150 CRZ SMD Aluminum Capacitors, Low Impedance

KEY BENEFITS

- Low impedance down to 35 mΩ, high ripple current
- AEC-Q200 qualified
- Additional features for MAL215099 ... E3 parts:
  - Extended useful life to 10 000 h at 105 °C
  - High-temperature reflow soldering according to JEDEC J-STD-020

APPLICATIONS

- RoHS compliant high-temperature electronic circuits in automotive, industrial and SMPS products
- Filtering of unwanted noise
- Smoothing of DC voltages
- Buffering of electrical energy
- Decoupling of super-imposed AC ripple

RESOURCES

- Datasheet: 150 CRZ - http://www.vishay.com/doc?28395
- For technical questions contact aluminumcaps1@vishay.com
- Material categorization: For definitions of compliance please see http://www.vishay.com/doc?99912

AUTOMOTIVE GRADE

RoHS COMPLIANT

One of the World's Largest Manufacturers of
Discrete Semiconductors and Passive Components

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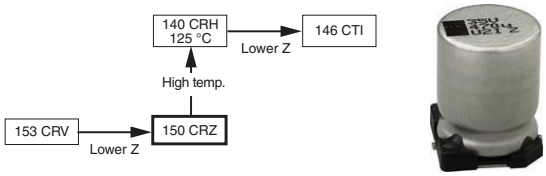

FEATURES

- Extended useful life: Up to 10 000 h at 105 °C for MAL215099...E3 parts
- Polarized aluminum electrolytic capacitors, non-solid electrolyte, self healing
- SMD-version with base plate, lead (Pb)-free reflow solderable
- Very low impedance, very high ripple current
- Charge and discharge proof, no peak current limitation
- Parts for advanced high temperature reflow soldering according to JEDEC® J-STD-020
- Vibration proof, 4-pin version and 6-pin version
- AEC-Q200 qualified
- High reliability
- Low ESR
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

APPLICATIONS

- SMD technology, for high temperature reflow soldering
- Industrial and professional applications
- Automotive, general industrial, telecom
- Smoothing, filtering, buffering

MARKING

- Rated capacitance (in µF)
- Rated voltage (in V)
- Date code, in accordance with IEC 60062
- Black mark or "-" sign indicating the cathode (the anode is identified by bevelled edges)
- Code indicating group number (Z)

QUICK REFERENCE DATA	
DESCRIPTION	**VALUE**
Nominal case sizes (L x W x H in mm)	8 x 8 x 10 to 18 x 18 x 21
Rated capacitance range, C_R	4.7 µF to 10 000 µF
Tolerance on C_R	± 20 %
Rated voltage range, U_R	6.3 V to 100 V
Category temperature range	
6.3 V to 63 V:	-55 °C to +105 °C
80 V to 100 V:	-40 °C to +105 °C
Endurance test at 105 °C	2000 h to 8000 h
Useful life at 105 °C	2500 h to 10 000 h
Useful life at 40 °C; 1.8 x I_R applied	125 000 h to 500 000 h
Shelf life at 0 V, 105 °C	1000 h
Based on sectional specification	IEC 60384-18/CECC 32300
Climatic category IEC 60068	
6.3 V to 63 V:	55/105/56
80 V to 100 V:	40/105/56

ADVANCED SOLDERING PROFILE FOR LEAD (Pb)-FREE REFLOW PROCESS ACCORDING TO JEDEC J-STD-020

REFLOW SOLDERING CONDITIONS for MAL215099xxxE3			
PROFILE FEATURES	**CASE CODE 1010 TO 1012**	**CASE CODE 1213 TO 1216**	**CASE CODE 1616 TO 1821**
Max. time from 25 °C to T_{Peak}	300 s	300 s	300 s
Max. ramp-up rate to 150 °C	3 K/s	3 K/s	3 K/s
Max. time from 150 °C to 200 °C (t_1)	150 s	150 s	150 s
Max. time from 190 °C to 200 °C (t_2)	110 s	110 s	110 s
Ramp-up rate from 200 °C to T_{Peak}	0.5 K/s to 3 K/s	0.5 K/s to 3 K/s	0.5 K/s to 3 K/s
Max. time above $T_{Liquidus}$ (217 °C) (t_3)	90 s	90 s	90 s
Max. time above 230 °C (t_4)	70 s	65 s	60 s
Peak temperature T_{Peak}	260 °C	250 °C	245 °C
Max. time above T_{Peak} minus 5 °C	40 s	30 s	30 s
Ramp-down rate from $T_{Liquidus}$	3 K/s to 6 K/s	3 K/s to 6 K/s	3 K/s to 6 K/s

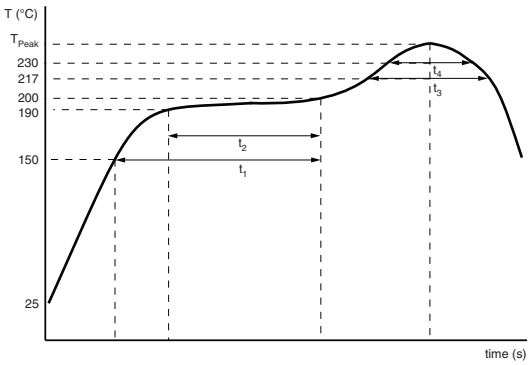

Fig. 5 - Maximum temperature load during reflow soldering

Revision 17-Oct-14

Notes

- Temperature measuring point on top of the case and on terminals.
- Max. 2 runs with pause of min. 30 minutes in between.