

PART NO. EKT4032-471H

1 Electrical Characteristics

1.1 Technical Data

| | Symbol | Value | Unit |
|---|--------|----------|------|
| Maximum allowable continuous AC voltage*1 | VRMS | 300.0 | V |
| Maximum allowable continuous DC voltage | VDC | 385.0 | V |
| Varistor voltage Measured*2 | VB | 470(10%) | V |
| Typical capacitance value measured*3 | C | 230 | pF |
| Typical capacitance value tolerance | | ±40 | % |
| Maximum clamping voltage measured*4 | VC | 775 | V |
| Rated peak single pulse transient current at *5 | I P | 2500 | A |

1.2 Reference Data

| | Symbol | Value | Unit |
|---|-------------------|----------|------|
| Maximum Energy Absorption 10/1000µs | E | 60.0 | J |
| Response time | T _{rise} | <2 | ns |
| Leakage current at V _{DC} (At initial state) | I _L | <30 | µA |
| Leakage current at V _{DC} (After reliability Test) | I _{LA} | <100 | µA |
| Operating ambient temperature | | -45~+125 | °C |
| Reflow temperature profile(Recommend) | | 260 | °C |

1.3 Other Data

| | |
|------------------------|--------------|
| Body | ZnO |
| End termination | Ag/Ni/Sn |
| Packaging | Bulk/Tape |
| Complies with Standard | IEC61000-4-5 |

1.4 Notes:

| | |
|--|--|
| *1 AC voltage at 50~60Hz | Measured at 1mA DC |
| *2 Varistor voltage | Measured at f=1MHz, V _{rms} =0.5V |
| *3 Capacitance | Measured at 10A by 8/20µs Pulse |
| *4 Maximum clamping voltage | Measured by 8/20µs Pulse |
| *5 Rated peak single pulse transient current | Measured at 1mA DC |

1.5 Storage Condition

- As far as possible, the components should be employed within 24 months after delivery from Kangtai Semiconductor.
- They should be left in their original packing to avoid soldering problems due to oxidized contacts.
- Storage temperature: - 25 up to + 45°C.
- Relative humidity: < 75 % annual average, < 95 % on max. 30 days in a year.

2 Type Code Designation

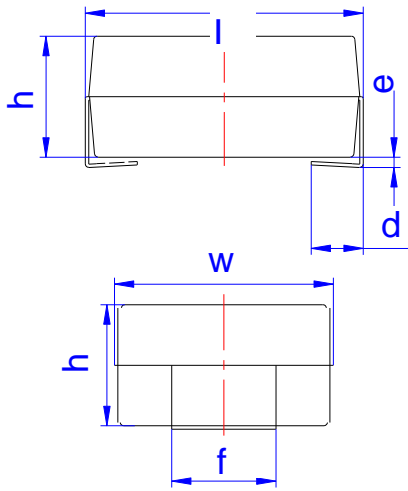
EKT
4032
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- ① EKT: Logo
- ② 4032 : Chip size —4032 (10.0 x 8.0 mm) size
- ③ 471 : Varistor voltage(Breakdown voltage) - 470Vdc
- ④ H : High absorption

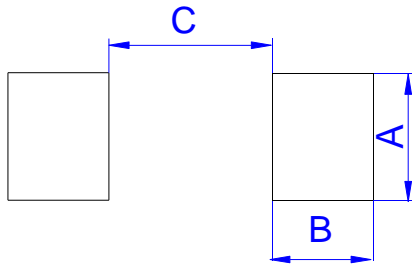
EKT PLASTIC CHIP VARISTORS

3 Dimensional drawings



| Ref. | Dimensions | | | | | |
|------|-------------|------|------|--------|------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| l | 10.1 | | 10.7 | 0.398 | | 0.421 |
| w | 7.7 | | 8.3 | 0.303 | | 0.327 |
| h | 3.6 | | 4.5 | 0.165 | | 0.189 |
| d | 1.2 | | 1.8 | 0.047 | | 0.071 |
| e | 0 | | 0.3 | 0 | | 0.012 |
| f | 2.7 | | 3.3 | 0.106 | | 0.130 |

4 Recommended solder pad layout



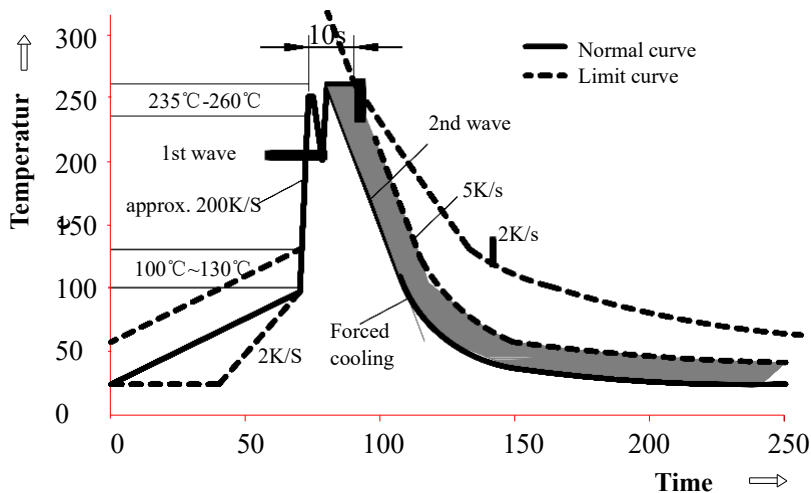
| Ref. | Dimensions | | | | | |
|------|-------------|------|------|--------|-------|------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | | 3.5 | | | 0.138 | |
| B | | 2.8 | | | 0.110 | |
| C | | 6.5 | | | 0.265 | |

5 Soldering guidelines

The usage of mild, non-activated fluxes for soldering is recommended, as well as proper cleaning of the PCB.

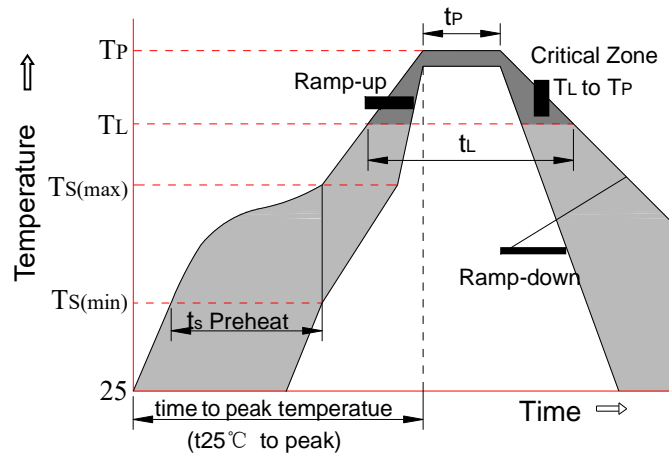
The components are suitable for reflow soldering per JEDEC J-STD-020C

5.1 Wave soldering



Temperature characteristics at component terminal with dual-wave soldering

5.2 Reflow soldering

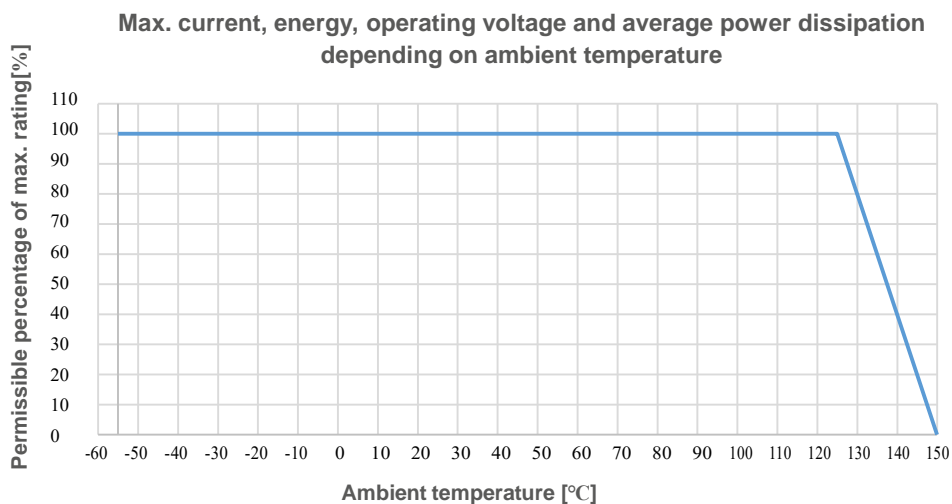


| Profile feature | | Sn-Pb assembly | Pb-Free assembly |
|---|-----------------------------|----------------------|----------------------|
| Average ramp-up rate (TSmax to TP) | | 3°C/sec. Max | 3°C/sec. Max |
| Preheat | -Temperature min. (TS(min)) | +100°C | +150°C |
| | -Temperature max.(TS(max)) | +150°C | +200°C |
| | -Time (tSmin to tSmax) | 60-120 secs. | 60-180 secs. |
| TS(max) to TL - Ramp-up Rate | | 3°C/sec. Max | 3°C/sec. Max |
| Time maintained above | -Temperature min. (TL) | +183°C | +217°C |
| | -Time (tL) | 60-150 secs. | 60-150 secs. |
| Peak classification temperature (TP) | | +220°C to +240°C | +240°C to +260°C |
| Time within 5°C of actual peak temperature (tp) | | 10 secs. to 30 secs. | 20 secs. to 40 secs. |
| Ramp-down rate | | 6°C/sec. max. | 6°C/sec. max. |
| Time 25°C to peak temperature | | 6 min. max. | 8 min. max. |

Notes: All temperature refer to topside of the package, measured on the package body surface

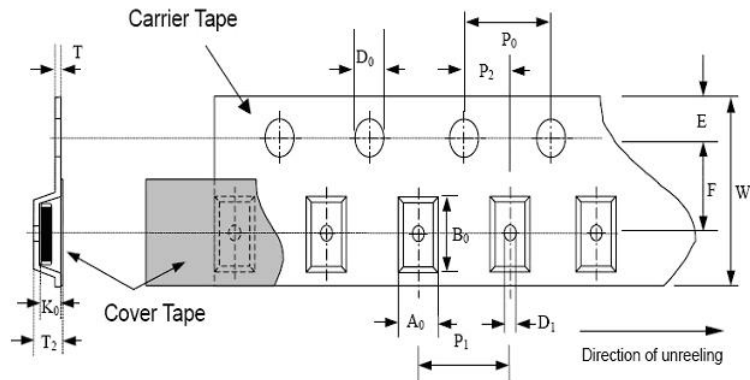
Maximum number of reflow cycles: 3

6 Temperature derating curve



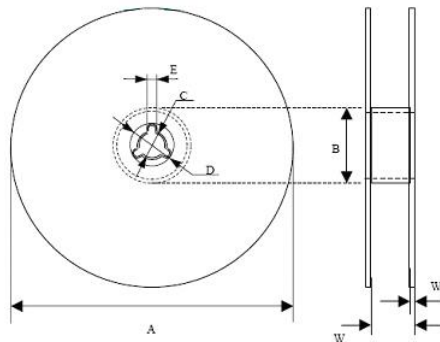
7 Taping and packaging Specification

7.1 Packaging Specification



| type | A ₀ | B ₀ | K ₀ | T | T ₂ | D ₀ | D ₁ | P ₁ | P ₂ | P ₀ | W | E | F |
|------|----------------|----------------|----------------|-----|----------------|----------------|----------------|----------------|----------------|----------------|-------|-------|-------|
| | ±0.20 | ±0.20 | ±0.10 | max | max | +0.05 | ±0.05 | ±0.10 | ±0.05 | ±0.1 | ±0.30 | ±0.10 | ±0.05 |
| 3220 | 7.0 | 8.7 | 3.85 | 0.3 | 5.50 | 1.55 | 1.55 | 12.00 | 2.00 | 4.00 | 16.00 | 1.75 | 7.50 |
| 4032 | 8.4 | 10.8 | 3.85 | 0.3 | 5.50 | 1.55 | 1.55 | 12.00 | 2.00 | 4.00 | 24.00 | 1.75 | 11.50 |

7.2 reel dimension



| type | A | B | C | D | E | W | W ₁ |
|------|-----------|----------|----------|----------|---------|----------|----------------|
| 4032 | 330.0±1.0 | 60.0±0.5 | 13.0±0.2 | 21.0±0.2 | 2.0±0.5 | 24.0±0.3 | 2.3±0.15 |

1) Quantity of taping packing(pcs): 1000