

Overview

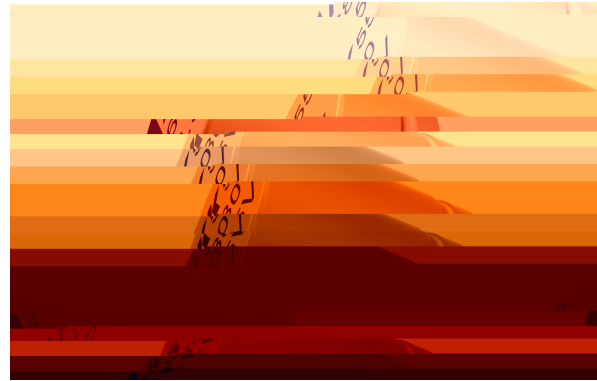
% T T P M G E X M S R W

KEMET's A755 Single-Ended Conductive Polymer Aluminum Solid Electrolytic Capacitors offer longer life and greater stability across a wide range of temperatures. The A755 highly conductive solid polymer electrolyte eliminates the risk of explosion from drying out and due to its low ESR properties, is able to withstand higher ripple currents during normal operation. The A755 is ideally suited for industrial and commercial applications.

Typical applications include LED driver power supplies, adapters (laptop power supplies) and medical equipment.

& I R I X W

- Through-hole form factor
- Low impedance
- High ripple current
- Long life
- 105°C/5,000 hours
- RoHS compliant



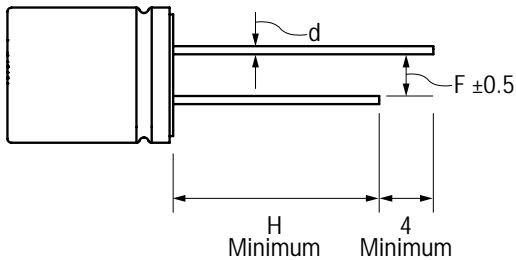
4 E V X 2 Y Q F I V 7] W X I Q

| A | 755 | / 7 | 687 | M | 0E | AA | E014 |
|-----------------|--|---------------------|--|-----------|--|----------------------------|---|
| Capacitor Class | Series | Size Code | Capacitance Code (pF) | Tolerance | Rated Voltage (VDC) | Packaging | ESR |
| A = Aluminum | Single-Ended Conductive Polymer Solid Capacitor 105°C 5,000 Hour | See Dimension Table | First two digits represent W M K R M X G for capacitance values. Last digit W T I G M X I W X L I number of zeros to be added. | M = ±20% | 2.5 = 0E 4 = 0G 6.3 = 0J 10 = 1A 16 = 1C 20 = 1D 25 = 1E | See Ordering Options Table | Last 3 digits represent W M K R M X G E R X K Y V I W J S V) 7 Q 1 |

3VHIVMRK 3TXMSRW 8EFPI

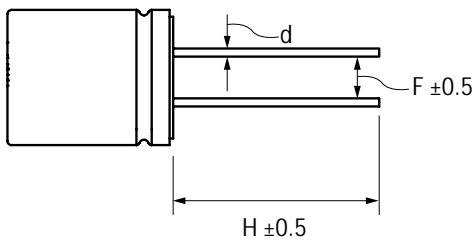
| (MEQIXIV) | | 7XERHEVH & YPO | | 4EGOEKMRK 3TXMSRW | |
|---------------------------------------|-------------------|------------------------------------|--|-------------------|--|
| 5 – 18 | Bulk (bag) | Long Lead (Loose Standard Lead) | 15 Minimum | AA | |
| 5 – 18 | Bulk (bag) | Cut Leads | 5 ⁽¹⁾ | BA | |
| 5 – 18 | Bulk (bag) | Formed Leads | 5 ⁽¹⁾ | CA | |
| 7XERHEVH EYXS MRWIVXMSR TEGOEKMRK STX | | | | | |
| 5 | Ammo Tape and Box | Formed to 2.5 mm | $H_0 = 16 \pm 0.5$ | FA | |
| 5 – 8 | Ammo Tape and Box | Formed to 5 mm | $H_0 = 16 \pm 0.5$ | DA | |
| 6 – 8 | Ammo Tape and Box | Straight | $H = 18.5 \pm 0.5$ (for 8 x 12 $H = 20 \pm 0$) | EA | |
| 10 – 13 | Ammo Tape and Box | Straight | $H = 18.5 \pm 0.5$ | EA | |

OSRK 0IEH 0SSWI 7XERHEVH 0IEHW



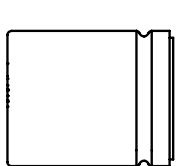
| | (MEQIXIV) | | | | | |
|-----|-----------|-----|-----|-----|-----|-----|
| | 5 | 6.3 | 8 | 10 | 13 | 18 |
| d | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.8 |
| F | 2 | 2.5 | 3.5 | 5 | 5 | 7.5 |
| H | 15 | 15 | 15 | 15 | 15 | 15 |

'YX 0IEH

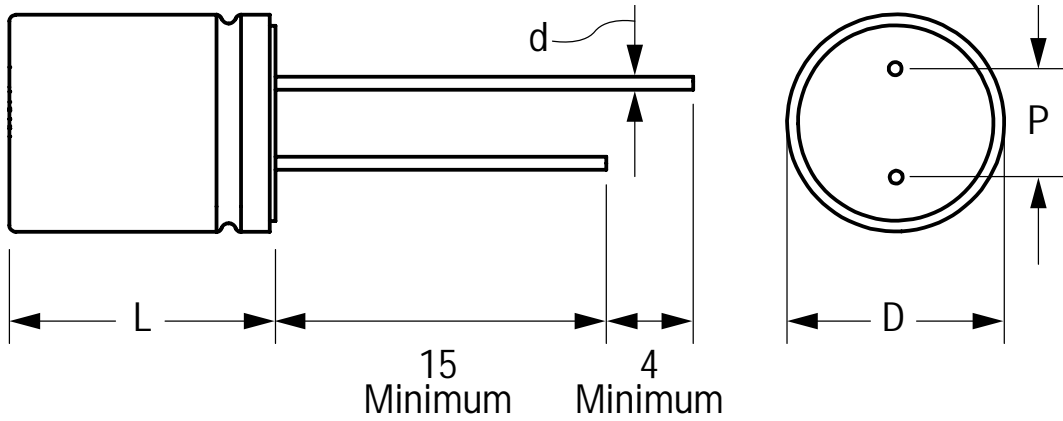


| | (MEQIXIV) | | | | | |
|-----|---|-----|-----|-----|-----|-----|
| | 5 | 6.3 | 8 | 10 | 13 | 18 |
| d | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.8 |
| F | 2 | 2.5 | 3.5 | 5 | 5 | 7.5 |
| H | According to customer requirement 3 – 10 mm | | | | | |

*SVQIH 0IEH



(M Q I R W M S R W i 1 M P P M Q I X I V W



| 7 M ^ I ' S H I | D | | L | | d | | P | |
|-----------------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|
| | Nominal | Tolerance | Nominal | Tolerance | Nominal | Tolerance | Nominal | Tolerance |
| BQ | 5 | ±0.5 | 11 | ±1.0 | 0.5 | ±0.5 | 2 | ±0.5 |
| KS | 8 | ±0.5 | 12 | ±1.0 | 0.6 | ±0.5 | 3.5 | ±0.5 |
| MS | 10 | ±0.5 | 12 | ±1.0 | 0.6 | ±0.5 | 5.0 | ±0.5 |

4 I V J S V Q E R G I ' L E V E G X I V M W X M G W

| - X I Q | 4 I V J S V Q E R G I ' L E V E G X I V M W X M G W |
|-----------------------|---|
| Capacitance Range | 47 – 1,500 µF |
| Rated Voltage | 2.5 – 25 VDC |
| Operating Temperature | — q' X S q' |
| Capacitance Tolerance | ±20% at 120 Hz/20°C |
| Life Test | 5,000 hours (see conditions in Test Method & Performance) |
| Leakage Current | - • ' : |

C = Rated capacitance (µF), V = Rated voltage (VDC), Voltage applied for 2 minutes at 20°C.

(M W W M T E X M S R * E G X S V X E R ½

| | |
|-------------------------------------|----------|
| Rated Voltage (V) | 2.5 – 25 |
| X E R ½ 1 E \ M Q Y Q E X , ^ 0.10' | |

-QTIHERGI > 'LEVEGXIVM WXMGW EX O,^

| | |
|----------|------|
| > - q' > | q' • |
| > - q' > | q' • |

'SQTIRWEXMSR *EGXSV SJ 6MTTPI 'YVVIRX 6' ZW *VIU

| *VIUYIRG] | ,^ • J | O,^ | O,^ • J | O,^ | O,^ • J |
|------------|--------|------|---------|------|---------|
| 'SIJϖGMIRX | 0.05 | 0.30 | | 0.70 | 1.00 |

8IW X 1IXLSH 4IVJSVQERGI

| 'SRHMXMSRW | 0SEH 0MJI 8IW X | 7LIPJ 0MJI 8IW X |
|-------------|-----------------|------------------|
| Temperature | 105°C | 105°C |
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7 LIPJ 0MJI ERH 6I %KIMRK

8 LI GETEGMXERGI)76 ERH MQTIHERGI SJ E GETEGMXSV [MPP RSX GL
leakage current will very slowly increase.

- KEMET's conductive polymer aluminum solid electrolytic capacitors should not be stored in high temperatures or where there is a high level of humidity.
u 8 LL WYMXEFPI WXSVEKI GSRHMXMSR JSV /)1)8 W GSRHYGXMZI TSP]QI
less than 75% in relative humidity.
- KEMET's conductive polymer aluminum solid electrolytic capacitors should not be stored in damp conditions such as water, saltwater spray or oil spray.
- KEMET's conductive polymer aluminum solid electrolytic capacitors should not be stored in an environment full of hazardous gas (hydrogen sulphide, sulphurous acid gas, nitrous acid, chlorine gas, ammonium, etc.)
- KEMET's conductive polymer aluminum solid electrolytic capacitors should not be stored under exposure to ozone, ultraviolet rays or radiation.

If a capacitor has been stored for more than 24 months under these conditions and it shows increased leakage current, a treatment by voltage application is recommended.

6I EKI 4VSGIHYVI

%TTP] XLI VEXIH (' ZSPXEKI XS XLI GETEGMXSV EX q' JSV E TIVMSH

)RZMVSRQIRXEP 'SQTPMERGI

As an environmentally conscious company, KEMET is working continuously with improvements concerning the environmental effects of both our capacitors and their production. In Europe (RoHS Directive) and in some other geographical areas like China, legislation has been put in place to prevent the use of some hazardous materials, such as lead (Pb), in electronics. IUYMTQIRX %PP TVSHYGXW MR XLMW GEXEPSK EVI TVSHYGIH XS LIPT these legislative requirements. The only material of concern in our products has been lead (Pb), which has been removed. JVSQ EPP HIWMKRW XS JYP P PP XLI VIUYMVIQIRX SJ GSRXEMRMK PIW closely follow any changes in legislation worldwide and makes any necessary changes in its products, whenever needed.

Some customer segments such as medical, military and automotive electronics may still require the use of Lead in electroplating coatings. To clarify the situation and distinguish products from each other, a special symbol is used on the packaging label for RoHS compatible capacitors.

Because of customer requirements, there may appear additional markings such as LF = Lead-free, or LFW = Lead-free on the label.

8EFPI i 6EXMRKW 4EVX 2YQFIV 6IJIVIRGI

| Capacitance (µF) | Voltage (V) | Series | Case Size | Temperature (°C) | Q (%) | LC (µs) | Part Number |
|------------------|-------------|--------|-----------|------------------|-------|---------|---------------------|
| 2.5 | 2.9 | 680 | 8 x 12 | 14 | 4800 | 255 | A755KS687M0E(1)E014 |
| 2.5 | 2.9 | 820 | 8 x 12 | 14 | 4800 | 308 | A755KS827M0E(1)E014 |
| 2.5 | 2.9 | 1500 | 10 x 12 | 13 | 5250 | 563 | A755MS158M0E(1)E013 |
| 4 | 4.6 | 560 | 8 x 12 | 14 | 4800 | 336 | A755KS567M0G(1)E014 |
| 4 | 4.6 | 1200 | 8 x 12 | 14 | 4900 | 720 | A755KS128M0G(1)E014 |
| 6.3 | 7.2 | 220 | 5 x 11 | 18 | 2000 | 208 | A755BQ227M0J(1)E018 |
| 6.3 | 7.2 | 680 | 8 x 12 | 14 | 4500 | 643 | A755KS687M0J(1)E014 |
| 6.3 | 7.2 | 1000 | 8 x 12 | 13 | 4500 | 945 | A755KS108M0J(1)E013 |
| 6.3 | 7.2 | 1500 | 10 x 12 | 13 | 5250 | 1418 | A755MS158M0J(1)E013 |
| 10 | 11.5 | 270 | 8 x 12 | 15 | 4820 | 405 | A755KS277M1A(1)E015 |
| 10 | 11.5 | 560 | 8 x 12 | 15 | 4820 | 840 | A755KS567M1A(1)E015 |
| 10 | 11.5 | 820 | 8 x 12 | 14 | 4820 | 1230 | A755KS827M1A(1)E014 |
| 10 | 11.5 | 1000 | 10 x 12 | 13 | 5100 | 1500 | A755MS108M1A(1)E013 |
| 10 | 11.5 | 1500 | 10 x 12 | 13 | 5100 | 2250 | A755MS158M1A(1)E013 |
| 16 | 18.4 | 270 | 8 x 12 | 15 | 4100 | 648 | A755KS277M1C(1)E015 |
| 16 | 18.4 | 470 | 10 x 12 | 13 | 5250 | 1128 | A755MS477M1C(1)E013 |
| 16 | 18.4 | 560 | 10 x 12 | 13 | 5250 | 1344 | A755MS567M1C(1)E013 |
| 16 | 18.4 | 1000 | 10 x 12 | 12 | 5250 | 2400 | A755MS108M1C(1)E012 |
| 20 | 23 | 100 | 8 x 12 | 20 | 4420 | 300 | A755KS107M1D(1)E020 |
| 20 | 23 | 150 | 8 x 12 | 20 | 4420 | 450 | A755KS157M1D(1)E020 |
| 25 | 28.8 | 47 | 8 x 12 | 25 | 2320 | 176 | A755KS476M1E(1)E025 |
| 25 | 28.8 | 100 | 8 x 12 | 25 | 2500 | 375 | A755KS107M1E(1)E025 |
| 25 | 28.8 | 220 | 8 x 12 | 25 | 3000 | 825 | A755KS227M1E(1)E025 |
| 25 | 28.8 | 270 | 10 x 12 | 15 | 4850 | 1013 | A755MS277M1E(1)E015 |
| 25 | 28.8 | 330 | 10 x 12 | 15 | 4850 | 1238 | A755MS337M1E(1)E015 |

(1) Please see packaging codes for options.

- R W X E P P M R K

Conductive polymer aluminum solid electrolytic capacitors are prone to a change in leakage current due to thermal stress. HYVMRK WSPHIVMRK 8LI PIEOEKI GYVVIRX QEJ MRGVIEWI EJXIV WSPH are not recommended for use in circuits sensitive to leakage current.

A general principle is that lower temperature operation results in a longer, useful life of the capacitor. For this reason, it should be ensured that electrolytic capacitors are placed away from heat-emitting components. Adequate space should be allowed between components for cooling air to circulate, especially when high ripple current loads are applied. In any case, the maximum rated temperature must not be exceeded.

- Do not deform the case of capacitors or use capacitors with a deformed case.
- Verify that the connections of the capacitors are able to insert on the board without excessive mechanical force. Excessive force during insertion, as well as after soldering may cause terminal damage and affect the electrical performance.
- Ensure electrical insulation between the capacitor case, negative terminal, positive terminal and PCB.
- If the capacitors require mounting through additional means, the recommended mounting accessories shall be used.
- Verify the correct polarization of the capacitor on the board.

KEMET recommends, to ensure that the voltage across each capacitor does not exceed its rated voltage.

8 I Q T I V E X Y V I 7 X E F M P M X] ' L E V E G X I V M W X M G W

Stable characteristics in a very low temperature range allows for less circuits in the design.

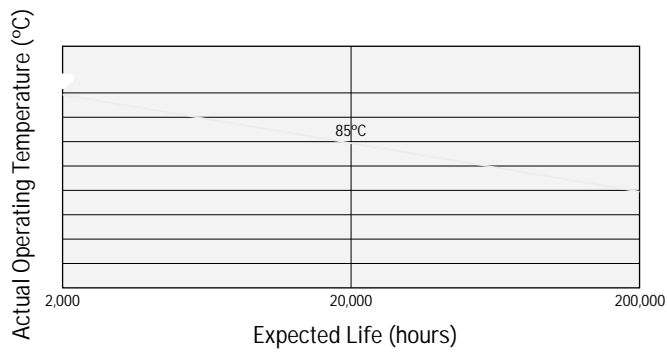
)\TIGXIH 0MJI 'EPGYPEXMSR 'LEVX

Expected life depends on operating temperature according to the following formula:

$$L = L_0 \times 10^{(T_0 - T)/20}$$

Where:

- L: Expected life
- L₀: Life at maximum permissible operating temperature with rated operating voltage applied (hours)
- T: Actual operating temperature
- T₀: Maximum permissible operating temperature



The effect of derating temperature can be seen in this graph.

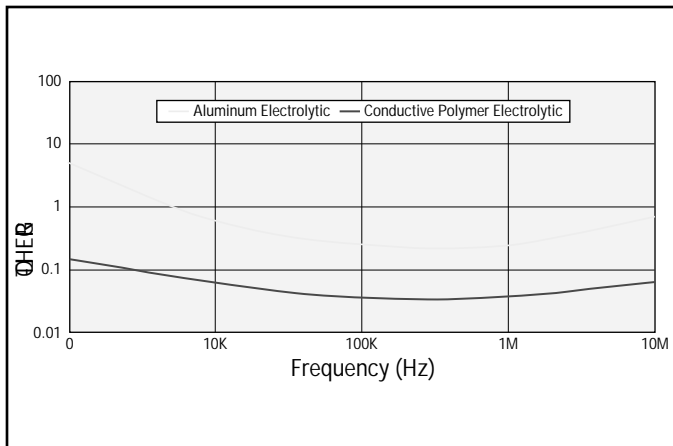
-R XLMW I\EQTPI XLI PMJI I\TIGXERG] SJ E
 standard electrolytic capacitor.

LSYV 4SP]QIV GETEGM

9PXVE 0S[-QTIHERGI EX ,MKL *VIUYIRG]

(YI XS E WSPMH TSP]QIV IPIGXVSP]XI XLI GYVZI SJ E GSRHYGXMZI TS
 than that of a standard electrolytic capacitor.

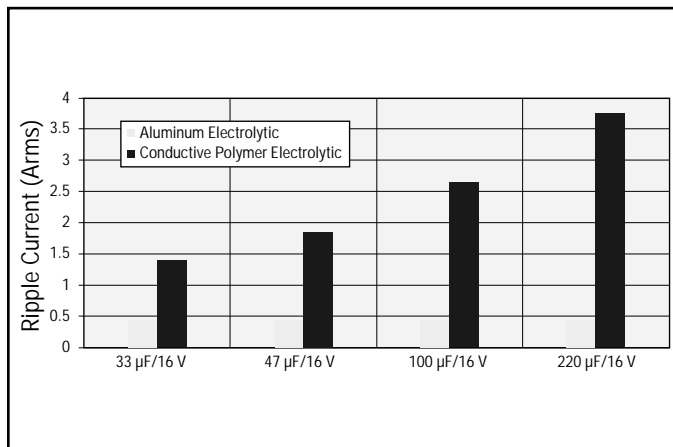
Ultra Low Impedance at High Frequency (Low ESR)



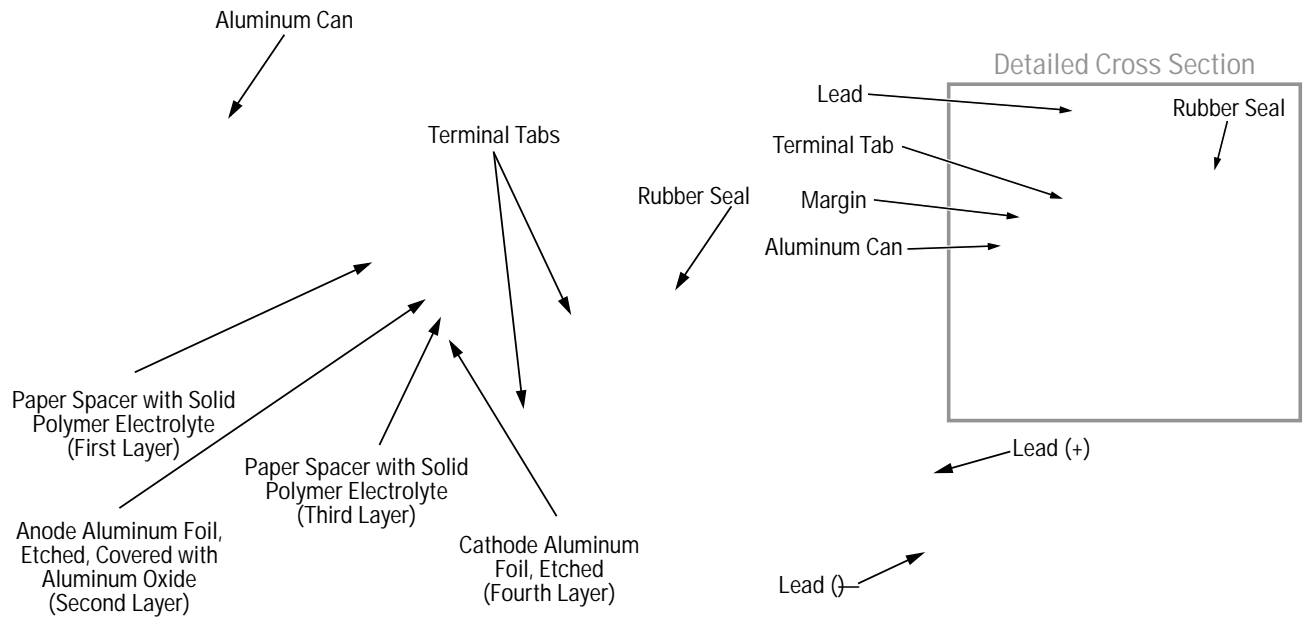
, MKL 6IWMWXERGI XS 6MTTPI 'YVVIRX

As a result of a lower ESR, conductive polymer electrolytic capacitors are able to withstand higher ripple currents during normal operation.

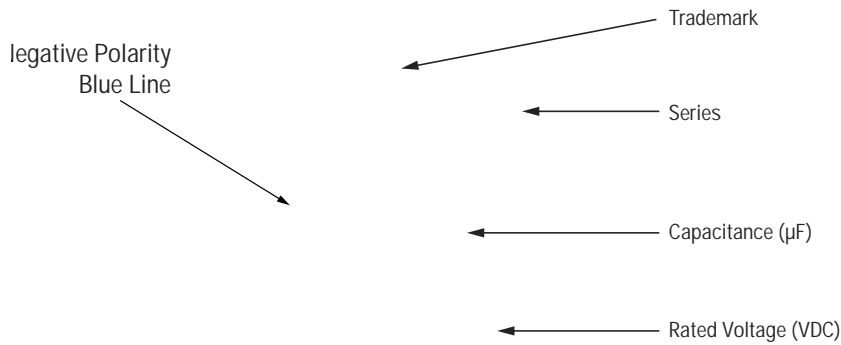
Allowable Ripple Current (100 kHz 105°C)



' S R W X V Y G X M S R



Marking



* P S [7 S P H I V M R K R S X W Y M X E F P I J S V 7 1 (T E V X W

8 L I W S P H I V M R K G S R H M X M S R W W L S Y P H F I [M X L M R X L I W T I G M μ I H G S R H

- Do not dip the capacitors body into the melted solder.
- Flux should only be applied to the capacitors terminals.
- Vapour heat transfer systems are not recommended. The system should be thermal, such as infra-red radiation or hot air blast.
- Observe the soldering conditions as shown below.

u (S R X I \ G I I H X L I W I P M Q M X W E R H E Z S M H V I T I E X I H V I \neq S [M R K

* P S [7 S P H I V M R K

| | 8 I Q T I V E X Y V E \ M Q Y Q q' | 7 I G S R H | 8 M 1 G E \ M Q Y Q W 6 I T I X M X M S R W |
|----------|---------------------------------------|-------------|--|
| Pre-heat | <120 | <120 | 1 |
| Solder | 260 ± 5°C | <10 | 2 |

8ETMRK JSV %YXSQEXMG -RWIVXMSR 1EGLMRIW

| (M Q Q | R | W | M D | S L | R L | d | P | P0 | P1 | P2 | F | W | W0 | W1 | W2 | , | , | S | D0 | A | , | | | | | | |
|--------------|---|---|--------|--------|--------|---|---|----|----|----|---|---|----|----|----|---|---|---|----|---|---|--|--|--|--|--|--|
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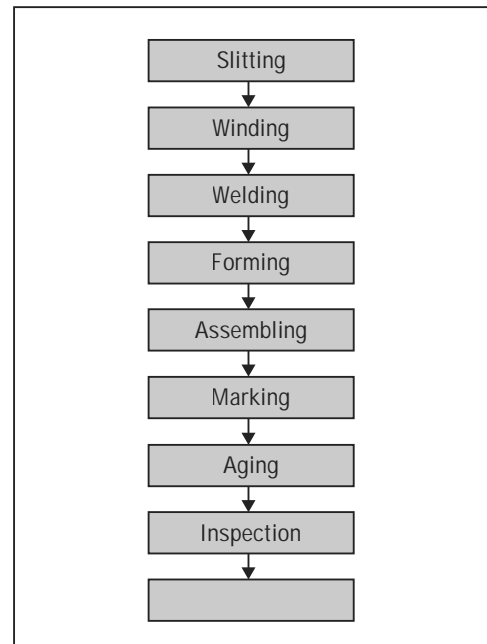
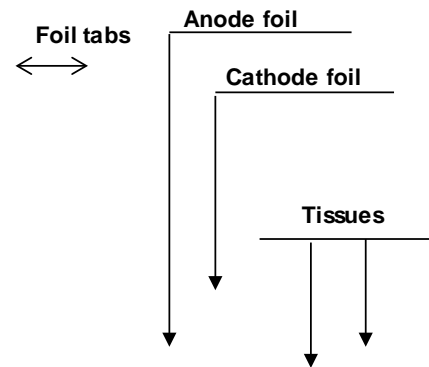
'SRWXVYGXMSR (EXE

The manufacturing process begins with the anode foil being electrochemically etched to increase the surface area and then 'formed' to produce the aluminum oxide layer. Both the anode and cathode foils are then interleaved with absorbent paper and wound into a cylinder. During the winding process, aluminum tabs are attached to each foil to provide the electrical contact.

The deck, complete with terminals, is attached to the tabs and then folded down to rest on top of the winding. The complete winding is impregnated with a conductive polymer electrolyte before being housed in a suitable container, usually an aluminum can, and sealed. Throughout the process, all materials inside the housing must be maintained at the highest purity and be compatible with the electrolyte.

Each capacitor is aged and tested before being packed. The purpose of aging is to repair any damage in the oxide layer and thus reduce the leakage current to a very low level. Aging is normally carried out at the rated temperature of the capacitor and is accomplished by applying voltage to the device while carefully controlling the supply current. The process may take several hours to complete. Damage to the oxide layer can occur due to variety of reasons:

- Slitting of the anode foil after forming
- Attaching the tabs to the anode foil
- Minor mechanical damage caused during winding



4VSHYGX 7EJIX]

THESE NOTES SHOULD BE READ IN CONJUNCTION WITH THE PRODUCT DATA SHEET. FAILURE TO OBSERVE THE RATINGS AND THE INFORMATION ON THIS SHEET MAY RESULT IN A SAFETY HAZARD.

Warning

;LIR TSXIRXMEP PIXLEP ZSPXEKIW I K :%' 617 SV :(' EVI ETTPMI
LE^EVH [EVRMRK PEFIP MW VIGSQQIRHIH

)PIGXVSP]XI

Conductive polymer aluminum solid electrolytic capacitors contain polymers (electrolytes) which can be hazardous.

7EJIX] 4VIGEYXMSRW

In the event of gas venting, avoid contact and inhalation. Wash the affected area with hot water. Use rubber gloves to avoid skin contact. Any contact with the eyes should be liberally irrigated with water and medical advice sought.

-RXVMRWMG 4VSTIVXMIW

3TIVEXMRK

DC capacitors are polar devices and will operate safely only if correctly connected. Reversing the connections will result in failure. Polarized operation may result in the above failure modes if:

- The surge voltage is exceeded
- The ambient temperature is too high
- Excessive ripple currents are applied

2SR 3TIVEXMRK

Excessive torque or soldering heat may affect the performance of the capacitor or damage the sealing. Electric shock may result if capacitors are not discharged.

(MWTSEWP

Aluminum electrolytic capacitors are consignable waste under the Special Waste Regulations 1996 (Statutory Instruments 1996 No 972), which complies with the EC Hazardous Waste Directive – Directive 91/689/EEC. The electrolyte should be disposed of as hazardous waste. For more information regarding its disposal, contact your local waste management authority.

Due to the construction of an aluminum electrolytic capacitors, high temperature incineration may cause the component to explode due to build-up of internal pressure. In addition, incineration may also cause the emission of noxious fumes. KEMET strongly recommends that if there are any doubts regarding the disposal of conductive polymer aluminum solid electrolytic capacitors, that advice be sought from the local regulating authority.

In addition, KEMET would like to request that users of aluminum electrolytic capacitors respect the needs of the environment, and, wherever possible, recover as much of the materials as possible, i.e. aluminum.

4VSHYGX 7EJIX] GSRX H

9RWEJI 9WI

Most failures are of a passive nature and do not represent a safety hazard. A hazard may, however, arise if this failure causes a dangerous malfunction of the equipment in which the capacitor is employed. Circuits should be designed to fail safe under the normal modes of failure.

The usual failure mode is an increase in leakage current or short circuit. Other possible modes are decrease of capacitance, increase in dissipation factor (and impedance) or an open circuit. Capacitors should be used in a well-ventilated enclosure or cabinet.

1SYRXMRK

Care should be taken when mounting by clamp, that any safety vent in the can is not covered.

*YQMKEXMSR

In many countries throughout the world it is now common practice to fumigate shipments of products in order to control insect infestation, particularly when wooden packaging is used. Currently, methyl bromide is widely used as a fumigant which can penetrate cardboard packing and polymer bags and, therefore, come into direct contact with equipment or components contained within.

If aluminum electrolytic capacitors become exposed to methyl bromide then corrosion may occur, depending upon the concentration and exposure time to the chemical.

This failure mode can affect all types of KEMET aluminum electrolytic capacitors. Methyl bromide can penetrate the seal of aluminum electrolytic capacitors and cause internal corrosion of the anode connection, resulting in the component becoming an open circuit. The rate of corrosion will depend upon the level of exposure to methyl bromide as well as the subsequent operating conditions in which the capacitor is used.

)1)8)PIGXVSRMGW 'SVTSVEXMSR 7EPIW 3J¤ GIW

*SV E GSQTPIXI PMWX SJ SYV KPSFEP WEPIW SJ¤ GIW TPIEWI ZMWMX

(MWGP EMQIV

% PP TVSHYGX WTIGM¤ GEXMSRW WXEXIQIRXW MRJSVQEXMSR ERH HEXE GSPPIGXMZIP] XLI p
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All Information given herein is believed to be accurate and reliable, but it is presented without guarantee, warranty, or responsibility of any kind, expressed or in

7XEXIQIRXW SJ WYMXEFMPMX] JSV GIVXEMR ETTPMGEXMSRW EVI FEWIH SR /)1)8)PIGXVSRMGW
ETTPMGEXMSRW FYX EVI RSX MRXIRHIH XS GSRWXMXYXI i ERH /)1)8 WTIGM¤ GEPP] HMWGP EMQ

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failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguard

WYGL EW MRWXEPPEXMSR SJ TVSXIGXMZI GMVGYMXV] SV VIHRYRHERGMIW MR SVHIV XS IRWYV
property damage.

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