | 13.0 | | 75 | * | * | * |
| 05D361K | J | 230 | 300 | 360(324-396) | 620 | | | | 10.0 | 16.0 | | 70 | * | * | * |
| 05D391K | J | 250 | 320 | 390(351-429) | 675 | | | | 12.0 | 17.0 | | 65 | * | * | * |
| 05D431K | J | 275 | 350 | 430(387-473) | 745 | | | | 13.0 | 20.0 | | 60 | * | * | * |
| 05D471K | J | 300 | 385 | 470(423-517) | 810 | | | | 15.0 | 21.0 | | 55 | * | * | * |
| 05D511K | J | 320 | 415 | 510(459-561) | 845 | | | | 16.0 | 22.5 | | 50 | * | * | * |
| 05D561K | J | 350 | 460 | 560(504-616) | 920 | 16.0 | 24.0 | 45 | * | * | * | | | | |

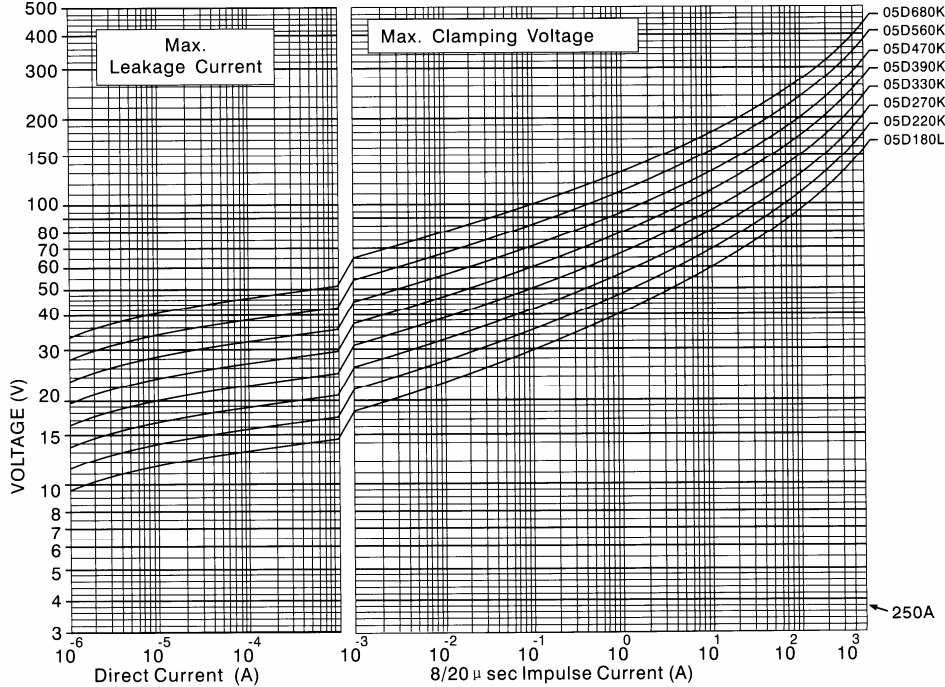
Operating temperature range: - 40°C TO +85°C

Storage temperature range: - 40°C TO +125°C

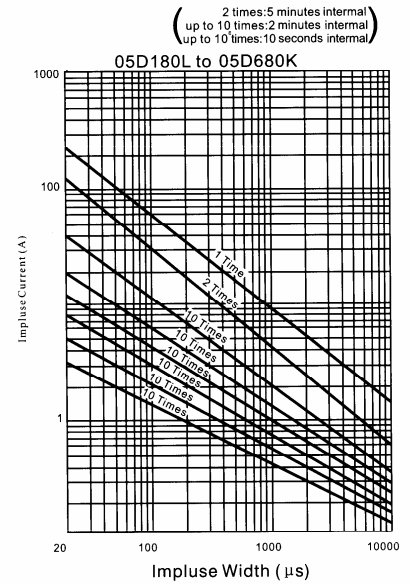
05D SERIES

V-I curve

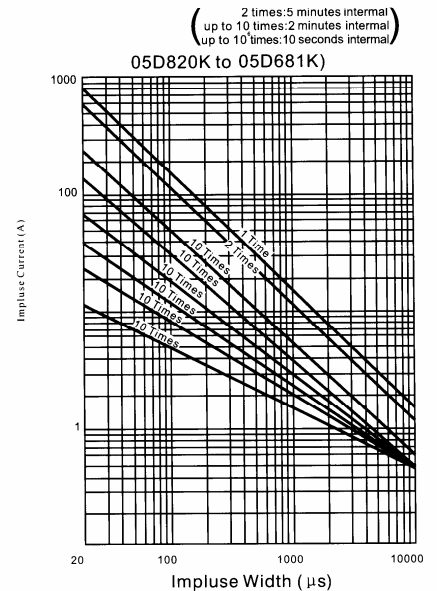
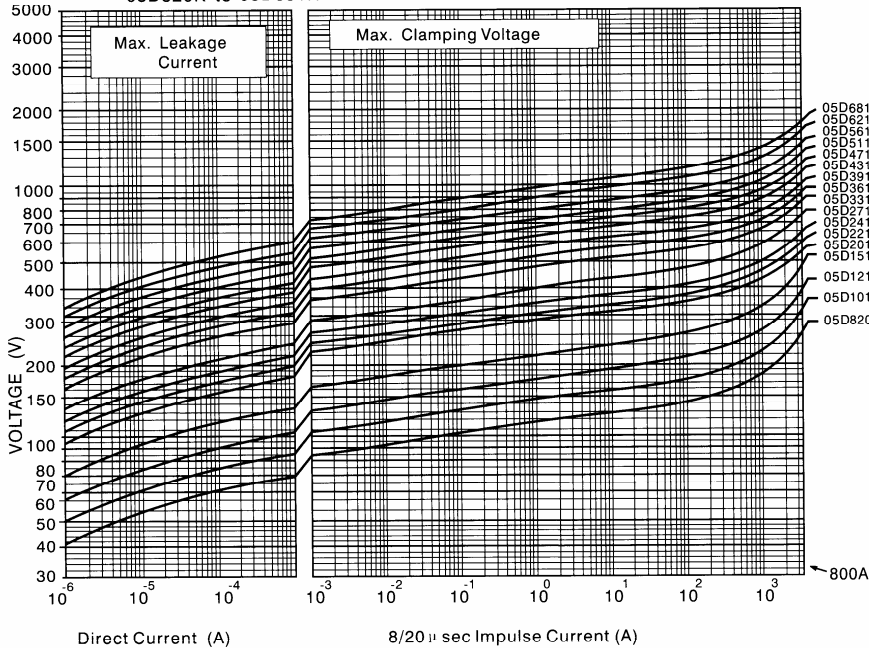
VCR-05D180L to VCR-05D680K



Impulse Lifetime Ratings



05D820K to 05D681K



07D Specification

Put "J" in Free Code Stands for High Surge series

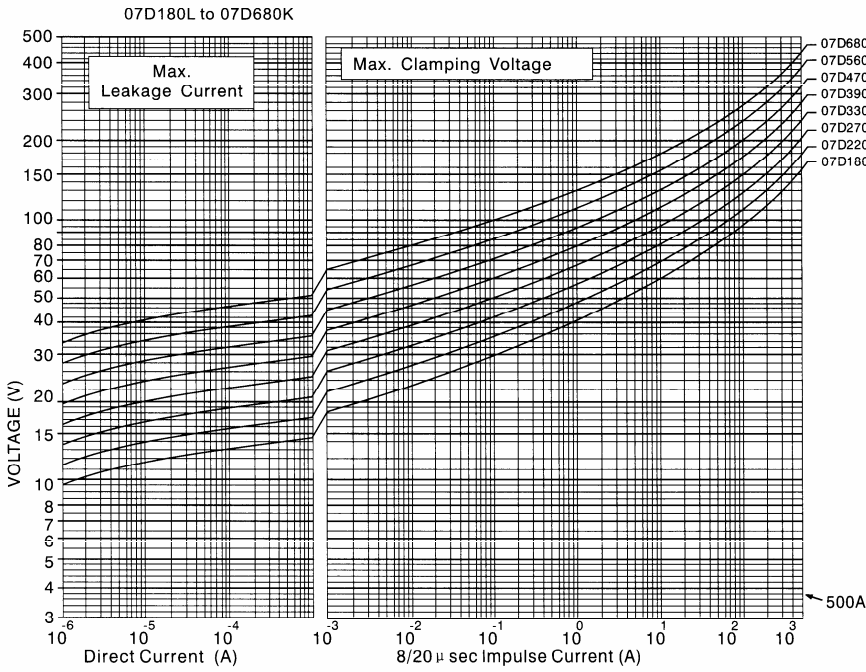
| VCR | | Maximum Allowable Voltage | | Varistor Voltage | Clamping Voltage (Max.) | | Maximum Peak Current (8/20µs) | | Maximum Energy (10/1000µs) | | RATED POWER | Typical Capacitance (Reference) | | | | |
|----------|------------|---------------------------|-----|------------------|-------------------------|-----|-------------------------------|----------|----------------------------|----------|-------------|---------------------------------|---|---|---|------------|
| | | AC.rms | DC | | V _{1.0mA} | VC | IP | Standard | High Surge | Standard | | | | | | High Surge |
| Standard | High Surge | (V) | | (V) | (V) | (A) | (A) | | (JOULE) | | | (pf) | | | | |
| 07D180L | J | 11 | 14 | 18(15-21) | 36 | 2.5 | 250 | 500 | 0.9 | 2.0 | 0.02 | 2800 | * | * | * | |
| 07D220K | J | 14 | 18 | 22(20-24) | 43 | | | | 1.1 | 2.4 | | 2300 | * | * | * | |
| 07D270K | J | 17 | 22 | 27(24-30) | 53 | | | | 1.4 | 3.0 | | 1800 | * | * | * | |
| 07D330K | J | 20 | 26 | 33(30-36) | 65 | | | | 1.7 | 3.5 | | 1500 | * | * | * | |
| 07D390K | J | 25 | 31 | 39(35-43) | 77 | | | | 2.1 | 4.0 | | 1300 | * | * | * | |
| 07D470K | J | 30 | 38 | 47(42-52) | 93 | | | | 2.5 | 5.0 | | 1100 | * | * | * | |
| 07D560K | J | 35 | 45 | 56(50-62) | 110 | | | | 3.1 | 6.0 | | 890 | * | * | * | |
| 07D680K | J | 40 | 56 | 68(61-75) | 135 | | | | 3.6 | 7.0 | | 740 | * | * | * | |
| 07D820K | J | 50 | 65 | 82(74-90) | 135 | 10 | 1200 | 1750 | 5.5 | 10 | 0.25 | 600 | * | * | * | |
| 07D101K | J | 60 | 85 | 100(90-110) | 165 | | | | 6.5 | 12 | | 500 | * | * | * | |
| 07D121K | J | 75 | 100 | 120(108-132) | 200 | | | | 7.8 | 13 | | 420 | * | * | * | |
| 07D151K | J | 95 | 125 | 150(135-165) | 250 | | | | 9.7 | 13 | | 330 | * | * | * | |
| 07D181K | J | 115 | 150 | 180(162-198) | 300 | | | | 11.7 | 16 | | 280 | * | * | * | |
| 07D201K | J | 130 | 170 | 200(185-225) | 340 | | | | 13 | 17 | | 250 | * | * | * | |
| 07D221K | J | 140 | 180 | 220(198-242) | 360 | | | | 14 | 19 | | 230 | * | * | * | |
| 07D241K | J | 150 | 200 | 240(216-264) | 395 | | | | 15 | 21 | | 210 | * | * | * | |
| 07D271K | J | 175 | 225 | 270(243-297) | 455 | | | | 18 | 24 | | 185 | * | * | * | |
| 07D301K | J | 190 | 250 | 300(270-330) | 500 | | | | 20 | 26 | | 165 | * | * | * | |
| 07D331K | J | 210 | 275 | 330(297-363) | 550 | | | | 23 | 28 | | 150 | * | * | * | |
| 07D361K | J | 230 | 300 | 360(324-396) | 595 | | | | 25 | 32 | | 140 | * | * | * | |
| 07D391K | J | 250 | 320 | 390(351-429) | 650 | | | | 25 | 35 | | 130 | * | * | * | |
| 07D431K | J | 275 | 350 | 430(387-473) | 710 | | | | 28 | 40 | | 115 | * | * | * | |
| 07D471K | J | 300 | 385 | 470(423-517) | 775 | | | | 30 | 42 | | 105 | * | * | * | |
| 07D511K | J | 320 | 415 | 510(459-561) | 845 | | | | 30 | 45 | | 100 | * | * | * | |
| 07D561K | J | 350 | 460 | 560(504-616) | 925 | 30 | 49 | 90 | * | * | * | | | | | |
| 07D621K | J | 385 | 505 | 620(558-682) | 1025 | 33 | 55 | 80 | * | * | * | | | | | |
| 07D681K | J | 420 | 560 | 680(612-748) | 1120 | 33 | 60 | 75 | * | * | * | | | | | |

Operating temperature range: - 40°C TO +85°C

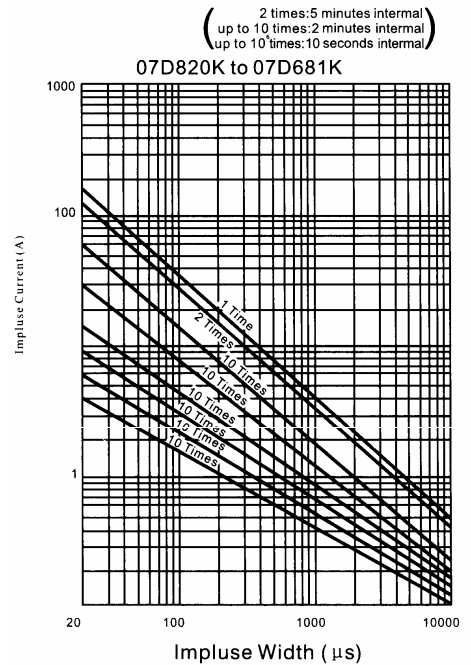
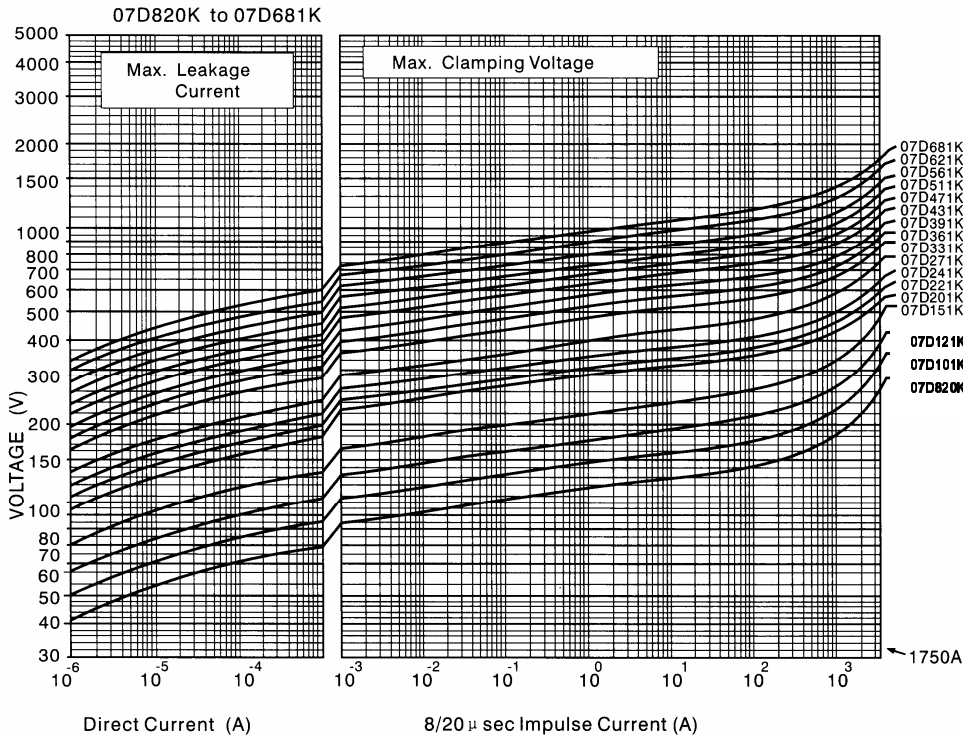
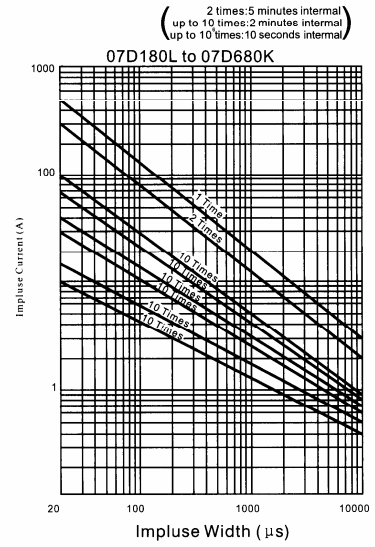
Storage temperature range: - 40°C TO +125°C

07D SERIES

V-I curve






Impulse Lifetime Ratings



10D Specification

Put "J" in Free Code Stands for High Surge Series

| VCR | | Maximum Allowable Voltage | | Varistor Voltage | Clamping Voltage (Max.) | | Maximum Peak Current (8/20 μ s) | | Maximum Energy (10/1000 μ s) | | RATED POWER | Typical Capacitance (Reference) | | | |
|----------|------------|---------------------------|-----|--------------------|-------------------------|-----|-------------------------------------|------------|----------------------------------|------------|-------------|---------------------------------|---|---|---|
| P/N | | AC.rms | DC | V _{1.0mA} | VC | IP | Standard | High Surge | Standard | High Surge | (W) | @ 1KHz |  |  |  |
| Standard | High Surge | (V) | | | (V) | (A) | (A) | | (JOULE) | | | (pf) | | | |
| 10D180L | J | 11 | 14 | 18(15-21) | 36 | 5.0 | 500 | 1000 | 2.1 | 3.0 | 0.05 | 5600 | * | * | * |
| 10D220K | J | 14 | 18 | 22(20-24) | 43 | | | | 2.5 | 5.0 | | 4500 | * | * | * |
| 10D270K | J | 17 | 22 | 27(24-30) | 53 | | | | 3.0 | 6.0 | | 3700 | * | * | * |
| 10D330K | J | 20 | 26 | 33(30-36) | 65 | | | | 4.0 | 7.0 | | 3000 | * | * | * |
| 10D390K | J | 25 | 31 | 39(35-43) | 77 | | | | 4.6 | 9.0 | | 2400 | * | * | * |
| 10D470K | J | 30 | 38 | 47(42-52) | 93 | | | | 5.5 | 11 | | 2100 | * | * | * |
| 10D560K | J | 35 | 45 | 56(50-62) | 110 | | | | 7.0 | 13 | | 1800 | * | * | * |
| 10D680K | J | 40 | 56 | 68(61-75) | 135 | | | | 8.2 | 15 | | 1500 | * | * | * |
| 10D820K | J | 50 | 65 | 82(74-90) | 135 | 25 | 2500 | 3500 | 12 | 17 | 0.40 | 1200 | * | * | * |
| 10D101K | J | 60 | 85 | 100(90-110) | 165 | | | | 15 | 18 | | 1000 | * | * | * |
| 10D121K | J | 75 | 100 | 120(108-132) | 200 | | | | 18 | 21 | | 830 | * | * | * |
| 10D151K | J | 95 | 125 | 150(135-165) | 250 | | | | 22 | 25 | | 670 | * | * | * |
| 10D181K | J | 115 | 150 | 180(162-198) | 300 | | | | 27 | 30 | | 560 | * | * | * |
| 10D201K | J | 130 | 170 | 200(185-225) | 340 | | | | 30 | 35 | | 500 | * | * | * |
| 10D221K | J | 140 | 180 | 220(198-242) | 360 | | | | 32 | 39 | | 450 | * | * | * |
| 10D241K | J | 150 | 200 | 240(216-264) | 395 | | | | 35 | 42 | | 420 | * | * | * |
| 10D271K | J | 175 | 225 | 270(243-297) | 455 | | | | 40 | 49 | | 370 | * | * | * |
| 10D301K | J | 190 | 250 | 300(270-330) | 500 | | | | 40 | 54 | | 330 | * | * | * |
| 10D331K | J | 210 | 275 | 330(297-363) | 550 | | | | 43 | 58 | | 300 | * | * | * |
| 10D361K | J | 230 | 300 | 360(324-396) | 595 | | | | 47 | 65 | | 280 | * | * | * |
| 10D391K | J | 250 | 320 | 390(351-429) | 650 | | | | 60 | 70 | | 260 | * | * | * |
| 10D431K | J | 275 | 350 | 430(387-473) | 710 | | | | 65 | 80 | | 230 | * | * | * |
| 10D471K | J | 300 | 385 | 470(423-517) | 775 | | | | 70 | 85 | | 210 | * | * | * |
| 10D511K | J | 320 | 415 | 510(459-561) | 845 | | | | 70 | 90 | | 200 | * | * | * |
| 10D561K | J | 350 | 460 | 560(504-616) | 925 | | | | 70 | 92 | | 180 | * | * | * |
| 10D621K | J | 385 | 505 | 620(558-682) | 1025 | | | | 70 | 95 | | 160 | * | * | * |
| 10D681K | J | 420 | 560 | 680(612-748) | 1120 | 70 | 98 | 150 | * | * | * | | | | |
| 10D751K | J | 460 | 615 | 750(675-825) | 1240 | 75 | 100 | 130 | * | * | * | | | | |
| 10D781K | J | 485 | 640 | 780(702-858) | 1290 | 80 | 105 | 130 | * | * | * | | | | |
| 10D821K | J | 510 | 670 | 820(738-902) | 1355 | 85 | 110 | 120 | * | * | * | | | | |
| 10D911K | J | 550 | 745 | 910(819-1001) | 1500 | 93 | 130 | 110 | * | * | * | | | | |
| 10D102K | J | 625 | 825 | 1000(900-1100) | 1650 | 102 | 140 | 100 | * | * | * | | | | |
| 10D112K | J | 680 | 895 | 1100(990-1210) | 1815 | 115 | 155 | 90 | * | * | * | | | | |

Operating temperature range: - 40°C TO +85°C

Storage temperature range: - 40°C TO +125°C

10D SERIES

