



江苏宇飞特电子科技有限公司

承认书

SPECIFICATION FOR APPROVAL

客户名称:

CUSTOMER _____

产品名称:

PART NAME _____

SMD 塑封压敏电阻器

产品规格:

PART NUMBER _____

YFTV4032系列

日期:

DATE _____

2024/04/30

供应商确认签章栏		
品质部	工程部	批准
谢超	赵朴林	于光哲

客户确认签章栏		
品质部	工程部	批准

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Part No: YFTV4032 series	Rev: 0/A (2024-04-30)
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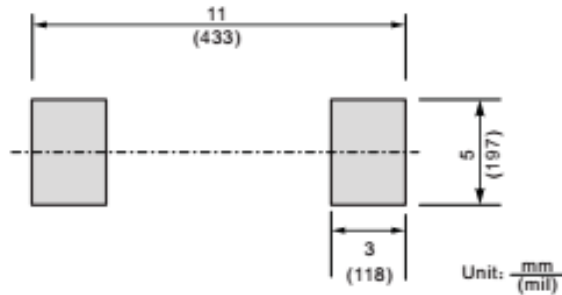
1. Appearance 外形尺寸

1-1. Marking 标志	V4032-471KJ Product Spec. 产品规格 240602 Batch no. 生产批号
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1-2. Dimensional Drawing (mm) 尺寸

UNIT		E	W	A	L	A1	A2	d	L1	C
mm	max	10.2	8.6	4.3	11.0	0.15	2.15	3.1	2.0	0.20
	min	9.8	8.2	4.1	10.4	0.10	2.00	2.9	1.5	0.15

1-3. Recommended solder pad layout (mm) 焊盘布局



2. Part numbering 命名方式

YFT	V	4032	471	K	J
Yu Fei Te	Plastic Varistors	Product Size 产品尺寸 mm	Varistor Voltage 压敏电压 V	Tolerance 压敏电压允差	High flux energy 高通流能量
宇飞特	塑封压敏电阻	10.0*8.4	470	±10%	J-高焦耳 H-高能

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3. Electrical Characteristics 电气参数

(Ta=25°C)

SMD Types 产品型号	Maximum Allowable Voltage 可容许最大电压		Withstanding Surge Current (8/20 μs) 突波电流耐量		Energy 能量 (10/1000μs)	Rated Power 额定功率
	V _{ACRMS} [V]	V _{DC} [V]	1 time[A]	2 times[A]	(1 time)[J]	[mW]
YFTV4032-221KJ	140	180	2500	1500	18.0	250
YFTV4032-241KJ	150	200	2500	1500	18.5	250
YFTV4032-271KJ	175	225	2500	1500	21.0	250
YFTV4032-331KJ	210	275	2500	1500	22.0	250
YFTV4032-361KJ	230	300	2500	1500	23.0	250
YFTV4032-391KJ	250	320	2500	1500	25.0	250
YFTV4032-431KJ	275	350	2500	1500	29.0	250
YFTV4032-471KJ	300	385	2500	1500	31.0	250
YFTV4032-511KJ	320	415	2500	1500	33.0	250
YFTV4032-561KJ	350	455	2500	1500	33.0	250
YFTV4032-621KJ	385	505	2500	1500	35.0	250
YFTV4032-681KJ	420	560	2500	1500	35.0	250

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SMD Types 产品型号	Maximum Allowable Voltage 可容许最大电压		Withstanding Surge Current (8/20 μ s) 突波电流耐量		Energy 能量 (10/1000 μ s)	Rated Power 额定功率
	V _{ACRMS} [V]	V _{DC} [V]	1 time[A]	2 times[A]	(1 time)[J]	[mW]
YFTV4032-221KH	140	180	3500	2000	46	100
YFTV4032-241KH	150	200	3500	2000	51	100
YFTV4032-271KH	175	225	3500	2000	58	100
YFTV4032-331KH	210	275	3500	2000	64	100
YFTV4032-361KH	230	300	3500	2000	69	100
YFTV4032-391KH	250	320	3500	2000	75	100
YFTV4032-431KH	275	350	3500	2000	82	100
YFTV4032-471KH	300	385	3500	2000	89	100
YFTV4032-511KH	320	415	3500	2000	100	100
YFTV4032-561KH	350	455	3500	2000	102	100
YFTV4032-621KH	385	505	3500	2000	102	100
YFTV4032-681KH	420	560	3500	2000	102	100

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3. Electrical characteristics 电气参数 (Ta=25℃)

SMD Types 产品型号	Varistor Voltage at 1 mA 压敏电压	Max Clamping Voltage at Class Current 最大抑制电压	Capacitance 电容量
	[V](±10%)	[V]	@1kHz [pF]
YFTV4032-221KJ	220	360	250
YFTV4032-241KJ	240	395	200
YFTV4032-271KJ	270	455	170
YFTV4032-331KJ	330	550	150
YFTV4032-361KJ	360	595	140
YFTV4032-391KJ	390	650	130
YFTV4032-431KJ	430	710	110
YFTV4032-471KJ	470	775	100
YFTV4032-511KJ	510	845	90
YFTV4032-561KJ	560	925	80
YFTV4032-621KJ	620	1025	75
YFTV4032-681KJ	680	1120	70

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SMD Types 产品型号	Varistor Voltage at 1 mA 压敏电压	Max Clamping Voltage at Class Current 最大抑制电压	Capacitance 电容量
	[V](±10%)	[V]	@1kHz [pF]
YFTV4032-221KH	220	360	450
YFTV4032-241KH	240	395	420
YFTV4032-271KH	270	455	370
YFTV4032-331KH	330	550	340
YFTV4032-361KH	360	595	300
YFTV4032-391KH	390	650	280
YFTV4032-431KH	430	710	260
YFTV4032-471KH	470	775	230
YFTV4032-511KH	510	845	210
YFTV4032-561KH	560	925	200
YFTV4032-621KH	620	1025	180
YFTV4032-681KH	680	1120	150

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4. Mechanical Characteristics 机械性能

Item 指标项目	Specification 技术要求	Description 说明
Tensile 引出端拉伸强度	The lead wire is not broken and the resistor is not damaged. Pressure sensitive voltage change rate within $\pm 5\%$. 引线无断裂，电阻器无损伤。压敏电压变化率在 $\pm 5\%$ 以内。	Referring to GBT10193-1997(4.10) , UA1 UUB UC and Ud are quoted in IEC 43-2-21 to carry out the strength test of the leading end. 10 n tensile force . 参照 GBT10193-1997 第 4.10，引用 IEC 43-2-21 中规定 Ua1、Ub、Uc 和 Ud 进行引出端强度试验。引出端施加10N拉力。
Vibration 振动	No significant mechanical damage. The rate of change of voltage is less than 10% . 无明显机械损伤。压敏电压变化率小于10%。	The test sample should be tested according to the GB 2423.10 Test Fe, the frequency is 10-55 Hz, the displacement amplitude is 0.75 mm, along the test sample x, Y two directions vibration 2Hr. 试验样品应根据GB 2423.10试验Fe进行试验，频率为10-55Hz，位移幅值为0.75mm，沿试验样品X, Y两个方向各振动2Hr。
Solderability 可焊性	About 95 % of the lead end is evenly covered by solder. Not less than 90 % of wetting force. 引线末端约95%被焊锡均匀覆盖。不小于润湿力的90。	Referring to GBT10193-1997(4.11) , IEC 43-2-20 test method is used to insert the varistor (5 + 1) mm / s ~ (20 + 1) mm / s) into the molten solder at the temperature of (235 \pm 0.5) ° C for 5 S. 参照GBT10193-1997第4.11，引用IEC 43-2-20的试验方法，焊料温度 (235 \pm 0.5) °C，将压敏电阻器以 (5+1) mm/s~ (20+1) mm/s的速度侵入熔融焊料中1.5至规定的深度，并保持5 S。
Welding heat resistance 耐焊接热	No significant mechanical damage. Pressure sensitive voltage change rate within $\pm 5\%$. 无明显机械损伤。压敏电压变化率在 $\pm 5\%$ 以内。	According to 4.12 of GBT10193-1997 and the test Tb method stipulated in IEC 43-2-20, the pins of the psa were impregnated in a welding groove at (260 \pm 5) ° C for (10+1) s. 参照GBT10193-1997第4.12，引用IEC 43-2-20规定试验Tb方法，将压敏电阻器的引脚浸渍于 (260 \pm 5) °C 的焊槽中，持续 (10+1) s。

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5. Environmentalb 耐候特性

Characteristics 项目	Test Methods 试验方法	Specifications 性能要求
High Temperature Storage 高温存储	The specimen shall be subjected to $125\pm 2^{\circ}\text{C}$ for 1000 hours in a thermostatic bath without load and then be stored at room temperature and normal humidity for 1 to 2 hours. The change of $V_{1\text{mA}}$ shall be measured. 在 $125\pm 2^{\circ}\text{C}$ 无负荷存放 1000 小时, 其后在室温状态下, 1 到 2 小时以内, 测量 $V_{1\text{mA}}$ 。	$ \Delta I_{\text{mA}}/V_{1\text{mA}} $ $\leq 10\%$
Humidity Storage 湿热湿热	The specimen shall be subjected to $40\pm 2^{\circ}\text{C}$, 90~95%RH for 1000hours without load and then stored at room temperature and normal humidity for 1 to 2 hours. The change of $V_{1\text{mA}}$ shall be measured. 在温度为 $40\pm 2^{\circ}\text{C}$, 湿度为 90~95%RH 中无负荷放置 1000 小时, 其后在室温状态下, 1 小时以上 2 小时以内测量 $V_{1\text{mA}}$ 。	$ \Delta V_{1\text{mA}}/V_{1\text{mA}} $ $\leq 10\%$
Low Temperature Storage 低温存储	The specimen shall be subjected to $-40\pm 2^{\circ}\text{C}$, for 1000 hours with-out load and then stored at room temperature and normal humidity for 1 to 2 hours. The change of $V_{1\text{mA}}$ shall be measured. 在温度为 $-40\pm 2^{\circ}\text{C}$, 无负荷放置 1000 小时其后在室温状态, 1 到 2 小时以内测量 $V_{1\text{mA}}$ 。	$ \Delta V_{1\text{mA}}/V_{1\text{mA}} $ $\leq 10\%$
Temperature Cycle 温度快速变化	The specimen shall be subjected to $-40\pm 2^{\circ}\text{C}$, then to $125\pm 2^{\circ}\text{C}$. At each temperature the specimen shall be stored for 30 minutes. The temperature cycle shall be applied for 5 times. 下限类别温度 $-40\pm 2^{\circ}\text{C}$, 上限类别温度 $125\pm 2^{\circ}\text{C}$, 共五个循环, 每个极限温度下放置 30 分钟, 进行外观检查和 $V_{1\text{mA}}$ 测量。	No remarkable mechanical damage $ \Delta V_{1\text{mA}}/V_{1\text{mA}} $ $\leq 10\%$ 无可见损伤
High Temperature Load 高温负荷	After being continuously applied the max. allowable voltage at $125\pm 2^{\circ}\text{C}$ for 1000 hours and then stored at room temperature and normal humidity for 1 to 2hours. Thereafter, the change of $V_{1\text{mA}}$ shall be measured. 在 $125\pm 2^{\circ}\text{C}$ 的温度下, 施加最大连续电压 1000 小时; 然后, 在室温状态下, 1 到 2 小时以内进行 $V_{1\text{mA}}$ 测量。	$ \Delta V_{1\text{mA}}/V_{1\text{mA}} $ $\leq 10\%$
Humidity Load 湿热负荷	The specimen shall be subjected to $40\pm 2^{\circ}\text{C}$, 90~95%RH and the max. allow able voltage for 1000 hours and then stored at room temperature and normal humidity for 1to 2hours. Thereafter, the change of $V_{1\text{mA}}$ shall be measured. 在温度为 $40\pm 2^{\circ}\text{C}$, 湿度为 90~95%RH 中, 施加最大连续电压 1000 小时, 其后在室温状态下, 1 到 2 小时以内测量 $V_{1\text{mA}}$ 。	$ \Delta V_{1\text{mA}}/V_{1\text{mA}} $ $\leq 10\%$

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6. Features 特点

- Improved component design in a compact case. 改善产品的设计空间
- High surge current capability. 提供更高的产品通流量
- Superior performance at high temperature. 在更高温下使用
- Better stability and reliability under hot and humid conditions
在湿热条件下有更好的稳定性和可靠性
- SMD mountable disk varistors, suitable for lead-free reflow / wave soldering.
片式封装结构更适合回流焊和波峰焊

7. Applications 应用领域

- Power supplies for telecommunication systems. 通讯设备功率电源
- Protection for LED circuits. LED 电路保护
- Protection for consumer, industrial equipment. 消费类、工业类设备保护
- Protection for automotive electronics. 自动化设备保护

8. Applicable standards 参照标准

- UL1449
- TUV
- CQC (GB/T10193, GB/T10194, GB4943.1, GB8898)

9. General technical data 技术要求

Parameter 项目	Value 范围	Unit 单位
Operating temperature 工作温度	-10 to +125	°C
Storage temperature 贮存温度	-10 to +45	°C
Electric strength 电气强度	≥2.5	kV _{RMS}
Insulation resistance 绝缘电阻	≥100	MΩ

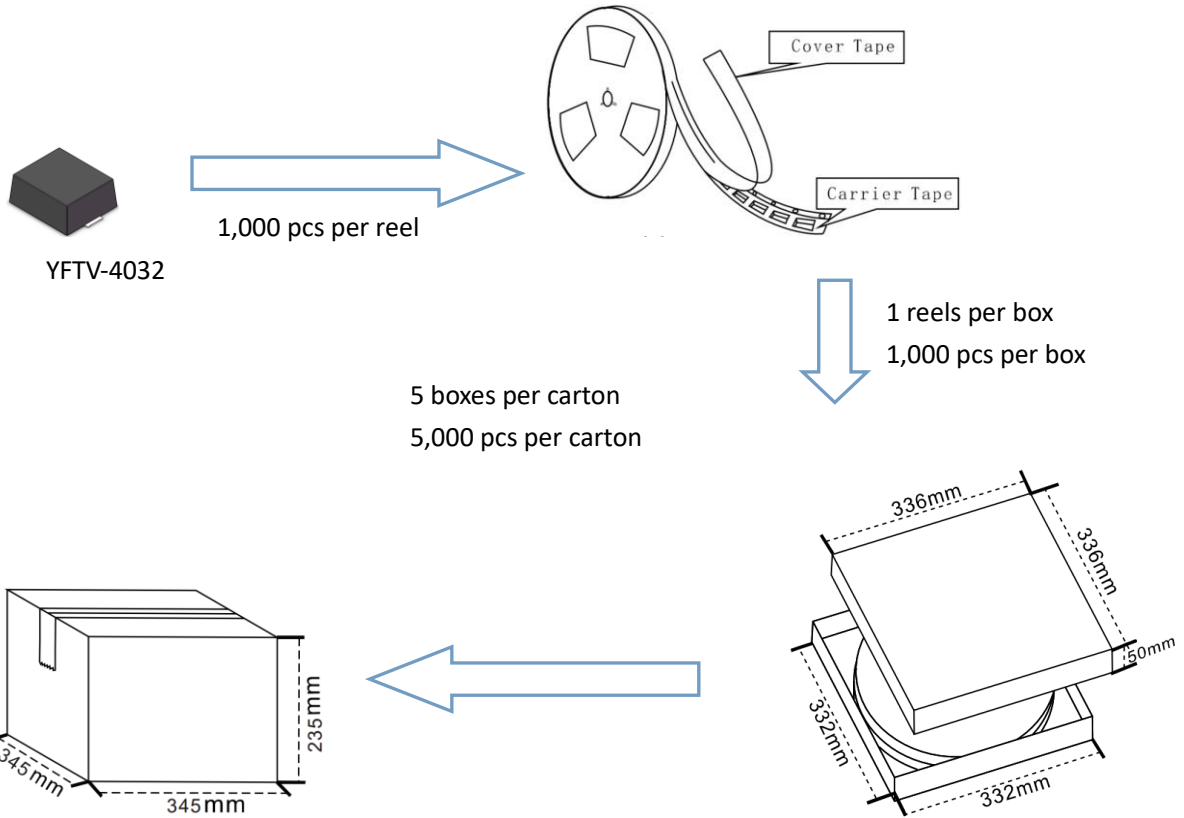
10. Storage condition 贮存条件

- As far as possible, the components should be employed within 24 months after delivery .
从入库到使用时间不大于 24 个月。
- They should be left in their original packing to avoid soldering problems due to oxidized contacts. 为防止出现焊接问题产品尽量在使用前保持原包装。
- Storage temperature: - 10 up to + 45° C. 贮存温度在-10~45° C.
- Relative humidity: < 75 % 相对湿度 <75%。

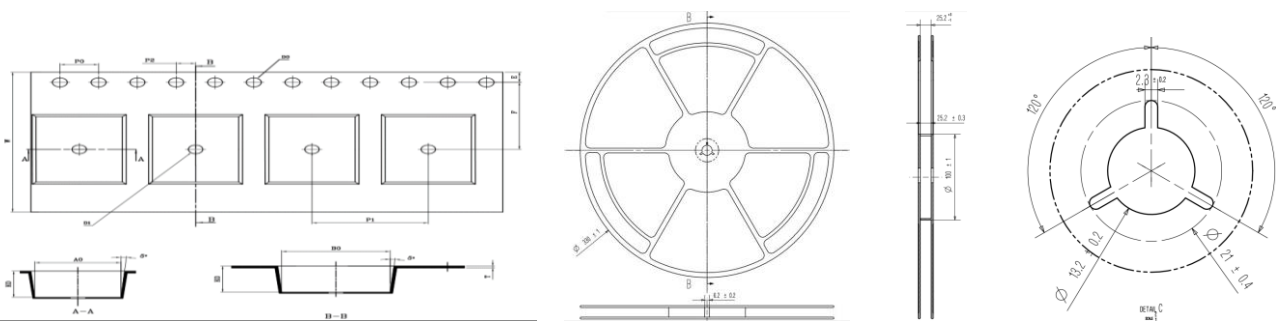
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11. The method of packaging and dimension are shown as below figure.
 (Dimension in mm) 编带尺寸



Tape and reel data(Units:mm)



code	W	E	F	D0	D1	PO	P1	P2	AO	BO	KO	T	10PO
limit 限值 mm	24.0 ±0.1	1.75 ±0.10	11.5 ±0.10	1.50 +0.10/-0	1.50 +0.1/-0	4.0 ±0.1	12.0 ±0.1	2.0 ±0.1	8.90 ±0.1	11.20 ±0.1	4.50 ±0.1	0.35 ±0.05	40.0 ±0.2

