



152 CME Series Sample Kit High Voltage SMD Aluminum Electrolytic Capacitors



RoHS
COMPLIANT

FEATURES

- Extended useful life: up to 6000 h at 105 °C
- Polarized aluminum electrolytic capacitors, non-solid electrolyte, self healing
- SMD-version with base plate, lead (Pb)-free reflow solderable
- Charge and discharge proof, no peak current limitation
- Advanced temperature reflow soldering according to JEDEC® J-STD-020
- Vibration proof, 4-pin version and 6-pin version
- AEC-Q200 qualified
- High reliability
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

LINKS TO ADDITIONAL RESOURCES



ORDER CODE

MAL215299001E3

QUICK REFERENCE DATA	
DESCRIPTION	VALUE
Nominal case sizes (L x W x H in mm)	10 x 10 x 10 to 18 x 18 x 21
Rated capacitance range, C _R	2.2 µF to 33 µF
Tolerance on C _R	± 20 %
Rated voltage range, U _R	400 V to 450 V
Category temperature range	-40 °C to +105 °C
Endurance test at 105 °C	1000 h to 5000 h
Useful life at 105 °C	1500 h to 6000 h
Useful life at 40 °C 1.8 x I _R applied	75 000 h to 300 000 h
Shelf life at 0 V, 105 °C	1000 h
Based on sectional specification	IEC 60384-18 / CECC 32300
Climatic category IEC 60068	40 / 105 / 56

APPLICATIONS

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

PACKED SAMPLE KIT VALUES			
CAPACITANCE (µF)	VOLTAGE (V)	DIMENSIONS D x L (mm)	PART NUMBER
2.2	400	10 x 10	MAL215299601E3
6.8	400	12 x 13	MAL215299603E3
10	400	12 x 16	MAL215299604E3
18	400	16 x 16	MAL215299605E3
4.7	450	12 x 13	MAL215299702E3
5.6	450	12 x 16	MAL215299703E3
10	450	16 x 16	MAL215299704E3
15	450	16 x 21	MAL215299705E3
22	450	18 x 16	MAL215299706E3
33	450	18 x 21	MAL215299707E3

Note

- For further technical specifications please look into datasheet of series 152 CME: <https://www.vishay.com/doc?28459>

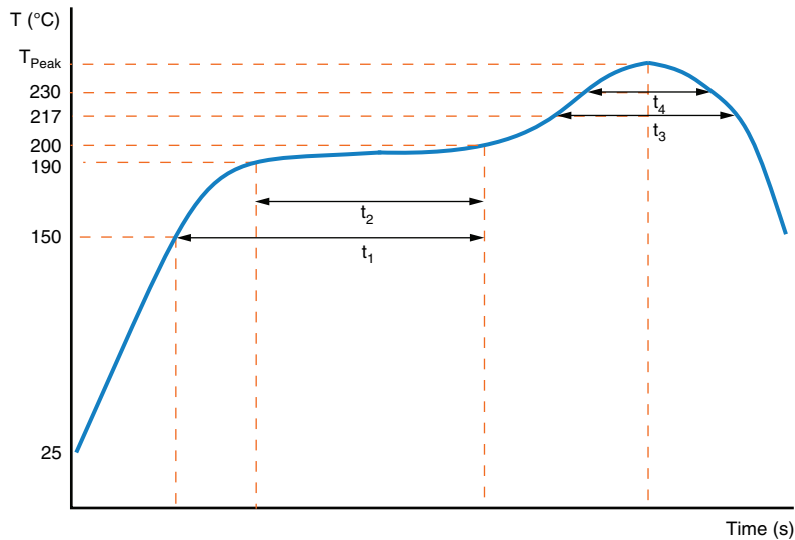
**ADVANCED SOLDERING PROFILE FOR LEAD (Pb)-FREE REFLOW PROCESS
ACCORDING TO JEDEC J-STD-020**


Fig. 1 - Maximum temperature load during reflow soldering

REFLOW SOLDERING CONDITIONS for MAL215299xxxE3			
PROFILE FEATURES	CASE CODE 1010	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

Notes

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