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# Product Termination Notification

PTN

**Product Group:** TC/Tue Jan 3, 2023/PTN-TC-005-2022-REV-0

## Discontinuation of M34 and M35 Series

**For further information, please contact your regional Vishay office.**

### CONTACT INFORMATION


#### Americas

David Bellomy
7557 Rambler Road, Suite 575
-
Dallas TX United States 75231-4142
Phone: (254)479-0010
Fax: +1 214-363-9444
David.Bellomy@vishay.com

#### Europe

Thomas Poessnecker
Dr.-Felix-Zandman-Platz 1
-
Selb  Germany D-95100
Phone: + 49 9287 712 595
Fax: + 49 9287 712 274
Thomas.Poessnecker@Vishay.com

#### Asia

Boon Hooi Tan
37?A Tampines Street ?92?, #?07?-?00
-
Singapore  Singapore 528886
Phone: +?65?-?6780?-?7759
Fax: +?65?-?6780?-?7749
Boonhooi.Tan@Vishay.com


**Description of Change:** All M34 and M35 series capacitors will be discontinued due to lack of demand/sales.

**Classification of Change:** The cost of dedicating and maintaining these products is no longer cost effective based on market demand.

**Expected Influence on Quality/Reliability/Performance:** not applicable

**Part Numbers/Series/Families Affected:** Please see materials list on the succeeding page.

**Vishay Brand(S):** Vishay

**Time Schedule:**

Last Time Buy Date: Sun Jun 4, 2023

Last Time Ship Date: Thu Jan 4, 2024

**Sample Availability:** not applicable

**Product Identification:** not applicable

**Qualification Data:** not applicable

**This PTN is considered approved, without further notification, unless we receive specific customer concerns before Thu Feb 2, 2023 or as specified by contract.**

**Issued By:** Natalia Burakevich, natalia.burakevich@vishay.com

| | | | | |
|---|---|---|---|---|
| M35C306*006*ZS* | M35C686*006*ZS* | M35C227*006*ZS* | M35C256*008*ZS* | M35C566*008*ZS* |
| M35C187*008*ZS* | M35C206*010*ZS* | M35C476*010*ZS* | M35C127*010*ZS* | M35C157*010*ZS* |
| M35C156*015*ZS* | M35C336*015*ZS* | M35C826*015*ZS* | M35C107*015*ZS* | M35C106*025*ZS* |
| M35C226*025*ZS* | M35C566*025*ZS* | M35C686*025*ZS* | M35C805*030*ZS* | M35C156*030*ZS* |
| M35C476*030*ZS* | M35C566*030*ZS* | M35C156*035*ZS* | M35C396*035*ZS* | M35C505*050*ZS* |
| M35C106*050*ZS* | M35C336*050*ZS* | M35C405*060*ZS* | M35C825*060*ZS* | M35C276*060*ZS* |
| M35C355*075*ZS* | M35C685*075*ZS* | M35C226*075*ZS* | M35C255*100*ZS* | M35C475*100*ZS* |
| M35C106*100*ZS* | M35C175*125*ZS* | M35C365*125*ZS* | M35C685*125*ZS* | M34C477K006AZSS |
| M34C337K010AZSS | M34C157K015AZSS | M34C127K025AZSS | M34C107K030AZSS | M34C686K050AZSS |
| M34C476K060AZSS | M34C336K075AZSS | M34C156K100AZSS | M34C106K125AZSS | M34C477M006AZSS |
| M34C337M010AZSS | M34C157M015AZSS | M34C127M025AZSS | M34C107M030AZSS | M34C686M050AZSS |
| M34C476M060AZSS | M34C336M075AZSS | M34C156M100AZSS | M34C106M125AZSS | M34C477K006BZSS |
| M34C337K010BZSS | M34C157K015BZSS | M34C127K025BZSS | M34C107K030BZSS | M34C686K050BZSS |
| M34C476K060BZSS | M34C336K075BZSS | M34C156K100BZSS | M34C106K125BZSS | M34C477M006BZSS |
| M34C337M010BZSS | M34C157M015BZSS | M34C127M025BZSS | M34C107M030BZSS | M34C686M050BZSS |
| M34C476M060BZSS | M34C336M075BZSS | M34C156M100BZSS | M34C106M125BZSS | |

# Product Termination Notification

**Product Group: Vishay Tantalum Capacitors / Issue Date / PTN-TC-005-2022 Rev 0**

## Discontinuation of M34 and M35 Series

**DESCRIPTION OF CHANGE:** All M34 and M35 series capacitors will be discontinued due to lack of demand/sales.

**CLASSIFICATION OF CHANGE:** Product Obsolence

**REASON FOR CHANGE:** The cost of dedicating and maintaining these products is no longer cost effective based on market demand.

**EXPECTED INFLUENCE ON QUALITY/RELIABILTY/PERFORMANCE:** N/A

**PRODUCT CATEGORY:** Capacitors, Wet Tantalum, Surface Mount, Molded Case

**PART NUMBERS/SERIES/FAMILIES AFFECTED:** M34 andM35

**VISHAY BRAND(s):** Vishay Tansitor; Vishay Sprague

**TIME SCHEDULE:**
Last Time Buy Date: June 4, 2023
Last Time Shipment Date: January 4, 2024

**SAMPLE AVAILABILITY:** N/A

**PRODUCT IDENTIFICATION:** N/A

**QUALIFICATION DATA:** N/A

**This PTN is considered approved, without further notification.**

**ISSUED BY:** Jon Rhan jon.rhan@vishay.com

**For further information, please contact your regional Vishay office.**

**CONTACT INFORMATION:**


**The Americas**
Vishay Americas Inc.
7557 Rambler Road, Suite 575
Dallas, TX 75231-4142
USA
Att: David Bellomy
Phone: (254)479-0010
Fax: +1 214-363-9444
Email: David.Bellomy@vishay.com

**Europe**
VISHAY Electronic GmbH.
Dr.-Felix-Zandman-Platz 1
Selb, D-95100
Germany
Att: Thomas Poessnecker
Phone: + 49 9287 712 595
Fax: + 49 9287 712 274
Email: Thomas.Poessnecker@Vishay.com

**Asia**
VISHAY Intertechnology Asia Pte. Ltd.
Regional Marketing Asia
37A Tampines Street 92, #07-00
Singapore 528886
Att: Boon Hooi Tan
Phone: +65-6780-7759
Fax: +65-6780-7749
Email: Boonhooi.Tan@Vishay.com

# Wet Tantalum Capacitors Surface Mount, Molded Case

## FEATURES

- Terminations: standard tin/lead (SnPb), 100 % tin (RoHS compliant) terminations available
- Very high capacitance, 10 µF to 470 µF 6 V to 125 V, - 55 °C to + 125 °C
- Very low ESR
- High ripple current capability
- Low DCL
- Model M34 wet tantalum electrolytic chip capacitors incorporate the advantages of all the varieties of electrolytic capacitors and eliminate most of the disadvantages. These units have a transient reverse voltage capability and a higher ripple current capability than any other electrolytic type with similar combinations of capacitance and case size.
- Compliant to RoHS Directive 2002/95/EC

Pb-free Available

RoHS* COMPLIANT

**Note**

* Pb containing terminations are not RoHS compliant, exemptions may apply

## PERFORMANCE CHARACTERISTICS

**Operating Temperature:** - 55 °C to + 85 °C
(to + 125 °C with voltage derating)

**Capacitance Tolerance:** At 120 Hz, + 25 °C, ± 20 % standard, ± 10 %

**DC Leakage Current (DCL Max.):** At + 25 °C and above: Leakage current shall not exceed the values listed in the Standard Ratings table.

**Life Test:** Capacitors are capable of withstanding a 2000 h life test at a temperature of + 85 °C or + 125 °C at the applicable rated DC working voltage.

Following life test:

1. DCL, measured at + 85 °C rated voltage, shall not be in excess of the original requirement.
2. The equivalent series resistance shall not exceed 150 % of the initial requirement.
3. Change in capacitance shall not exceed 10 % from the initial measurement.

## APPLICATION NOTES

a) No continuous reverse voltage permissible.

b) Transient reverse voltage surges are acceptable under the following conditions:
The peak reverse voltage does not exceed 1.5 V and the peak current times the duration of the reverse transient does not exceed 0.05 A. In addition, the repetition frequency of the reverse voltage surge is less than 10 Hz.

c) The peak of the applied AC ripple and the applied DC voltage must not exceed the DC voltage rating of the capacitor.

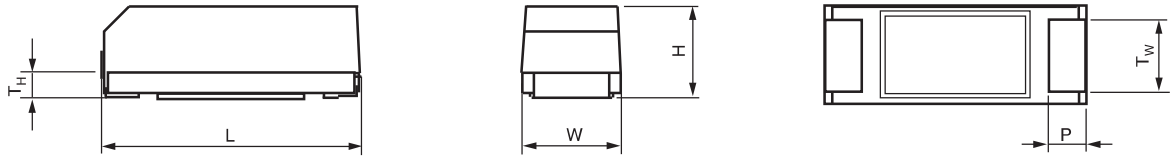
## ORDERING INFORMATION

| M34 | C | 826 | M | 125 | B | Z | S | S |
|---|---|---|---|---|---|---|---|---|
| MODEL | CASE CODE | CAPACITANCE | CAPACITANCE TOLERANCE | DC VOLTAGE RATING AT + 85 °C | TERMINATION AND PACKAGING | RELIABILITY LEVEL | TEMP | ESR |
| | See Ratings and Case Codes table | This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow. | K = ± 10 %<br>M = ± 20 % | This is expressed in volts. To complete the three-digit block, zeros precede the voltage rating. | A = 100 % tin (RoHS compliant), bulk<br>B = Std, tin/lead, bulk | Z = Non-ER | S = Std | S = Std |

**Note**

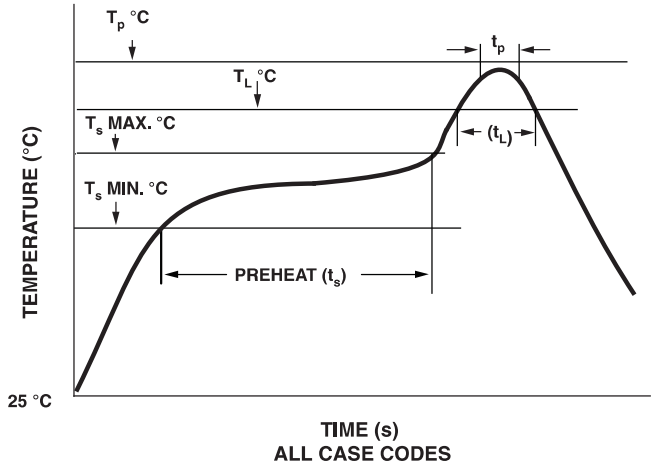
- Packaging: The use of formed plastic tubes for packing bulk components is standard

## DIMENSIONS in inches [millimeters]




| CASE CODE | L (MAX.) | W | H | P (MIN.) | $T_W$ | $T_H$ (MIN.) |
|---|---|---|---|---|---|---|
| C | 0.835<br>[21.2] | 0.315 ± 0.012<br>[8 ± 0.3] | 0.295 ± 0.012<br>[7.5 ± 0.3] | 0.118<br>[3.0] | 0.236 ± 0.012<br>[6.0 ± 0.3] | 0.075<br>[1.9] |

## RECOMMENDED REFLOW PROFILES




| $T_p$ Lead (Pb)-free | $T_p$ Sn/Pb | $t_p$ | $T_L$ Lead (Pb)-free | $T_L$ Sn/Pb | $T_s$ MIN. Lead (Pb)-free | $T_s$ MIN. Sn/Pb | $T_s$ MAX. Lead (Pb)-free | $T_s$ MAX. Sn/Pb | $t_s$ Lead (Pb)-free | $t_s$ Sn/Pb | $t_L$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 245 °C | 220 °C | 10 | 217 °C | 183 °C | 150 °C | 100 °C | 200 °C | 150 °C | 60 to 150 | 60 to 90 | 60 |

## MOUNTING

Due to the size and weight of these capacitors, we recommend that a supplemental mounting restraint to be used in printed circuit board attachment in addition to the reflowed solder.

One recommendation is to use an adhesive such as defined in the J-STD-001DS.

This is the Space Application Electronic Hardware Addendum to J-STD-001 (Requirements for Solder Electrical and Electronic Assemblies).

## STANDARD RATINGS

| CAPACITANCE (µF) | CASE CODE | PART NUMBER | MAX. ESR AT + 25 °C 120 Hz (Ω) | MAX. IMP. AT - 55 °C 120 Hz (Ω) | MAX. DCL (µA) AT | | MAX. CAPACITANCE CHANGE (%) AT | | | MAX. RIPPLE 40 kHz RMS (mA) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | + 25 °C | + 85 °C + 125 °C | - 55 °C | + 85 °C | + 125 °C | |
| **6 $V_{DC}$ AT + 85 °C; 4 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 470 | C | M34C477(1)006(2)ZSS | 0.9 | 12 | 1.0 | 3.0 | - 75 | + 10 | + 20 | 1500 |
| **10 $V_{DC}$ AT + 85 °C; 7 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 330 | C | M34C337(1)010(2)ZSS | 1.0 | 15 | 1.0 | 3.0 | - 70 | + 8 | + 20 | 1400 |
| **15 $V_{DC}$ AT + 85 °C; 10 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 150 | C | M34C157(1)015(2)ZSS | 1.1 | 25 | 1.0 | 3.0 | - 45 | + 8 | + 20 | 1400 |
| **25 $V_{DC}$ AT + 85 °C; 15 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 120 | C | M34C127(1)025(2)ZSS | 1.3 | 25 | 1.0 | 5.0 | - 42 | + 8 | + 12 | 1250 |
| **30 $V_{DC}$ AT + 85 °C; 20 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 100 | C | M34C107(1)030(2)ZSS | 1.3 | 25 | 1.0 | 5.0 | - 38 | + 8 | + 12 | 1200 |
| **50 $V_{DC}$ AT + 85 °C; 30 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 68 | C | M34C686(1)050(2)ZSS | 1.5 | 35 | 1.0 | 5.0 | - 25 | + 8 | + 15 | 1050 |
| **60 $V_{DC}$ AT + 85 °C; 40 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 47 | C | M34C476(1)060(2)ZSS | 2.0 | 44 | 1.0 | 5.0 | - 25 | + 8 | + 12 | 1050 |
| **75 $V_{DC}$ AT + 85 °C; 50 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 33 | C | M34C336(1)075(2)ZSS | 2.5 | 66 | 1.0 | 5.0 | - 25 | + 5 | + 9 | 1050 |
| **100 $V_{DC}$ AT + 85 °C; 65 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 15 | C | M34C156(1)100(2)ZSS | 3.5 | 125 | 1.0 | 5.0 | - 18 | + 3 | + 10 | 1050 |
| **125 $V_{DC}$ AT + 85 °C; 85 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 10 | C | M34C106(1)125(2)ZSS | 5.5 | 175 | 1.0 | 5.0 | - 15 | + 3 | + 10 | 1050 |

**Note**

- Part number definitions:
  (1) Capacitance tolerance: K, M
  (2) Termination/packaging: A = 100 % tin (RoHS compliant), bulk; B = Std, tin/lead, bulk
  Reliability level: Z = Non-ER
  Temperature: S = STD
  ESR: S = STD

## PERFORMANCE CHARACTERISTICS OF M34 CAPACITORS

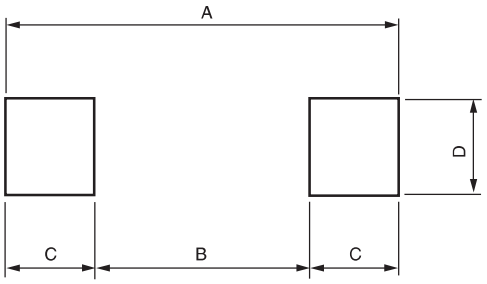
### ELECTRICAL CHARACTERISTICS

| ITEM | PERFORMANCE CHARACTERISTICS |
|---|---|
| Operating temperature range | - 55 °C to + 125 °C |
| Capacitor tolerance | ± 20 %, ± 10 %, at 120 Hz |
| Capacitance change (maximum) | Limits per standard ratings table |
| ESR | Limits per standard ratings table |
| AC ripple current | Limits per standard ratings table |
| DCL (maximum leakage current) | Limits per standard ratings table |
| Impedance (maximum) | Limits per standard ratings table |
| Reverse voltage | Reverse voltage shall be in accordance with DSCC drawing 93026. There shall be no continuous reverse voltage. Transient reverse voltage surges are acceptable under the following conditions:<br>a) Peak reverse voltage is equal to or less than 1.5 V and the product of the peak current times the duration of the reverse transient is 0.05 A or less.<br>b) The repetition rate of the reverse voltage surges is less than 10 Hz. |
| Surge voltage | Surge voltage shall be in accordance with MIL-PRF-39006 and Table II of DSCC93026. The DC rated surge voltage is the maximum voltage to which the capacitors should be subjected under any conditions. This includes transcients and ripple at the highest line voltage. The surge voltage is 115 % of rated DC working voltage. |
| Life test | The capacitors shall be capable of withstanding a 2000 h life test at 85 °C at rated voltage |

| ENVIRONMENTAL CHARACTERISTICS | | |
|---|---|---|
| **ITEM** | **CONDITION** | **COMMENTS** |
| Hermeticity | MIL-PRF-39006 | There shall be no evidence of leakage after testing to MIL-PRF-39006 specifications. |
| Moisture resistance | MIL-PRF-39006 | Tested in accordance to MIL-PRF-39006 for 30 cycles. |
| Altitude | MIL-STD-202G, method 105 D | 100 000 feet test |

| MECHANICAL CHARACTERISTICS | | |
|---|---|---|
| **ITEM** | **CONDITION** | **COMMENTS** |
| Thermal shock | MIL-STD-202G, method 107 A | Per M39006 and DSCC93026, 30 cycles |
| Shock | MIL-STD-202G, method 213 I | Per M39006 and DSCC93026, 100 *g* |
| Vibration (high frequency) | MIL-STD-202G, method 204 D | Per M39006 and DSCC93026, 20 *g* |
| Resistance to solder heat | MIL-STD-202G, method 210 F | Terminals at 260 °C for 10 s. The capacitor must not be visibly damaged and the electrical characteristics must not be affected. |
| Solderability | ANSI J-STD-002 | The terminations must be solderable per the MIL standard. |
| Terminals | MIL-STD-1276 | All terminals shall be permanently secured internally and externally, as applicable. All external joints shall be welded. |
| Part markings | MIL-STD-1285 | The part marking shall include Vishay name, trademark, capacitance, voltage, date code and lot symbol. |
| Weight (typical) in g | 3.5 | |

**PAD DIMENSIONS** in millimeters




| CASE CODE | A (MIN.) | B (NOM.) | C (NOM.) | D (NOM.) |
|---|---|---|---|---|
| C | 22.7 | 14.7 | 4.0 | 6.4 |

| STANDARD PACKAGING QUANTITY | | |
|---|---|---|
| **SERIES** | **CASE CODE** | **BULK/TUBE** |
| M34 | C | 10 pcs |

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# Wet Tantalum Capacitors Surface Mount, Molded Case

## FEATURES

- Molded surface mountable design
- Terminations: standard tin/lead (SnPb), 100 % tin (RoHS compliant) available
- Industry standard ratings
- Model M35 wet tantalum electrolytic chip capacitors incorporate the advantages of all the varieties of electrolytic capacitors and eliminate most of the disadvantages. These units have a 3 V reverse voltage capability at + 85 °C and a higher ripple current capability than any other electrolytic type with similar combinations of capacitance and case size.
- Compliant to RoHS Directive 2002/95/EC

Pb-free Available

RoHS* COMPLIANT

**Note**

* Pb containing terminations are not RoHS compliant, exemptions may apply

## PERFORMANCE CHARACTERISTICS

**Operating Temperature:** - 55 °C to + 85 °C
(to + 125 °C with voltage derating)

**Capacitance Tolerance:** At 120 Hz, + 25 °C. ± 20 % standard. ± 10 %, ± 5 % available as special.

**DC Leakage Current (DCL Max.):** At + 25 °C and above: Leakage current shall not exceed the values listed in the Standard Ratings Tables.

**Life Test:** Capacitors are capable of withstanding a 2000 h life test at a temperature of + 85 °C or + 125 °C at the applicable rated DC working voltage.

Following life test:

1. DCL, measured at + 85 °C rated voltage, shall not be in excess of the original requirement.
2. The equivalent series resistance shall not exceed 150 % of the initial requirement.
3. Change in capacitance shall not exceed 10 % from the initial measurement.

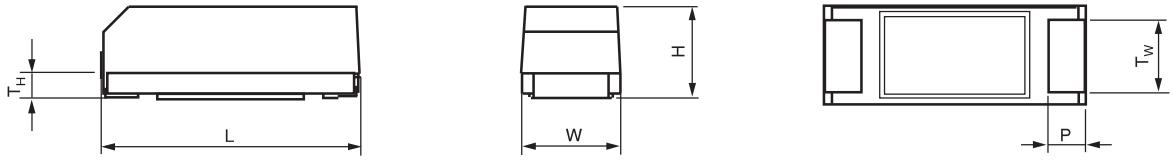
## ORDERING INFORMATION

| M35 | C | 826 | M | 125 | B | Z | S | L |
|---|---|---|---|---|---|---|---|---|
| MODEL | CASE CODE | CAPACITANCE | CAPACITANCE TOLERANCE | DC VOLTAGE RATING AT + 85 °C | TERMINATION AND PACKAGING | RELIABILITY LEVEL | TEMP | ESR |
| | See Ratings and Case Codes table | This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow. | K = ± 10 %<br>M = ± 20 % | This is expressed in volts. To complete the three-digit block, zeros precede the voltage rating. A decimal point is indicated by an "R" (6R3 = 6.3 V) | A = 100 % tin (RoHS compliant), bulk<br>B = Std, tin/lead, bulk | Z = Non-ER | S = Std | **S = Std.**<br>L = Low |

**Note**

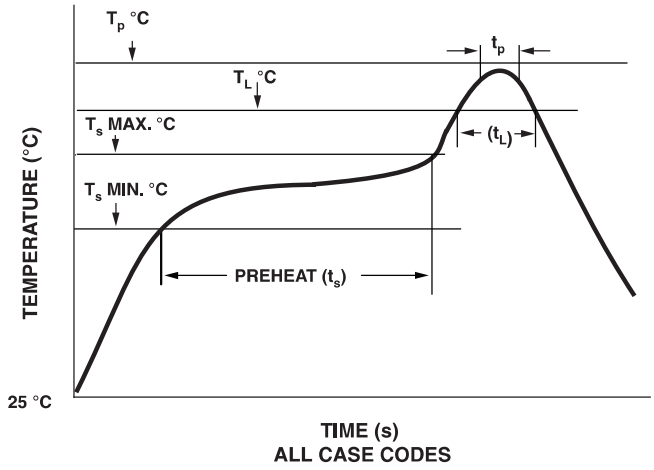
- Packaging: The use of formed plastic tubes for packing bulk components is standard

## DIMENSIONS in inches [millimeters]




| CASE CODE | L (MAX.) | W | H | P (MIN.) | $T_W$ | $T_H$ (MIN.) |
|---|---|---|---|---|---|---|
| C | 0.835<br>[21.2] | 0.315 ± 0.012<br>[8 ± 0.3] | 0.295 ± 0.012<br>[7.5 ± 0.3] | 0.118<br>[3.0] | 0.236 ± 0.012<br>[6.0 ± 0.3] | 0.075<br>[1.9] |

## RECOMMENDED REFLOW PROFILES




| $T_p$ Lead (Pb)-free | $T_p$ Sn/Pb | $t_p$ | $T_L$ Lead (Pb)-free | $T_L$ Sn/Pb | $T_S$ MIN. Lead (Pb)-free | $T_S$ MIN. Sn/Pb | $T_S$ MAX. Lead (Pb)-free | $T_S$ MAX. Sn/Pb | $t_s$ Lead (Pb)-free | $t_s$ Sn/Pb | $t_L$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 260 °C | 240 °C | 10 | 217 °C | 183 °C | 150 °C | 100 °C | 200 °C | 150 °C | 60 to 150 | 60 to 90 | 60 |

## MOUNTING

Due to the size and weight of these capacitors, we recommend that a supplemental mounting restraint to be used in printed circuit board attachment in addition to the reflowed solder.

One recommendation is to use an adhesive such as defined in the J-STD-001DS.

This is the Space Application Electronic Hardware Addendum to J-STD-001 (Requirements for Solder Electrical and Electronic Assemblies).

## STANDARD RATINGS

| CAPACITANCE (µF) | CASE CODE | PART NUMBER | MAX. ESR AT + 25 °C | MAX. ESR AT - 55 °C | MAX. DCL (µA) AT | | MAX. CAPACITANCE CHANGE (%) AT | | | MAX. RIPPLE 40 kHz RMS (mA) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | + 25 °C | + 85 °C + 125 °C | - 55 °C | + 85 °C | + 125 °C | |
| **6 $V_{DC}$ AT + 85 °C; 4 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 30 | C | M35C306(1)006(2)ZS(3) | 4.0 | 100 | 1.0 | 2.0 | - 40 | + 10.5 | + 12 | 820 |
| 68 | C | M35C686(1)006(2)ZS(3) | 3.2 | 60 | 1.0 | 2.0 | - 40 | + 14 | + 16 | 960 |
| 220 | C | M35C227(1)006(2)ZS(3) | 3.0 | 36 | 2.0 | 9.0 | - 64 | + 13 | + 16 | 1000 |
| **8 $V_{DC}$ AT + 85 °C; 5 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 25 | C | M35C256(1)008(2)ZS(3) | 4.0 | 100 | 1.0 | 2.0 | - 40 | + 10.5 | + 12 | 820 |
| 56 | C | M35C566(1)008(2)ZS(3) | 3.3 | 59 | 1.0 | 2.0 | - 40 | + 14 | + 16 | 900 |
| 180 | C | M35C187(1)008(2)ZS(3) | 3.0 | 45 | 2.0 | 9.0 | - 60 | + 13 | + 16 | 1000 |
| **10 $V_{DC}$ AT + 85 °C; 7 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 20 | C | M35C206(1)010(2)ZS(3) | 4.0 | 120 | 1.0 | 2.0 | - 32 | + 10.5 | + 12 | 820 |
| 47 | C | M35C476(1)010(2)ZS(3) | 3.7 | 90 | 1.0 | 2.0 | - 36 | + 14 | + 16 | 855 |
| 120 | C | M35C127(1)010(2)ZS(3) | 3.2 | 54 | 2.0 | 6.0 | - 40 | + 14 | + 16 | 900 |
| 150 | C | M35C157(1)010(2)ZS(3) | 3.0 | 54 | 2.0 | 9.0 | - 55 | + 13 | + 16 | 900 |

**Note**

- Part number definitions:
  (1) Capacitance tolerance: K, M
  (2) Termination/packaging: (see Ordering Information)
  Reliability level: Z = Non-ER
  Temperature: S = STD
  (3) ESR: S = STD, L = Low (1/2 standard ESR value)

## STANDARD RATINGS

| CAPACITANCE (µF) | CASE CODE | PART NUMBER | MAX. ESR AT + 25 °C | MAX. ESR AT - 55 °C | MAX. DCL (µA) AT | | MAX. CAPACITANCE CHANGE (%) AT | | | MAX. RIPPLE 40 kHz RMS (mA) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | + 25 °C | + 85 °C + 125 °C | - 55 °C | + 85 °C | + 125 °C | |
| **15 $V_{DC}$ AT + 85 °C; 10 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 15 | C | M35C156(1)015(2)ZS(3) | 4.4 | 155 | 1.0 | 2.0 | - 24 | + 10.5 | + 12 | 780 |
| 33 | C | M35C336(1)015(2)ZS(3) | 4.0 | 90 | 1.0 | 2.0 | - 28 | + 14 | + 16 | 820 |
| 82 | C | M35C826(1)015(2)ZS(3) | 3.9 | 72 | 2.0 | 6.0 | - 35 | + 12 | + 16 | 900 |
| 100 | C | M35C107(1)015(2)ZS(3) | 3.9 | 72 | 2.0 | 9.0 | - 44 | + 13 | + 16 | 900 |
| **25 $V_{DC}$ AT + 85 °C; 15 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 10 | C | M35C106(1)025(2)ZS(3) | 5.3 | 220 | 1.0 | 2.0 | - 16 | + 8 | + 9 | 715 |
| 22 | C | M35C226(1)025(2)ZS(3) | 4.2 | 140 | 1.0 | 2.0 | - 20 | + 10.5 | + 12 | 800 |
| 56 | C | M35C566(1)025(2)ZS(5) | 4.3 | 90 | 2.0 | 6.0 | - 25 | + 12 | + 15 | 850 |
| 68 | C | M35C686(1)025(2)ZS(5) | 4.3 | 90 | 2.0 | 9.0 | - 40 | + 12 | + 15 | 850 |
| **30 $V_{DC}$ AT + 85 °C; 20 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 8 | C | M35C805(1)030(2)ZS(3) | 6.6 | 275 | 1.0 | 2.0 | - 16 | + 8 | + 12 | 640 |
| 15 | C | M35C156(1)030(2)ZS(3) | 6.2 | 175 | 1.0 | 2.0 | - 20 | + 10.5 | + 12 | 780 |
| 47 | C | M35C476(1)030(2)ZS(3) | 5.2 | 100 | 2.0 | 6.0 | - 23 | + 12 | + 15 | 800 |
| 56 | C | M35C566(1)030(2)ZS(3) | 5.2 | 100 | 2.0 | 9.0 | - 38 | + 12 | + 15 | 800 |
| **35 $V_{DC}$ AT + 85 °C; 22 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 15 | C | M35C156(1)035(2)ZS(3) | 6.2 | 175 | 0.75 | 1.5 | - 20 | + 10.5 | + 12 | 660 |
| 39 | C | M35C396(1)035(2)ZS(3) | 4.1 | 61 | 2.0 | 6.0 | - 22 | + 12 | + 14 | 820 |
| **50 $V_{DC}$ AT + 85 °C; 30 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 5 | C | M35C505(1)050(2)ZS(3) | 8.0 | 400 | 1.0 | 2.0 | - 16 | + 5 | + 6 | 580 |
| 10 | C | M35C106(1)050(2)ZS(3) | 6.4 | 250 | 1.0 | 2.0 | - 24 | + 8 | + 9 | 715 |
| 33 | C | M35C336(1)050(2)ZS(3) | 5.0 | 135 | 2.0 | 9.0 | - 29 | + 10 | + 12 | 700 |
| **60 $V_{DC}$ AT + 85 °C; 40 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 4 | C | M35C405(1)060(2)ZS(3) | 9.3 | 550 | 1.0 | 2.0 | - 16 | + 5 | + 6 | 525 |
| 8.2 | C | M35C825(1)060(2)ZS(3) | 6.6 | 275 | 1.0 | 2.0 | - 24 | + 8 | + 9 | 625 |
| 27 | C | M35C276(1)060(2)ZS(3) | 5.0 | 144 | 3.0 | 12 | - 24 | + 10 | + 12 | 700 |
| **75 $V_{DC}$ AT + 85 °C; 50 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 3.5 | C | M35C355(1)075(2)ZS(3) | 9.5 | 650 | 1.0 | 2.0 | - 16 | + 5 | + 6 | 525 |
| 6.8 | C | M35C685(1)075(2)ZS(3) | 6.8 | 300 | 1.0 | 2.0 | - 20 | + 8 | + 9 | 610 |
| 22 | C | M35C226(1)075(2)ZS(3) | 5.1 | 157 | 3.0 | 12 | - 19 | + 10 | + 12 | 600 |
| **100 $V_{DC}$ AT + 85 °C; 65 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 2.5 | C | M35C255(1)100(2)ZS(3) | 10.6 | 950 | 1.0 | 2.0 | - 16 | + 7 | + 8 | 505 |
| 4.7 | C | M35C475(1)100(2)ZS(3) | 8.5 | 500 | 1.0 | 2.0 | - 16 | + 7 | + 8 | 565 |
| 10 | C | M35C106(1)100(2)ZS(3) | 5.9 | 200 | 3.0 | 12 | - 17 | + 10 | + 12 | 800 |
| **125 $V_{DC}$ AT + 85 °C; 85 $V_{DC}$ AT + 125 °C** | | | | | | | | | | |
| 1.7 | C | M35C175(1)125(2)ZS(3) | 15.6 | 1250 | 1.0 | 2.0 | - 16 | + 7 | + 8 | 415 |
| 3.6 | C | M35C365(1)125(2)ZS(3) | 10.0 | 600 | 1.0 | 2.0 | - 16 | + 7 | + 8 | 520 |
| 6.8 | C | M35C685(1)125(2)ZS(3) | 11.7 | 300 | 3.0 | 12 | - 14 | + 10 | + 12 | 700 |

**Note**

- Part number definitions:
  (1) Capacitance tolerance: K, M
  (2) Termination/packaging: (see Ordering Information)
  Reliability level: Z = Non-ER
  Temperature: S = STD
  (3) ESR: S = STD, L = Low (1/2 standard ESR value)

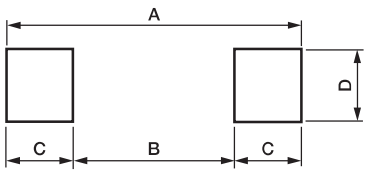
## PERFORMANCE CHARACTERISTICS OF M35 CAPACITORS

| ELECTRICAL CHARACTERISTICS | |
|---|---|
| **ITEM** | **PERFORMANCE CHARACTERISTICS** |
| Operating temperature range | - 55 °C to + 125 °C |
| Capacitor tolerance | ± 20 %, ± 10 % at 120 Hz |
| Capacitance change (maximum) | Limits per Standard Ratings table. Measured per requirements of MIL-PRF-39006. |
| ESR | |
| AC ripple current | |
| DCL (maximum leakage current) | |
| Impedance (maximum) | |
| Reverse voltage | Reverse voltage shall be in accordance with MIL-PRF-39006/22.<br>Units are capable of withstanding 3 V in reverse at + 85 °C for 125 h. |
| Surge voltage | Surge voltage shall be in accordance with MIL-PRF-39006.<br>The DC rated surge voltage is the maximum voltage to which the capacitors should be subjected under any conditions. This includes transients and peak ripple at the highest line voltage. The surge voltage is 115 % of rated DC working voltage. |
| Life test | The capacitors shall be capable of withstanding a 2000 h life test at 85 °C at rated voltage. |

| ENVIRONMENTAL CHARACTERISTICS | | |
|---|---|---|
| **ITEM** | **CONDITION** | **COMMENTS** |
| Hermeticity | MIL-PRF-39006 | The internal component has been tested to be compliant to the hermeticity requirements of MIL-PRF-39006/22.<br>The internal component has been tested to be compliant to the moisture resistance requirements of MIL-PRF-39006/22.<br>The internal component has been tested to be compliant to the altitude or reduced barometric pressure requirements of MIL-PRF-39006/22 (150 000 feet). |
| Moisture resistance | MIL-PRF-39006 | |
| Altitude/barometric pressure (reduced) | MIL-PRF-39006 | |

| MECHANICAL CHARACTERISTICS | | |
|---|---|---|
| **ITEM** | **CONDITION** | **COMMENTS** |
| Thermal shock | MIL-STD-202, Method 107, A | Per MIL-PRF-39006, 30 cycles |
| Shock | MIL-STD-202, Method 213 | Per MIL-PRF-39006, 500 g |
| Vibration (high frequency) | MIL-STD-202, Method 204 | Per MIL-PRF-39006, 80 g |
| Vibration (random) | MIL-STD-202, Method 214 | Per MIL-PRF-39006, 53.79 g |
| Resistance to solder heat | MIL-STD-202, Method 210 | The capacitor must withstand solder dipping of the terminals at 260 °C for 10 s. The capacitor must not be visibly damaged and the electrical characteristics must not be affected. |
| Solderability | ANSI J-STD-002 | The terminations must be solderable per the requirements of MIL-PRF-55365 para. 4.10 |
| Part markings | MIL-STD-1285 | The part marking shall include Vishay name, trademark, capacitance, voltage, date code and lot symbol. |
| Weight (typical) in g | 3.5 | |

**PAD DIMENSIONS** in millimeters




| CASE CODE | A (MIN.) | B (NOM.) | C (NOM.) | D (NOM.) |
|---|---|---|---|---|
| C | 22.7 | 14.7 | 4.0 | 6.4 |

| STANDARD PACKAGING QUANTITY | | |
|---|---|---|
| **SERIES** | **CASE CODE** | **BULK/TUBE** |
| M35 | C | 10 pcs |

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