

140 CRH SMD Aluminum Capacitor, RoHS Compliant



KEY BENEFITS

- High-temperature operation (125 °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
- Vibration proof, 4-pin version and 6-pin version, AEC-Q200 qualified
- Additional features for MAL214099xxxE3 parts:
 - Extended useful life to 6000 h at 125 °C
 - High-temperature reflow soldering per JEDEC J-STD-020

APPLICATIONS

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

RESOURCES

- Datasheet: 140 CRH - <http://www.vishay.com/doc?28396>
- For technical questions contact aluminumcaps1@vishay.com
- Material categorization: For definitions of compliance please see <http://www.vishay.com/doc?99912>

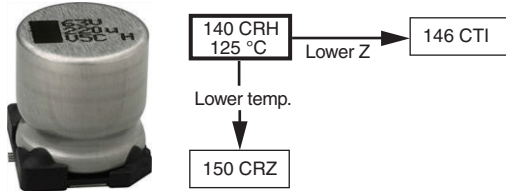


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QUICK REFERENCE DATA	
DESCRIPTION	VALUE
Nominal case sizes (L x W x H in mm)	8 x 8 x 10 to 18 x 18 x 21
Rated capacitance range, C_R	10 μF to 4700 μF
Tolerance on C_R	$\pm 20\%$
Rated voltage range, U_R	6.3 V to 63 V
Category temperature range	- 55 °C to + 125 °C
Endurance test at 125 °C	1000 h to 5000 h
Useful life at 125 °C	1500 h to 6000 h
Useful life at 40 °C 1.8 x I_R applied	150 000 h to 500 000 h
Shelf life at 0 V, 125 °C	1000 h
Based on sectional specification	IEC 60384-18/CECC 32300
Climatic category IEC 60068	55/125/56

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 (H)

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

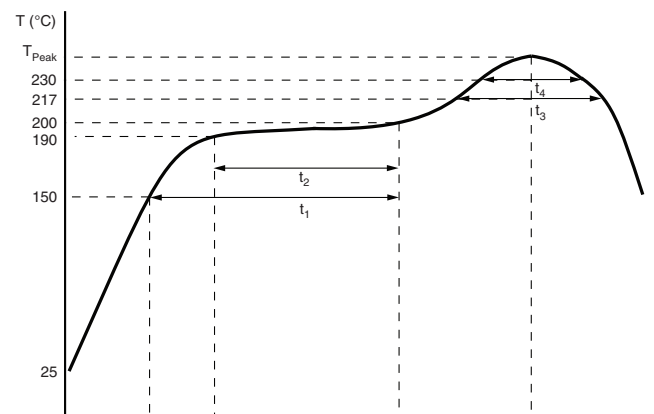


Fig. 5 - Maximum temperature load during reflow soldering

REFLOW SOLDERING CONDITIONS for MAL214099xxxE3

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

Revision 23-April-13

Notes

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