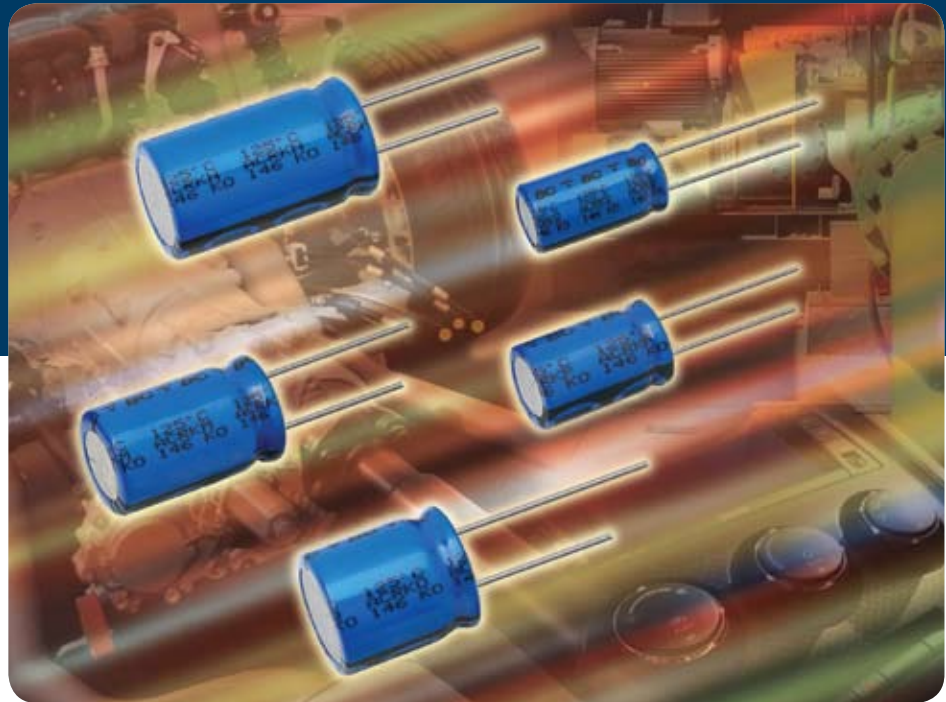




ALUMINUM CAPACITORS

146 RTI MAL2146xxxxxE3



Radial Aluminum Capacitors for Advanced Applications

KEY BENEFITS

- Low impedance, high ripple current at high temperature
- Long useful life
- RoHS-compliant electronic circuits in automotive, industrial, and SMPS products
- Filtering of unwanted noise
- Smoothing of DC voltages
- Buffering of energy
- Decoupling of super-imposed AC ripple

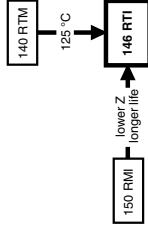
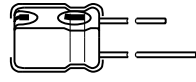
AUTOMOTIVE APPLICATIONS

- Electro-hydraulic power steering (EHPS)
- Electric power steering (EPS)
- Engine control
- Electric brake (EPB)
- Variable speed ventilation (HVAC)
- Power management and conversion

INDUSTRIAL APPLICATIONS

- Variable speed motor control
- Drives
- SMPS, operating in harsh environment
- Variable speed pumps

Aluminum Capacitors Radial, High Temperature, Low Impedance



FEATURES

- Polarized aluminum electrolytic capacitors, non-solid electrolyte
- Radial leads, cylindrical aluminum case with pressure relief, insulated with a blue PET sleeve
- Charge and discharge proof
- Very long useful life: 2500 h to 6000 h at 125 °C, high stability, high reliability
- Very low ESR
- Excellent ripple current capability



RoHS COMPLIANT

APPLICATIONS

- Power supplies (SMPS, dc to dc converters) for industrial, automotive, telecommunications and military
- Smoothing, filtering and buffering

MARKING

The capacitors are marked (where possible) with the following information:

- Rated capacitance (in μF)
- Tolerance on rated capacitance, code letter in accordance with IEC 60062 (M for $\pm 20\%$)
- Rated voltage (in V)
- Date code, in accordance with IEC 60062
- Code indicating factory of origin
- Logo of manufacturer
- Upper category temperature (125 °C)
- Negative terminal identification
- Series number (146)

QUICK REFERENCE DATA

DESCRIPTION	VALUE
Nominal case sizes (Ø D x L in mm)	10 x 12 to 18 x 35
Rated capacitance range, C_R	68 μF to 6800 μF
Tolerance on C_R	$\pm 20\%$
Rated voltage range, U_R	16 V to 63 V
Category temperature range	-55 °C to +125 °C
Endurance test at 125 °C	2000 h to 5000 h
Useful life at 40 °C, 1.8 x I_R applied	2500 h to 6000 h
Useful life at 0 V, 125 °C	400,000 h
Shelf life at 0 V, 125 °C	1000 h
Based on sectional specification	IEC 60394-4/EN130300
Climatic category IEC 60068	55/125/56

SELECTION CHART FOR C_R , U_R AND RELEVANT NOMINAL CASE SIZES (Ø D x L in mm)

C_R (μF)	U_R (V)			
	16	25	35	50
1500	12.5 x 20	12.5 x 25	18 x 20	16 x 35
1800	-	16 x 20	16 x 25	18 x 31
2200	12.5 x 25	-	18 x 25	18 x 35
2700	16 x 20	18 x 20	16 x 31	-
3300	18 x 20	16 x 31	18 x 31	-
3900	16 x 25	18 x 25	-	-
4700	18 x 25	16 x 35	-	-
5600	16 x 31	18 x 31	-	-
6800	16 x 35	18 x 35	-	-
	18 x 31	-	-	-

RIPPLE CURRENT AND USEFUL LIFE

Table 3

ENDURANCE TEST DURATION AND USEFUL LIFE AS A FUNCTION OF CASE SIZE

NOMINAL CASE SIZE Ø D x L (mm)	CASE CODE	ENDURANCE at 125 °C (h)	USEFUL LIFE at 125 °C (h)
10 x 12	14	2000	2500
10 x 16	15	2000	2500
10 x 20	16	2000	3000
12.5 x 20	17	2000	3000
12.5 x 25	18	3000	5000
16 x 20	19a	3000	4000
16 x 25	19	3000	5000
16 x 31	20	4000	6000
16 x 35	21	5000	6000
18 x 20	1820	3000	4000
18 x 25	1825	3000	5000
18 x 31	1831	4000	6000
18 x 35	22	5000	6000

SELECTION CHART FOR C_R , U_R AND RELEVANT NOMINAL CASE SIZES (Ø D x L in mm)

C_R (μF)	U_R (V)			
	16	25	35	50
68	-	-	-	10 x 12
100	-	-	-	10 x 16
150	-	-	-	10 x 20
220	-	-	10 x 12	10 x 16
330	-	10 x 12	10 x 16	12.5 x 20
390	-	10 x 16	10 x 20	16 x 20
470	10 x 12	10 x 16	10 x 20	12.5 x 20
560	-	-	-	16 x 25
680	10 x 16	10 x 20	12.5 x 20	18 x 25
820	-	-	-	16 x 31
1000	10 x 20	12.5 x 20	16 x 20	18 x 31
	-	-	-	16 x 25
1200	-	-	16 x 20	18 x 25
	-	-	-	16 x 31

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