


规格书

SPECIFICATION

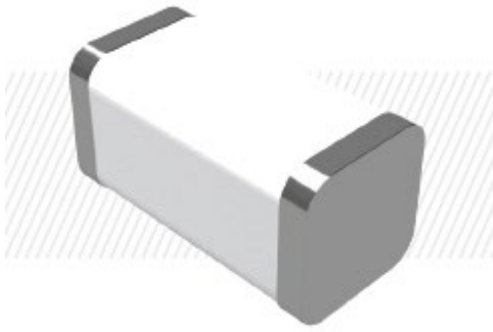
| | |
|----------------------|------------------|
| 客户 CUSTOMER | 立创商城 |
| 客户料号 CUSTOMER P/N | |
| 规格描述 DESCRIPTION | 90V/4532/2KA/10次 |
| 产品编码 PART NUMBER | 3-ACPA4532-090LF |
| 日期 DATE | 2025-08-05 |

| 德尔创承认栏 APPROVED BY DERSONIC | | | 客户承认栏 APPROVED BY CUSTOMER | |
|--------------------------------|---|--------------------|-------------------------------|----------------|
| 批准 APPROVED BY | 审核 CHECK BY | 制订 FORMULATE BY | 批准 APPROVED BY | 审核 CHECK BY |
| |  | | | |

东莞市德尔创电子有限公司

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特性 Features

- 快速响应 Fast Response
- 性能稳定, 超过表面寿命 Stable Performance Over Surface Life
- 高额定电流 High Current Rating
- 低电容 Low Capacitance
- 绝缘电阻高 High Insulation Resistance
- 符合 RoHS 和 REACH RoHS & REACH Compliant

描述 Description (IEC 61643-312;GB/T18802.312)

气体放电管 (GDT) 是在金属电极和金属化陶瓷之间的空间中填充一定比例的惰性气体或混合气体或其他放电介质, 然后在高温下密封, 形成单一或多间隙开关式保护装置。当被保护电路或设备遭受浪涌时, GDT 会由高阻抗状态变为低阻抗状态, 释放浪涌能量, 降低电路的残压, 从而瞬态过电压保护设备或人体免受危害。The Gas Discharge Tube (GDT) is a protective device which is filled with certain proportion of noble gas, or mixed gas or other discharge media in the space between metal electrodes and metalized ceramics, and then sealed at high temperature to form a single gap or multi-gap switch type protective device. When the protected circuit or equipment suffers to surge, GDT will change from high impedance state to low impedance state and release the surge energy to reduce the residual voltage of the circuit, and then protect the equipment or humanbody from the hazard of transient overvoltage.

1 安规认证 Safety Standards Approval

| | |
|---------------------------|------------|
| 安规标准 Standard No. | UL497B |
| 档案编号 File No. | E223314 |
| 认证型号 Certified Model/Type | 4532-090LF |



2 产品信息 Product Information

2.0 产品结构 Product Structure

在有电极和金属化陶瓷组成腔体内冲入一定比例惰性混合气体, 经过高温焊接形成的密闭 器件, 后期根据客户需要在两端电极焊接引线或不同连接。the vacuum component is filled with the fit Noble or mixed gas between the metal electrode and the metallized ceramic and welding them together by the high temperature and whether subjoin the wire and connection shape according to customer' s requirement.

2.1 主要材质 Main Material

电极 Electrode, 瓷管 Ceramic, 焊片 Brazing material, 引脚 Lead foot (SMD 无引脚 No Lead foot)

2.2 外观 Appearance

不可有脏污, 破损, 印字不可模糊 Without dirt and crack, marking should be clear

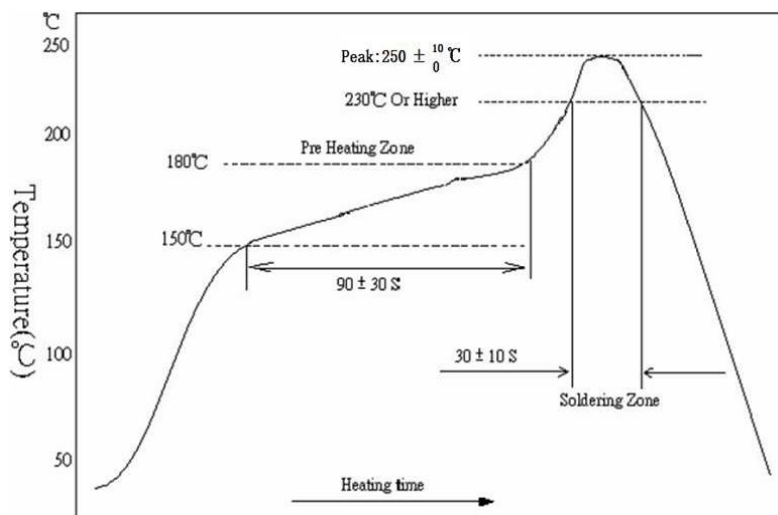
2.3 电镀 Plating

电极 Electrode: ☒ 镀锡 Plating Tin; ☐ 镀镍 Plating nickel; 引脚 Lead foot: ☒ Plating 镀锡 Tin;




2.4 印字 Marking

蓝色 blue, 规格 Part Number :090

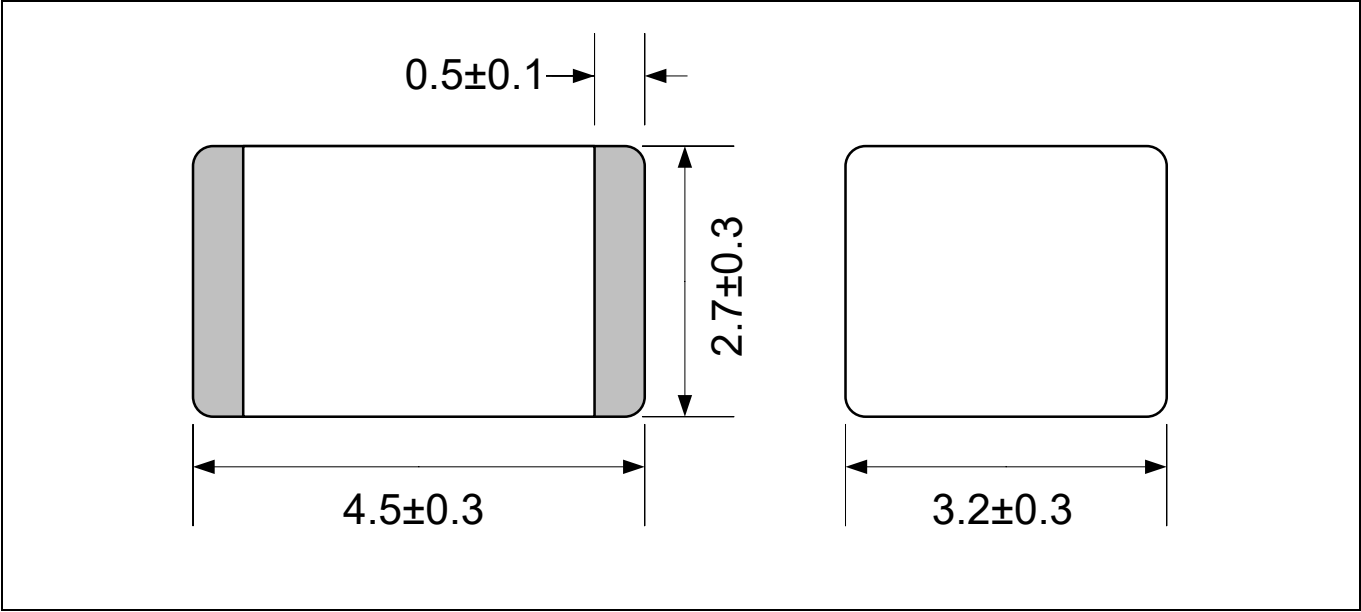
2.5 建议回流焊曲线 Reflow Profile



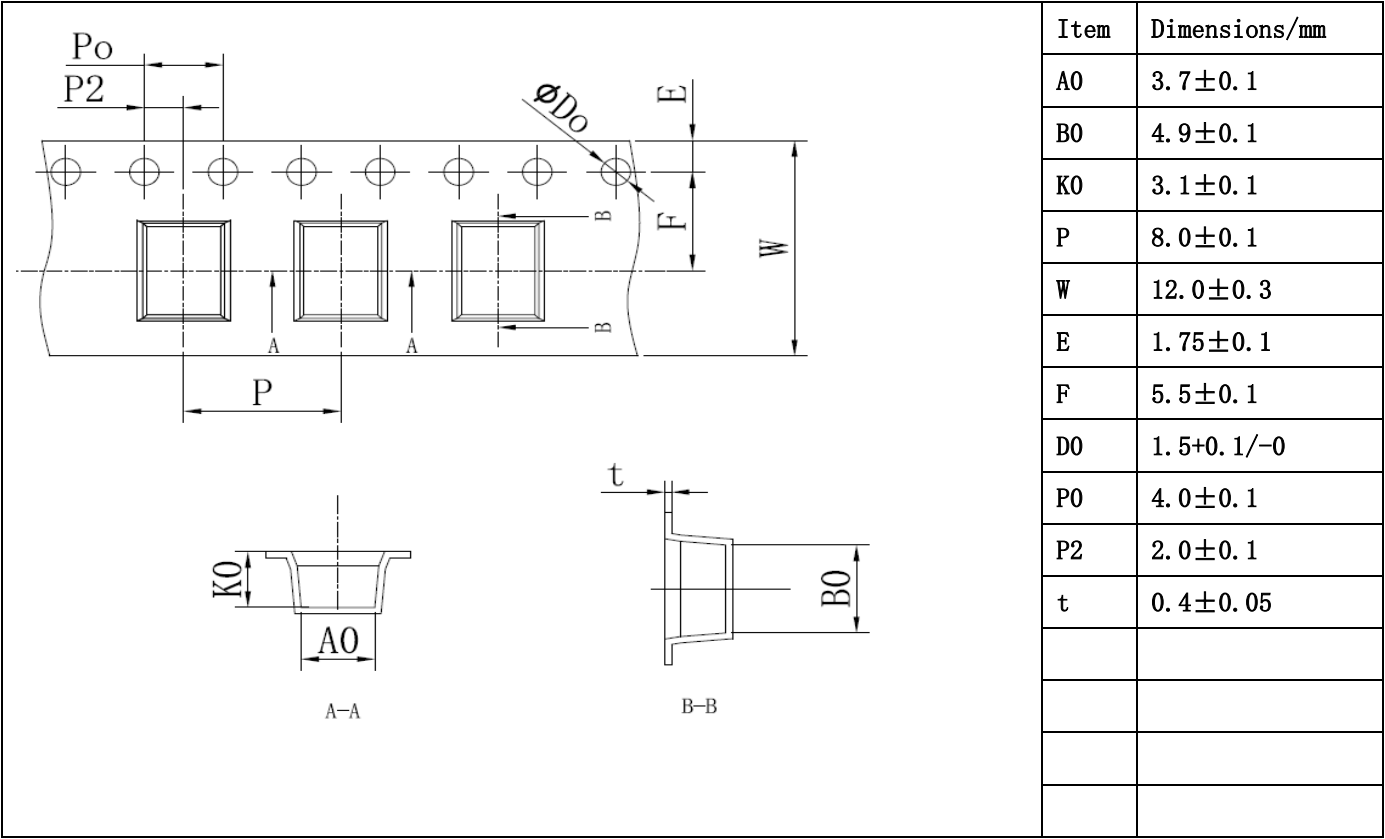
2.6 包装 packing

| | 卷 Reel | 内盒 Inner Box | 外箱 Carton |
|---------------|---|--|---|
| 尺寸 Dimensions | 330×100×12 | 335×335×65 | 360×360×360 |
| 数量 Quantity | 1 卷=2500pcs 1reel=250pcs | 1 内盒=3 卷=7500pcs 1 Inner Box =3reel=7500pcs | 1 外箱=5 内盒=37500pcs 1Carton=5 Inner Box =37500pcs |
| 图示 Photos |  |  |  |

2.7 尺寸 Dimensions: 未注明公差按 GB1804-C 级 (Not specified tolerances according to GB1804 - C level)
($0.5 \sim 3 \pm 0.2$; $>3 \sim 6 \pm 0.3$; $>6 \sim 30 \pm 0.5$; $>30 \sim 120 \pm 0.8$; $>120 \sim 400 \pm 1.2$; $>400 \sim 1000 \pm 2$;)



2.8 编带 Taping



3 技术参数 Specifications(符合 accordance with ITU-T Rec. K.12 and IEC 61643-311.)

| 规格 Model Name | 直流击穿电压 DC Breakdown Voltage | 最大冲击击穿电压 Maximum Impulse Breakdown Voltage | 最大冲击击穿电流 Maximum Impulse Discharge Current 8/20 μ s |
|------------------|--------------------------------|--|--|
| | (V) | (V) | (KA) |
| | 100~2000V/S | 1000V/ μ s | 10times |
| 4532-090LF | 90 \pm 30% | 600 | 2 |

| 规格 Model Name | 冲击耐受电压能力 Impulse Withstanding Voltage Capacity 10/700 μ s | 冲击寿命 Impulse Life | 最小绝缘电阻 Minimum Insulation Resistance | 最大电容值 Maximum Capacitance |
|------------------|--|-----------------------|--|---------------------------------|
| | (times) | (times) | (M Ω) | (pf) |
| | 6KV R=40 Ω | 8/20 μ s, 100A | Note 1 | 1MHz |
| 4532-090LF | 10 | 300 | 100 | 0.5 |

Note 1: 绝缘电阻测试条件 Insulation resistance test condition:

| | | | | | |
|-----------------------------|-------------|----------|-----------|------------|--------------|
| 直流击穿电压 DC Breakdown Voltage | $\leq 150V$ | 151~400V | 401~1000V | 1001~2000V | $\geq 2001V$ |
| 直流测量电压 DC Measuring Voltage | 50V | 100V | 250V | 500V | 1000V |

Note 2: 交货抽样标准 At delivery AQL 0.65 Level II, IN ISO 2859.

4 术语 Glossary (IEC 61643-311;GB/T18802.311)

4.0 气体放电管 Gas Discharge Tube

由密封在不同大气压下空气的放电介质中单间隙或多间隙组成的器件，用于保护电器和人身免受瞬态过电压的危害。A gap, or several gaps, in an enclosed discharge medium, other than air at atmospheric pressure, designed to protect apparatus or personnel, or both, from high transient voltages.

4.1 直流击穿电压 DC Breakdown (Spark-over) Voltage (V_s)

在没有施加电压时，GDT 至少放置 15min，并在这种情况下，以电压上升速率为 100V/S~2000V/S 进行测试。The GDT shall be placed for at least 15min when no voltage is applied, the test shall be conducted at a voltage rise rate of 100v/s~2000v/s under this circumstances.

4.2 最大冲击击穿电压 Maximum Impulse Breakdown Voltage (V_{si})

通过 GDT 测量的被测端子的最大电压标称上升速率为 100V/ μ s 或 1000V/ μ s 或 5000V/ μ s。The maximum voltage rise rate of the measured terminal measured by GDT is 100V/ μ s, 1000V/ μ s, or 5000V/ μ s.

4.3 最大冲击放电电流 Maximum Impulse Discharge Current

GDT 可承受的 1 次,多次或正负各 N 次的最大冲击电流值(电流波形 8/20 μ S 或 10/350 μ S)，多次或 N 次冲



击每次间隔 3 分钟。GDT can withstand 1 time, More than once or positive and negative each N times of the maximum impact current value (current waveform $8/20\mu\text{s}$ or $10/350\mu\text{s}$), More than once or N times of impact each interval of 3 minutes.

4.4 冲击耐受电压能力 Impulse Withstanding Voltage Capacity

以额定最大放电电流(开路电压波形 $10\times 700\mu\text{s}$), GDT 应可承受正负各 5 次, 每次间隔 3 分钟。At the rated maximum discharge current (open circuit voltage waveform $10\times 700\mu\text{s}$), the GDT shall be able to withstand plus or minus 5 times each at an interval of 3 minutes

4.5 标称交流放电电流 Nominal Discharge Current

对产品施加频率 $50\text{Hz}\times 1\text{秒}\times 10\text{次}$ (每次间隔时间 3 分钟) 或 Single 9cycles 交流电流的额定有效值。Apply rated RMS of ac current of $50\text{Hz}\times 1\text{second multiply } 10\text{ times}$ (each interval is 3 minutes) or Single 9cycles to the product.

4.6 续流 Follow On Current

在标准的试验回路施加交流电(工频电流应用电阻限制), 对 GDT 产品施加一个冲击电流使其处于导通状态, 同时连接之交流电源提供的流过 GDT 产品的电流。An alternating current is applied to the standard test circuit (power frequency current is limited by resistance), and a shock current is applied to the GDT product so that it is on, while the current flowing through the GDT product is provided by the connected AC power supply.

4.7 响应时间 Breakdown time

用固定电压上升陡度之电压源 ($1000\text{V}/\mu\text{s}$ 或 $5000\text{V}/\mu\text{s}$) 加到 GDT 两端测量响应时间 (从暂态过电压开始作用于放电管两端的时刻到产品实际放电时刻之间有一个延迟时间)。A voltage source with a fixed voltage gradient ($1000\text{V}/\mu\text{s}$ or $5000\text{V}/\mu\text{s}$) is applied to both ends of the GDT to measure the response time (there is a delay time between the moment when the transient overvoltage starts acting on both ends of the discharge tube and the actual discharge time of the product)

4.8 最大持续工作电压 Maximum continuous operating voltage

产品正常工作时可施加的最大连续交流/直流电压。Maximum continuous AC/DC voltage that can be applied when the product is in normal operation.

4.9 冲击寿命 Impulse Life

GDT 可以承受额定次数的电流冲击 (电流波形: $8/20\mu\text{s}$ 、 $10/1000\mu\text{s}$ 或 $5/320\mu\text{s}$), 各次冲击的间隔时间 3 分钟。The GDT can withstand rated times of current shock (current waveform: $8/20\mu\text{s}$, $10/1000\mu\text{s}$ or $5/320\mu\text{s}$), The interval of each shock is 3 minutes.

4.10 直流过保持电压 DC Holdover Voltage

在规定的电路条件下, GDT 经一次冲击放电后, 它从导通并恢复到高阻抗状态时施加的直流电压 (直流试验电压分为 $52\text{V}/80\text{V}$ 和 135V 三档)。Under the specified circuit conditions, GDT after a shock discharge, it from the conduction and restore to the high impedance state of the applied DC voltage (DC test voltage is divided into $52\text{V}/80\text{V}$ and 135V three grades).

4.11 最小绝缘电阻 Minimum Insulation Resistance

在 GDT 的两端点间施加额定电压, 测量电阻值。A rated voltage is applied between the two endpoints of the GDT to measure the resistance.



- 4.12 最大电容值 Maximum Capacitance
使用测试频率 1MHz 与测试电压 0.5V 在 GDT 两端间测量电容值。Measure the capacitance between the two ends of the GDT using a test frequency of 1MHz and a test voltage of 0.5V.
- 4.13 弧光电压 Arc Voltage
在低阻抗或正常动作状态下, 弧光电流流过气体放电管时的电压降。The voltage measured across the tube while in lowest impedance state or arc mode.
- 4.14 辉光电压 Glow Voltage
流过辉光电流时跨越放电管电压降的峰值。The peak value of the voltage drop across the GDT when a glow-current is flowing.
- 4.15 AC/DC 耐压 AC/DC withstand Voltage
通过高压设备对产品施加一定 (AC/DC) 电压的测试, 确保产品不被击穿。By applying a certain voltage (AC/DC) to the product through high voltage equipment test, to ensure that the product is not broken down.
- 5 技术条件及测试方法 Technical Term or Test methods
- 5.1 储存条件 Storage conditions (-40°C~105°C)
储存条件无施加电压 Storage conditions without voltage applied
包装好的放电管应置于干燥、通风和无腐蚀的环境中。Please store products in the environments of dry, ventilation and no-corrosion, 期限一年 period One year.
- 5.2 工作温度范围 Operational temperature (-40°C~105°C)
GDT 应能够在工作条件下耐受而不会损坏 Gas discharge tubes shall be capable of withstanding during operational conditions without damage
- 5.3 测试方法 Test methods:
除非另有说明, 所有的测试时在下述的环境条件下进行。Unless otherwise specified, all tests are made under environmental conditions as given below, 温度 Temperature: 15~35°C, 相对湿度 Relative humidity: 25~80%RH.
- 6 注意事项 Warning
- 6.1 在电源线路中最大运行电压超过气体放电管的最小开启电压, 不能使用气体放电管。Do not operate gas discharge tube in power supply networks, whose maximum operation voltage exceeds the minimum spark-overvoltage of the gas discharge tube.
- 6.2 气体放电管在电流长时间压力下会变热 (起火)。这种过载将使连接器失效或器件损坏。Gas discharge tube may become hot in the event of longer periods of current stress (burn risk). In the event of overload the connectors may fail or the component may be destroyed.
- 6.3 如果气体放电管的接触有缺陷, 超载的电流能引产生火花和大的噪音。If the contacts of the surge arresters are defective, current load can cause sparks and loud noises.
- 6.4 气体放电管必须小心轻放, 不得跌落。Gas discharge tube must be handled with care and must not be dropped.



6.5 损坏的放电管不能继续使用。Do not continue to use damaged gas discharge tube.

7 规格书之有效性 Validity

- 7.1 本承认书的内容若有不充分或有必要修订时，得由两公司协议后再行修订。If the content of these specifications is inadequate or need revising, it will be revised after both parties' agreement.
- 7.2 本承认书提出后，于贵公司承认期间，可暂时使用，若经过 1 个月后贵公司无异议或无签回承认时，则视同有效文件运用，如有变更另行通知。The specifications can be used temporarily during the period of approval. If you have no any objection or not return one hardcopy to us within one month, these specifications will be operated as a valid document. If any change, we will inform you.

