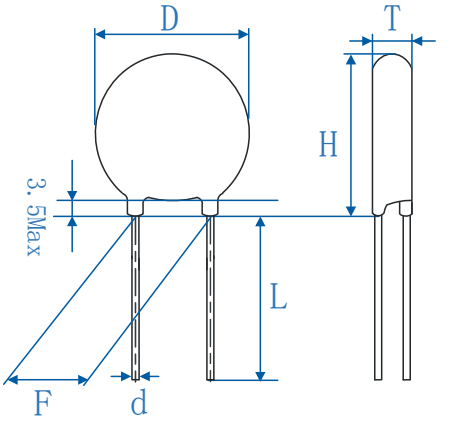
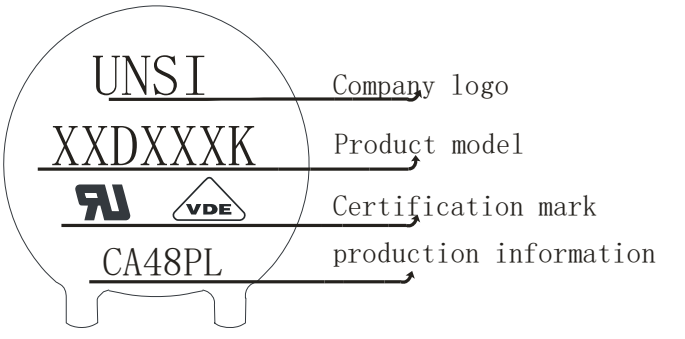
# Varistor 05mm series

Stand-off Voltage:11 to 420Vac

Withstanding Surge Current :0.1 to 0.8KA

## Dimensions and printing instructions




Unit: mm

| 型号 | D(±1.5) | L (min) | d(±0.05) | F(±0.8) | T(Max) |
|---|---|---|---|---|---|
| 5D471K | 5 | 18 | 0.6 | 5 | 4 |

## Printing description

| UNSI | ××D×××K | | | | | |
|---|---|---|---|---|---|---|
| LOGO | ××D | | ××× | | K | |
| | Element dia (Φ) | | Varistor voltage | | Tolerance | |
| SHEN ZHEN YUHE ELECT-RONICS CO., LTD | 07 | 7.0mm | The first two digits are significant figures and the third one denotes the number of zeros. | | K | ±10% |
| | 10 | 10.0mm | | | M | ±20% |
| | 14 | 14.0mm | | | Or customer special requirement | |
| | 20 | 20.0mm | | | | |
| | D: Disc type | | Examples: | | | |
| | | | 471=47*10¹=470V | | | |
| | | | 102=10*10²=1000V | | | |
| USA | | | Germany | | | |
| | UL Accreditation | | VDE Accreditation | | | |
| | File# E483148 | | File#40042120 | | | |
| C | A | 01 | P | | C | |
| Pin material | particular yea | cycle | energy | | Production line | |
| C | CP WIRE | A | 2015year | 01 | First week | P | Conventional product | A | A line |
| U | CU WIRE | B | 2016year | 02 | Second weeks | Z | high energy | B | B line |
| | | H | 2022year | 52 | Fifty-second weeks | J | Special products | C | C line |

# Electrical Parameter

(Ambient Temperature 25℃)

| Part NO.: | | 5D471K | |
|---|---|---|---|
| Electrical Item | | Digit | Test Conditions |
| Max. Allowable Voltage (V) | VAC(rms): | 300 | At 1.0mA DC |
| | VDC: | 385 | |
| Varistor Voltage (V) | V1mA | 423~517 | V0.1mA □ V1mA ■ (Test Time For 30ms) |
| Rated Power (W) | P | 0.1 | |
| Max. Clamping Voltage (V) | IP: (A) | 5 | Test Current Waveform 8/20μs |
| | VC: (V) | 775 | |
| Withstanding Surge Current (A) | 1time: | 400 | Test Current Waveform 8/20μs |
| | 2times: | 200 | |
| Max. Energy (J) | | 15 | Test Current Waveform 10/1000μs |
| Typical Capacitance (PF) | | 55 | @1KHz |
| Leakage Current (μA) | | ≤20 | At 80% of Varistor Voltage |
| Nonlinear Exponent (α) | | ≥38 | $\alpha = \log \frac{I_1}{I_2} / \log \frac{V_1}{V_2}$ |
| Temperature Coefficient of Varistor Voltage | | ≤±0.05%/℃Max. | $\frac{V_{1mA}^{at\ 85℃} - V_{1mA}^{at\ 25℃}}{V_{1mA}^{at\ 25℃}} \times \frac{1}{60} \times 100(\%/℃)$ |
| Impulse Life | | ≤±10%(V1mA) | Test Current Waveform 8/20μs |

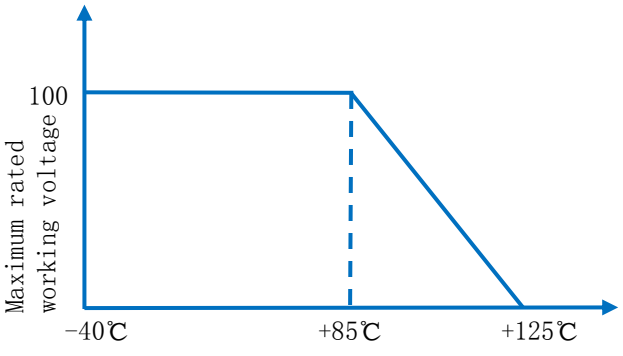
# Reliability

| MECHANICAL REQUIREMENTS | | |
|---|---|---|
| Item | Specifications | Test conditions / Methods |
| Tensile of Terminations | No Outstanding Damage | 1.0Kgf; 10Sec. |
| Bending of Terminations | No Outstanding Damage | 0.5Kgf; 90°,3 Times |
| Vibration | No Outstanding Damage | Freq:10-55hz;Amp:0.75mm,1Min |
| Solderability | Min. 95% of The Terminal Should Be Covered With Solder Uniformly | Solder Temp:265±5℃Immersed Time: ≤5Sec. |
| Resistance of soldering heat | △V1mA/V1mA ≤±5% | Solder Temp: 265±5℃Immersed Time: 10±1Sec. |

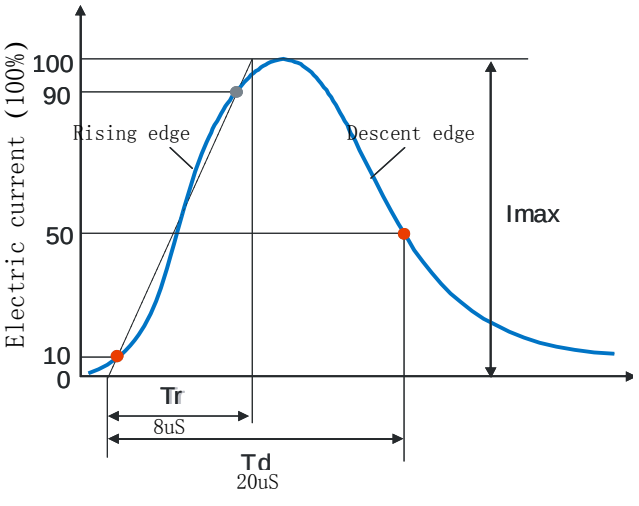
# ENVIRONMENTAL REQUIREMENTS

| Item | Specifications | Test conditions / Methods℃ | | |
|---|---|---|---|---|
| High Temperature Storage | V1mA/V1mA ≤±5% | AmbientTemp:125±2℃ Duration:1000h | | |
| Low Temperature Storage | △V1mA/V1mA ≤±5% | Ambient Tem:-40±2℃ Duration:1000h | | |
| High Humidity Storage/Damp Heat | △V1mA/V1mA ≤±5% | Ambient Temp: 40±2℃ 90-95% R.H. Duration:1000h | | |
| Temperature Cycle | △V1mA/V1mA ≤±5% | Step | Temperature | Period |
| | | 1 | -40℃ | 30 min |
| | | 2 | Room Temp | 15 min |
| | | 3 | 125℃ | 30 min |
| | | 4 | Room Temp | 15 min |
| High Temperature Load | △V1mA/V1mA ≤±10% | Ambient temp:85±2℃ Duration:1000h Load: Max. Allowable Voltage | | |
| High Humidity Load | △V1mA/V1mA ±10% | Ambient Temp: 40±2℃ 90-95%R.H.Duration:1000H Load: Max. Allowable Voltage | | |
| Operating Temperature Range | -40℃~ +85℃ | -40℃ ~ +85℃ | | |
| Storage Temperature Range | -40℃~ +125℃ | -40℃ ~ +125℃ | | |

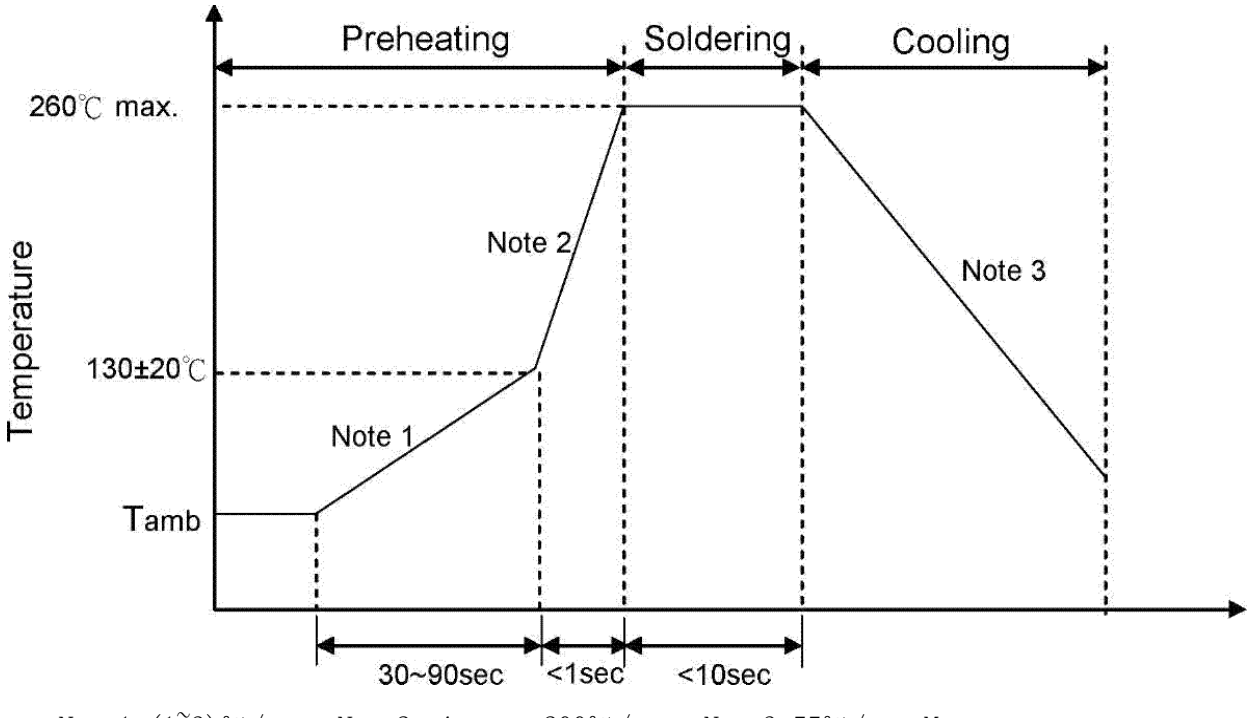
Current Energy and Power Dissipation Ratings




Peak Pulse Current Test Waveform for Clamping Voltage




## Wave Soldering Profile




Note1:(1~3)℃/sec Note2: Approx.200℃/sec Note3:55℃/sec Max

| Item | Conditions |
|---|---|
| Temperature of Soldering Iron-tip | 360℃(max.) |
| Soldering Time | 3 sec (max.) |
| Distance from Varistor | 2 mm (min.) |