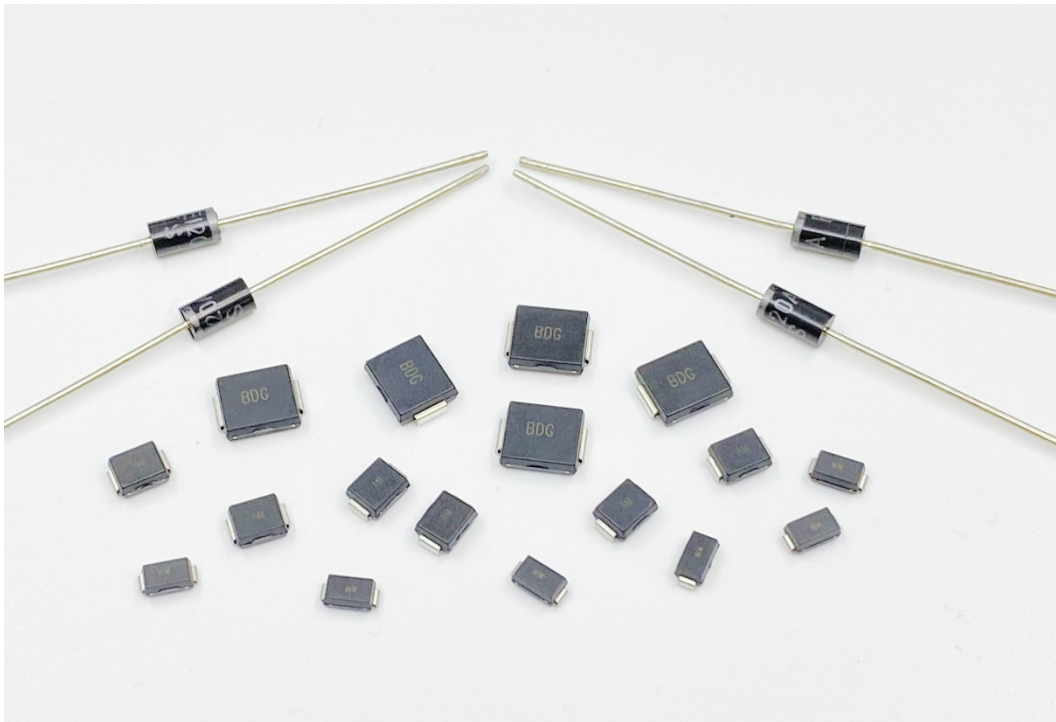


TVS贴片二极管

TVS SMD DIODE



优良品质 · 诚信经营

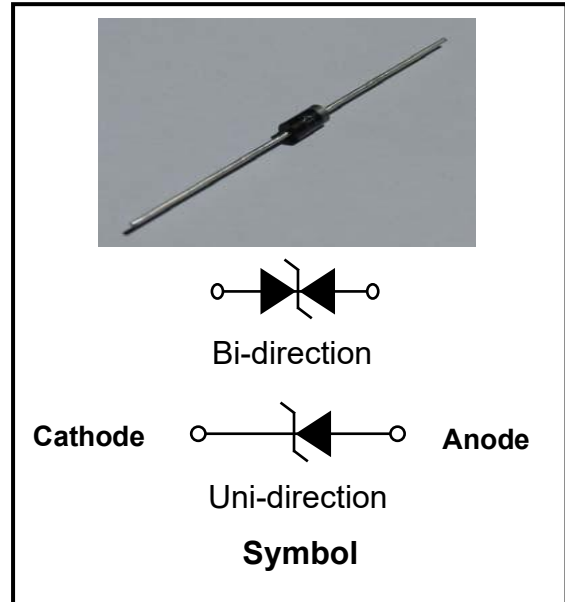
一起携手 · 共创辉煌

P6KE Series

产品简介

DESCRIPTION

The P6KE series of high current uni/bi-directional transient suppressors are designed for A.C. line protection and high power DC bus clamping applications. These devices offer uni/bi-directional port protection from 6.8 volts to 400 volts. They provide a clamping voltage lower than the avalanche voltage. Therefore, any voltage rise due to increased current conduction is contained to a minimum, providing the best possible protection level. They can also be connected in series and/or parallel to create very high capacity protection solutions.



产品特征

FEATURES

- Low zener impedance.
- Excellent clamping capability.
- Repetition rate (duty cycle): 0.01%.
- JEDEC DO-15/DO-204AC Molded Plastic.
- Color band denoted cathode except bidirectional.
- High temperature soldering: 260°C/10s at terminals.
- Glass passivated chip junction in JEDEC DO-15/DO-204AC package.
- 600W Peak Pulse power capability at 10x1000μs waveform.
- Fast response time: typically less than 1.0ps from 0V to V_{BR} min.

绝对最大额定值
ABSOLUTE MAXIMUM RATINGS

 (T_A=25°C, RH=45%-75%, unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|-----------------------------------|----------------|------|
| Peak Pulse Power dissipation on 10/1000μs waveform | P _{PP} | 600 | W |
| Peak pulse current of on 10/1000μs waveform | I _{PP} | See next Table | A |
| Steady state power dissipation at T _L =75°C | P _{M(AV)} | 5.0 | W |
| Operating junction and Storage temperature range | T _{STG} , T _J | -55 to +150 | °C |
| Peak forward surge current, 8.3ms single half sine-wave | I _{FSM} | 100 | A |

电气特性
ELECTRICAL CHARACTERISTICS

 T_A = 25°C

| Part Number | | V _R | I _R @ V _R | V _{BR} @ I _T | | I _T | V _C @ I _{PP} | I _{PP} ^③ |
|-------------|-----------|----------------|---------------------------------|----------------------------------|--------|----------------|----------------------------------|------------------------------|
| Uni-Polar | Bi-Polar | V | μA | Min(V) | Max(V) | mA | Max(V) | A |
| P6KE6.8A | P6KE6.8CA | 5.8 | 150 | 6.45 | 7.14 | 10 | 10.5 | 57.2 |
| P6KE7.5A | P6KE7.5CA | 6.4 | 100 | 7.13 | 7.88 | 10 | 11.3 | 53.1 |
| P6KE8.2A | P6KE8.2CA | 7.02 | 50 | 7.79 | 8.61 | 10 | 12.1 | 49.6 |
| P6KE9.1A | P6KE9.1CA | 7.78 | 20 | 8.65 | 9.55 | 1 | 13.4 | 44.8 |
| P6KE10A | P6KE10CA | 8.55 | 10 | 9.50 | 10.50 | 1 | 14.5 | 41.4 |
| P6KE11A | P6KE11CA | 9.4 | 5 | 10.50 | 11.60 | 1 | 15.6 | 38.5 |
| P6KE12A | P6KE12CA | 10.2 | 2 | 11.40 | 12.60 | 1 | 16.7 | 36 |
| P6KE13A | P6KE13CA | 11.1 | 1 | 12.40 | 13.70 | 1 | 18.2 | 33 |
| P6KE15A | P6KE15CA | 12.8 | 1 | 14.30 | 15.80 | 1 | 21.2 | 28.3 |
| P6KE16A | P6KE16CA | 13.6 | 1 | 15.20 | 16.80 | 1 | 22.5 | 26.7 |
| P6KE18A | P6KE18CA | 15.3 | 1 | 17.10 | 18.90 | 1 | 25.2 | 23.8 |
| P6KE20A | P6KE20CA | 17.1 | 1 | 19.00 | 21.00 | 1 | 27.7 | 21.7 |
| P6KE22A | P6KE22CA | 18.8 | 1 | 20.90 | 23.10 | 1 | 30.6 | 19.7 |
| P6KE24A | P6KE24CA | 20.5 | 1 | 22.80 | 25.20 | 1 | 33.2 | 18.1 |
| P6KE27A | P6KE27CA | 23.1 | 1 | 25.70 | 28.40 | 1 | 37.5 | 16 |
| P6KE30A | P6KE30CA | 25.6 | 1 | 28.50 | 31.50 | 1 | 41.4 | 14.5 |
| P6KE33A | P6KE33CA | 28.2 | 1 | 31.40 | 34.70 | 1 | 45.7 | 13.2 |
| P6KE36A | P6KE36CA | 30.8 | 1 | 34.20 | 37.80 | 1 | 49.9 | 12.1 |
| P6KE39A | P6KE39CA | 33.3 | 1 | 37.10 | 41.00 | 1 | 53.9 | 11.2 |
| P6KE43A | P6KE43CA | 36.8 | 1 | 40.90 | 45.20 | 1 | 59.3 | 10.2 |
| P6KE47A | P6KE47CA | 40.2 | 1 | 44.70 | 49.40 | 1 | 64.8 | 9.3 |
| P6KE51A | P6KE51CA | 43.6 | 1 | 48.50 | 53.60 | 1 | 70.1 | 8.6 |

$T_A = 25^\circ\text{C}$, continued

| Part Number | | V_R | $I_R @ V_R$ | $V_{BR} @ I_T$ | | I_T | $V_C @ I_{PP}$ | $I_{PP}^{\text{①}}$ |
|-------------|-----------|-------|---------------|----------------|--------|-------|----------------|---------------------|
| Uni-Polar | Bi-Polar | V | μA | Min(V) | Max(V) | mA | Max(V) | A |
| P6KE56A | P6KE56CA | 47.8 | 1 | 53.20 | 58.80 | 1 | 77.0 | 7.8 |
| P6KE62A | P6KE62CA | 53.0 | 1 | 58.90 | 65.10 | 1 | 85.0 | 7.1 |
| P6KE68A | P6KE68CA | 58.1 | 1 | 64.60 | 71.40 | 1 | 92.0 | 6.6 |
| P6KE75A | P6KE75CA | 64.1 | 1 | 71.30 | 78.80 | 1 | 103.0 | 5.9 |
| P6KE82A | P6KE82CA | 70.1 | 1 | 77.90 | 86.10 | 1 | 113.0 | 5.4 |
| P6KE91A | P6KE91CA | 77.8 | 1 | 86.50 | 95.50 | 1 | 125.0 | 4.8 |
| P6KE100A | P6KE100CA | 85.5 | 1 | 95.00 | 105.0 | 1 | 137.0 | 4.4 |
| P6KE110A | P6KE110CA | 94.0 | 1 | 105.0 | 116.0 | 1 | 152.0 | 4.0 |
| P6KE120A | P6KE120CA | 102.0 | 1 | 114.0 | 126.0 | 1 | 165.0 | 3.7 |
| P6KE130A | P6KE130CA | 111.0 | 1 | 124.0 | 137.0 | 1 | 179.0 | 3.4 |
| P6KE150A | P6KE150CA | 128.0 | 1 | 143.0 | 158.0 | 1 | 207.0 | 2.9 |
| P6KE160A | P6KE160CA | 136.0 | 1 | 152.0 | 168.0 | 1 | 219.0 | 2.8 |
| P6KE170A | P6KE170CA | 145.0 | 1 | 162.0 | 179.0 | 1 | 234.0 | 2.6 |
| P6KE180A | P6KE180CA | 154.0 | 1 | 171.0 | 189.0 | 1 | 246.0 | 2.5 |
| P6KE200A | P6KE200CA | 171.0 | 1 | 190.0 | 210.0 | 1 | 274.0 | 2.2 |
| P6KE220A | P6KE220CA | 185.0 | 1 | 209.0 | 231.0 | 1 | 328.0 | 1.9 |
| P6KE250A | P6KE250CA | 214.0 | 1 | 237.0 | 263.0 | 1 | 344.0 | 1.8 |
| P6KE300A | P6KE300CA | 256.0 | 1 | 285.0 | 315.0 | 1 | 414.0 | 1.5 |
| P6KE350A | P6KE350CA | 300.0 | 1 | 332.0 | 368.0 | 1 | 482.0 | 1.3 |
| P6KE400A | P6KE400CA | 342.0 | 1 | 380.0 | 420.0 | 1 | 548.0 | 1.1 |

① Surge waveform: 10/1000 μs

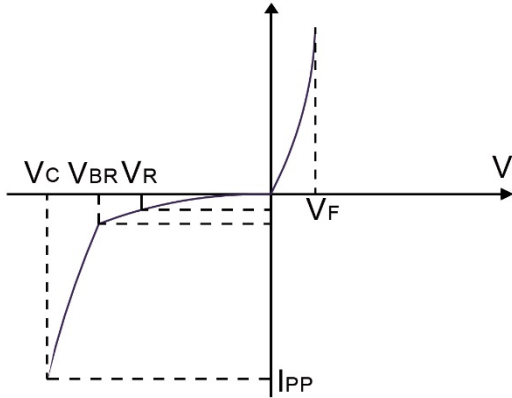
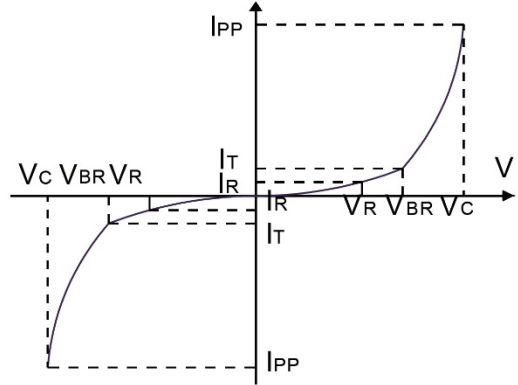
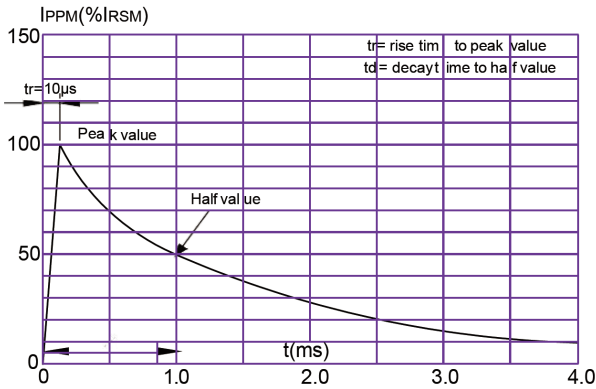
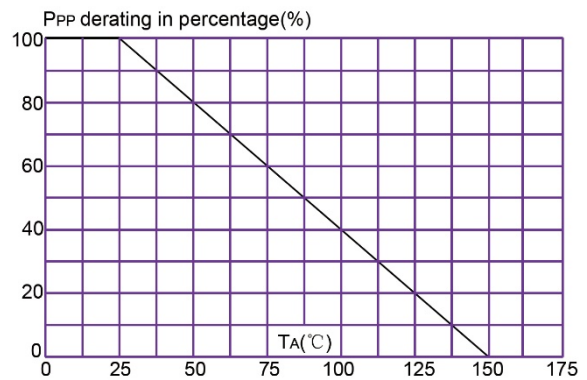
V_R : Stand-off Voltage -- Maximum voltage that can be applied

V_{BR} : Breakdown Voltage

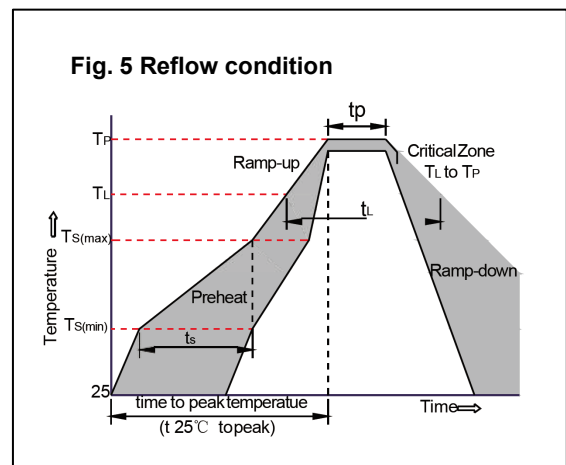
V_C : Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{PP}

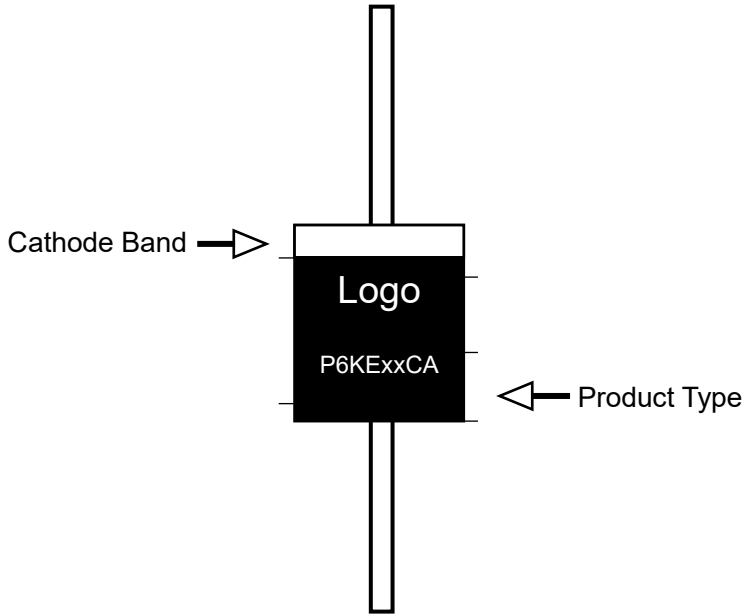
I_R : Reverse Leakage Current

额定值和 V-I 特性曲线
RATINGS AND V-I CHARACTERISTICS CURVES
 $T_A=25^{\circ}\text{C}$, unless otherwise noted

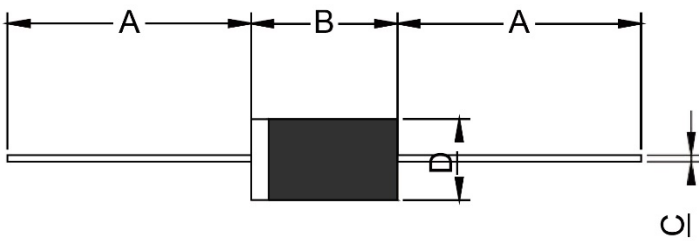
Fig.1: V-I curve characteristics (Uni-directional)

Fig.2: V-I curve characteristics (Bi-directional)

Fig.3: Pulse waveform

Fig. 4 Pulse derating curve

焊接参数
SOLDERING PARAMETERS

| | | |
|---|------------------------------------|------------------------------|
| Reflow Condition | | Pb-Free assembly (see FIG.5) |
| Pre Heat | -Temperature Min ($T_{s(\min)}$) | +150°C |
| | -Temperature Max($T_{s(\max)}$) | +200°C |
| | -Time (Min to Max) (t_s) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp (T_L) to peak) | | 3°C/sec. Max |
| $T_{s(\max)}$ to T_L - Ramp-up Rate | | 3°C/sec. Max |
| Reflow | -Temperature(T_L)(Liquid us) | +217°C |
| | -Temperature(t_L) | 60-150 secs. |
| Peak Temp (T_p) | | +260(+0/-5)°C |
| Time within 5°C of actual Peak Temp (t_p) | | 30 secs. Max |
| Ramp-down Rate | | 6 °C/sec. Max |
| Time 25°C to Peak Temp (T_p) | | 8min. Max |
| Do not exceed | | +260°C |

Fig. 5 Reflow condition


标记和订购信息
MARKING & ORDERING INFORMATION


- | | | | |
|------|-----|-----|-----|
| P6KE | XX | C | A |
| (1) | (2) | (3) | (4) |
- (1) Series:600 watts series
 (2) Reverse Stand-off Voltage
 (3) Bi-directional
 (4) 5% V_{BR} Voltage tolerance

机械数据
PACKAGE MECHANICAL DATA


| Ref. | Dimensions | | | |
|------|------------|-------|-------------|------|
| | Inches | | Millimeters | |
| | Min. | Max. | Min. | Max. |
| A | 1.000 | - | 25.40 | - |
| B | 0.228 | 0.300 | 5.80 | 7.62 |
| C | 0.027 | 0.035 | 0.69 | 0.89 |
| D | 0.118 | 0.140 | 3.00 | 3.60 |

| Part Number | Case Type | Quantity | Packing Option |
|-------------|----------------|----------|----------------|
| P6KEXXCA/A | DO-15/DO-204AC | 2000 | Box |