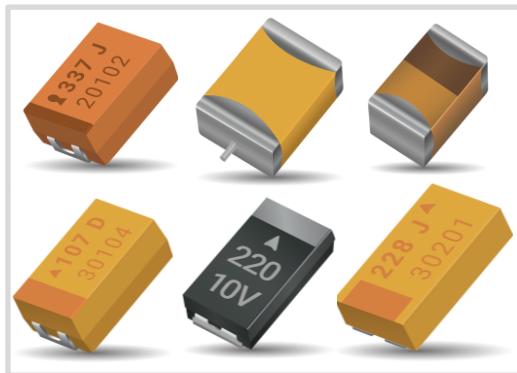


## Tantalum MnO<sub>2</sub>

TAJ, TMJ, TPS, TRJ, TRM, TPM, THJ, TLJ, TLN, TAC, TLC, TPC  
TC, TCT, TCS, NOJ, NOS,  
F72, F75, F91, F92, F93, F95, F97, AUDIO F95, F98

# Electrolytic Monthly Update

## August 2023



Scan Code for Datasheet



### Basic Overview

Voltage range is typically from 2.5 to 50V and the case size offering has grown from basic four EIA case sizes (A,B,C,D) to more than fifteen in order to better meet specific height or space limited design requirements. The other case sizes includes larger cases to offer capacitance up to 3300µF, small case sizes with high CV in a minimum footprint and low profile packages with heights as low as 0.5mm. The strength of the conventional MnO<sub>2</sub> technology is in the robustness against thermomechanical load, temperature and DC Bias stability, voltage range up to 50V and very good steady state reliability.

### Markets

Consumer, Industrial, Automotive, Medical, Aerospace

### Applications

- Digital equipment
- Audio/video signal filtering
- Power supply
- ECU, Tire pressure monitoring
- Hearing Aids

### Top Selling Points

- Wide capacity and voltage range
- 100% Surge Screening
- Wide temperature range -55/+200°C
- Volumetric efficiency

### Unique Feature

- Stable electrical parameters
- Low noise/limited piezo effect
- High long term reliability
- Unlimited lifetime
- Mechanical robustness

# Tantalum MnO<sub>2</sub>

TAJ, TMJ, TPS, TRJ, TRM, TPM, THJ, TLJ, TLN, TAC, TLC, TPC  
TC, TCT, TCS, NOJ, NOS,  
F72, F75, F91, F92, F93, F95, F97, AUDIO F95, F98

# Electrolytic Monthly Update

## August 2023

### How to Order

TAJ	C	106	M	035	R	NJ	—
Type	Case Size See table above	Capacitance Code pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	Tolerance K = ±10% M = ±20%	Rated DC Voltage 002 = 2.5Vdc 004 = 4Vdc 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Packaging R = Pure Tin 7" Reel S = Pure Tin 13" Reel A = Gold Plating 7" Reel B = Gold Plating 13" Reel H = Tin Lead 7" Reel (Contact Manufacturer) K = Tin Lead 13" Reel (Contact Manufacturer) H, K = Non RoHS	Specification Suffix NJ = Standard Suffix	Additional characters may be added for special requirements V = Dry pack Option (selected codes only)
TPS	C	107	M	010	R	0100	—
Type	Case Size See table above	Capacitance Code pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	Tolerance K = ±10% M = ±20%	Rated DC Voltage 002 = 2.5Vdc 004 = 4Vdc 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	Packaging R = Pure Tin 7" Reel S = Pure Tin 13" Reel A = Gold Plating 7" Reel B = Gold Plating 13" Reel H = Tin Lead 7" Reel (Contact Manufacturer) K = Tin Lead 13" Reel (Contact Manufacturer) H, K = Non RoHS	ESR in mΩ	Additional characters may be added for special requirements V = Dry pack Option (selected codes only)
F93	1A	106	M	A	—	—	—
Type	Rated Voltage	Capacitance Code pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	Tolerance K = ±10% M = ±20%	Case Size See table above	Packaging See Tape & Reel Packaging Section	—	—

### Catalogue

Latest electronic version of ***Polymer, Tantalum and Niobium Oxide Capacitors*** catalogue, that includes the F-series datasheets, available on the KYOCERA AVX web sites. Click [here](#) to download.

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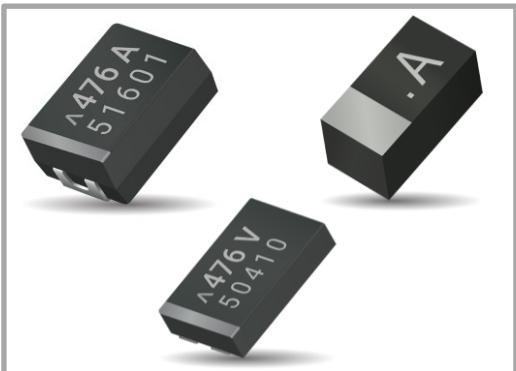


## Conductive Polymer

TCJ, TCM, TCN, J-CAP™, TCO, TCQ, F38  
TCTO, TCSO

# Electrolytic Monthly Update

## August 2023



Scan Code for Datasheet



### Basic Overview

One of the major contributors to ESR in a capacitor is the second electrode. The conventional tantalum capacitor uses  $\text{MnO}_2$  as the 2nd electrode with a relatively high resistivity which, in tantalum polymer capacitors, is replaced by an organic material – conductive polymer. This replacement leads to a significant reduction of ESR, especially at frequencies above 100kHz. Typically the ESR value is reduced in polymer technology by about a quarter compared to the  $\text{MnO}_2$  electrode.

### Markets

Telecommunications, Consumer, Networking, Industrial, Automotive

### Applications

- Telecommunications
- DC/DC converters
- LED Lighting drivers
- LCD TV
- SSD

### Top Selling Points

- Conductive polymer electrode
- Reduces ignition failure mode
- Lower ESR
- 3x reflow 260°C compatible
- CV range 0.47 – 1500 $\mu\text{F}$  / 2.5 – 125V

### Unique Features

- High voltage usage with low derating (10-20%)
- Wide temperature range –55/up to +125°C
- Stable parameters over temperature and voltage range
- High inrush and ripple current capability
- Lower drop of capacitance with higher frequency

# Conductive Polymer

TCJ, TCM, TCN, J-CAP™, TCO, TCQ, F38  
TCTO, TCSO

# Electrolytic Monthly Update

## August 2023

## How to Order

<b>TCJ</b> Type	<b>A</b> Case Size See table above	<b>226</b> Capacitance Code pf-code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	<b>M</b> Tolerance $M \pm 20\%$	<b>004</b> Rated DC Voltage 002 = 2.5Vdc 004 = 4Vdc 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc	<b>R</b> Packaging R = Pure Tin 7" Reel S = Pure Tin 13" Reel	<b>0300</b> ESR in mΩ	<b>E</b> Additional Character E = Black resin (It is possible to order PN without "E" as identical product)
<b>F38</b> Type	<b>1A</b> Rated Voltage	<b>225</b> Capacitance Code pf-code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)	<b>M</b> Tolerance $M \pm 20\%$	<b>M</b> Case Size See table above	<b>Packaging</b> □	<b>AXE</b> Reel Dia. (ø180) Tape Width (mm) A 8	<b>Special Code</b> AXE = Rated temperature 60°C and H dimension 1.0mm Max. AXEH3 = Rated temperature 60°C and H dimension 1.0mm Max., Low ESR LZT = Rated temperature 60°C L2TH1 = Rated temperature 60°C, Low ESR AH1, AH2, AH3 = Low ESR H6Z = H dimension 0.8mm Max.

## Catalogue

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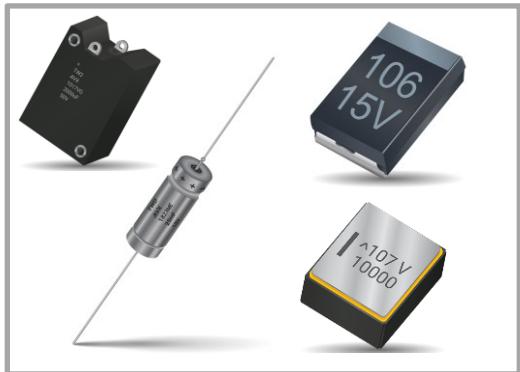


## HighRel Tantalum

TAJ ESCC, TAJ CECC, TES, TBJ, TBM, T4J, T4C, TCB, TCS, TCD, TAZ, T4Z, TBC, TCH, THH, DLA 93026, TWA, TWA-X, TWA-Y, TWC, TWD, TWM, TWS DLA 13017, CWR09/11/19/29, TCP

# Electrolytic Monthly Update

## August 2023



Scan Code for Datasheet



### Basic Overview

As tantalum technology continues to develop, we are able to offer extended ratings providing more downsizing opportunities, higher capacitance ratings, new case sizes and Low ESR options for critical output filtering applications. Combining this with in-line reliability grading capability for all chip capacitor series, we are able to supply these products to the most demanding applications.

### Markets

Industrial, Medical, Military, Avionics, Hi-Rel

### Applications

- Aerospace
- Down-hole exploration
- Avionics
- Satellites

### Top Selling Points

- ESA & MIL qualified plants
- Aerospace screening options
- Dedicated space products
- Low ESR and miniature designs
- Wide temperature range -55/+230°C
- High reliability and CV
- High voltage up to 125V

### Unique Features

- COTS-Plus – Weibull grade: Extended range / Low ESR Series
- ESA QPL qualified products
- DLA Drawing
- MIL QPL 55365 – (Including MIL “T” Level)
- SRC9000 Space Level
- Medical Grade

## HighRel Tantalum

TAJ ESCC, TAJ CECC, TES, TBJ, TBM, T4J, T4C, TCB, TCS, TCD, TAZ, T4Z, TBC, TCH, THH, DLA 93026, TWA, TWA-X, TWA-Y, TWC, TWD, TWM, TWS DLA 13017, CWR09/11/19/29, TCP

# Electrolytic Monthly Update

## August 2023

### How to Order

TCH	9	687	M	016	W	0040	#
Type	Case Size See table above	Capacitance Code pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	Tolerance M = ±20%	Rated DC Voltage	Packaging W = Waffle	ESR in mΩ	Termination C = 'J' lead C-shape (Sn/Pb) J = 'J' lead L-shape (Gold) L = 'J' lead L-shape (Sn/Pb) U = Undertab C, L = Non RoHS
				010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc	050 = 50Vdc 063 = 63Vdc 075 = 75Vdc 100 = 100Vdc		

### Catalogue

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## Aluminum

APA, APD, APV, APZ, AHA, AHC, AEA, AEF, AEH, AEK, REA, REH, REF, RPA, PRF, RHD, RHA

# Electrolytic Monthly Update

## August 2023



Scan Code for Datasheet



### Basic Overview

Aluminium electrolytic capacitors provide high-CV performance in small packages, very low equivalent series resistance (ESR), high endurance, and compatibility with lead-free requirements. Available in 3 technologies, as conductive polymer, hybrid electrolytic and standard wet aluminium electrolytic.

### Markets

Industrial and commercial

### Applications

- LED
- DC/DC convertors
- Computer
- Telecom
- White goods
- Coupling / Decoupling
- Power Hold Up

### Top Selling Points

- Product Range
- One Stop Capacitor Supplier (see Kyocera AVX entire cap product ranges)

### Unique Features

- SMD V-Chip (Classic, Polymer, Hybrid)
- Super Low ESR
- RoHS Compliant
- High Voltage,
- Long Life

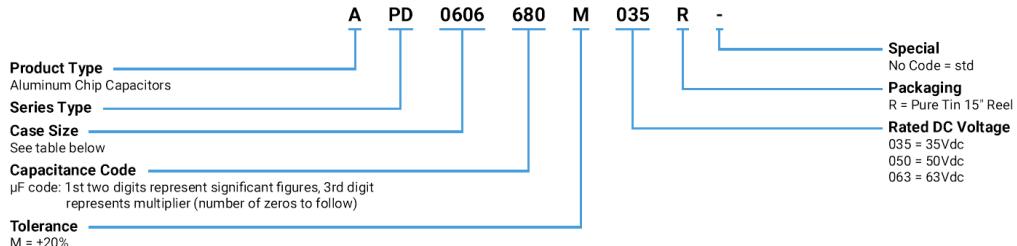
## Aluminum

APA, APD, APV, APZ, AHA, AHC, AEA, AEF, AEH, AEK,  
REA, REH, REF, RPA, PRF, RHD, RHA

# Electrolytic Monthly Update

## August 2023

### How to Order



### Catalogue

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