

Actual Situation of Lead Free Soldering for GPC

June 30th, 2008

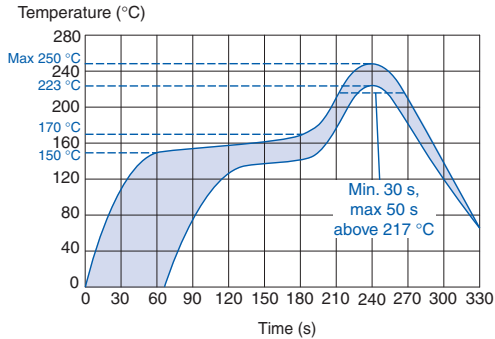
All following GPC capacitors, with manufacturing code W7 (July 2008) and later, are capable to fulfil the recommended reflow soldering profile for lead free process presented at end of this document.

Capacitance µF	Size code	Dimensions in mm ±0.2		Max dU/dt V/µs	Article code	Capacitance µF	Size code	Dimensions in mm ±0.2		Max dU/dt V/µs	Article code
		B	H					B	H		
63 VDC/40 VAC						250 VDC/160 VAC					
CHIP LENGTH 7.3 MM CODE 2824						CHIP LENGTH 7.3 MM CODE 2824					
0.00047	K31	6.0	2.5	400	GPC7.3 471K63K31 TR12	0.00047	K31	6.0	2.5	1200	GPC7.3 471K250K31 TR12
0.00068	K31	6.0	2.5	400	GPC7.3 681K63K31 TR12	0.00068	K31	6.0	2.5	1200	GPC7.3 681K250K31 TR12
0.0010	K31	6.0	2.5	400	GPC7.3 102K63K31 TR12	0.0010	K31	6.0	2.5	1200	GPC7.3 102K250K31 TR12
0.0015	K31	6.0	2.5	400	GPC7.3 152K63K31 TR12	0.0015	K31	6.0	2.5	1200	GPC7.3 152K250K31 TR12
0.0022	K31	6.0	2.5	400	GPC7.3 222K63K31 TR12	0.0022	K31	6.0	2.5	1200	GPC7.3 222K250K31 TR12
0.0033	K31	6.0	2.5	400	GPC7.3 332K63K31 TR12	0.0033	K31	6.0	2.5	1200	GPC7.3 332K250K31 TR12
0.0047	K31	6.0	2.5	400	GPC7.3 472K63K31 TR12	0.0047	K31	6.0	2.5	1200	GPC7.3 472K250K31 TR12
0.0068	K31	6.0	2.5	400	GPC7.3 682K63K31 TR12	0.0068	K33	6.0	3.0	1200	GPC7.3 682K250K33 TR12
0.010	K31	6.0	2.5	400	GPC7.3 103K63K31 TR12	0.010	K33	6.0	3.0	1200	GPC7.3 103K250K33 TR12
0.015	K31	6.0	2.5	400	GPC7.3 153K63K31 TR12	0.015	K35	6.0	3.5	1200	GPC7.3 153K250K35 TR12
0.022	K31	6.0	2.5	400	GPC7.3 223K63K31 TR12	0.022	K37	6.0	4.5	1200	GPC7.3 223K250K37 TR12
0.033	K33	6.0	3.0	400	GPC7.3 333K63K33 TR12						
0.047	K33	6.0	3.0	400	GPC7.3 473K63K33 TR12						
0.068	K35	6.0	3.5	400	GPC7.3 683K63K35 TR12						
0.10	K37	6.0	4.5	400	GPC7.3 104K63K37 TR12						
100 VDC/63 VAC						400 VDC/200 VAC					
CHIP LENGTH 7.3 MM CODE 2824						CHIP LENGTH 7.3 MM CODE 2824					
0.00047	K31	6.0	2.5	800	GPC7.3 471K100K31 TR12	0.00047	K31	6.0	2.5	1600	GPC7.3 471K400K31 TR12
0.00068	K31	6.0	2.5	800	GPC7.3 681K100K31 TR12	0.00068	K31	6.0	2.5	1600	GPC7.3 681K400K31 TR12
0.0010	K31	6.0	2.5	800	GPC7.3 102K100K31 TR12	0.0010	K31	6.0	2.5	1600	GPC7.3 102K400K31 TR12
0.0015	K31	6.0	2.5	800	GPC7.3 152K100K31 TR12	0.0015	K31	6.0	2.5	1600	GPC7.3 152K400K31 TR12
0.0022	K31	6.0	2.5	800	GPC7.3 222K100K31 TR12	0.0022	K31	6.0	2.5	1600	GPC7.3 222K400K31 TR12
0.0033	K31	6.0	2.5	800	GPC7.3 332K100K31 TR12	0.0033	K31	6.0	2.5	1600	GPC7.3 332K400K31 TR12
0.0047	K31	6.0	2.5	800	GPC7.3 472K100K31 TR12	0.0047	K33	6.0	3.0	1600	GPC7.3 472K400K33 TR12
0.0068	K31	6.0	2.5	800	GPC7.3 682K100K31 TR12	0.0068	K35	6.0	3.5	1600	GPC7.3 682K400K35 TR12
0.010	K31	6.0	2.5	800	GPC7.3 103K100K31 TR12	0.010	K37	6.0	4.5	1600	GPC7.3 103K400K37 TR12
0.015	K33	6.0	3.0	800	GPC7.3 153K100K33 TR12						
0.022	K33	6.0	3.0	800	GPC7.3 223K100K33 TR12						
0.033	K35	6.0	3.5	800	GPC7.3 333K100K35 TR12						
0.047	K37	6.0	4.5	800	GPC7.3 473K100K37 TR12						
160 VDC/100 VAC						630 VDC/300 VAC					
CHIP LENGTH 7.3 MM CODE 2824						CHIP LENGTH 7.3 MM CODE 2824					
0.00047	K31	6.0	2.5	1000	GPC7.3 471K160K31 TR12	0.00047	K31	6.0	2.5	2000	GPC7.3 471K630K31 TR12
0.00068	K31	6.0	2.5	1000	GPC7.3 681K160K31 TR12	0.00068	K31	6.0	2.5	2000	GPC7.3 681K630K31 TR12
0.0010	K31	6.0	2.5	1000	GPC7.3 102K160K31 TR12	0.0010	K31	6.0	2.5	2000	GPC7.3 102K630K31 TR12
0.0015	K31	6.0	2.5	1000	GPC7.3 152K160K31 TR12	0.0015	K31	6.0	2.5	2000	GPC7.3 152K630K31 TR12
0.0022	K31	6.0	2.5	1000	GPC7.3 222K160K31 TR12	0.0022	K33	6.0	3.0	2000	GPC7.3 222K630K33 TR12
0.0033	K31	6.0	2.5	1000	GPC7.3 332K160K31 TR12	0.0033	K33	6.0	3.0	2000	GPC7.3 332K630K33 TR12
0.0047	K31	6.0	2.5	1000	GPC7.3 472K160K31 TR12	0.0047	K35	6.0	3.5	2000	GPC7.3 472K630K35 TR12
0.0068	K31	6.0	2.5	1000	GPC7.3 682K160K31 TR12	0.0068	K37	6.0	4.5	2000	GPC7.3 682K630K37 TR12
0.010	K33	6.0	3.0	1000	GPC7.3 103K160K33 TR12						
0.015	K33	6.0	3.0	1000	GPC7.3 153K160K33 TR12						
0.022	K35	6.0	3.5	1000	GPC7.3 223K160K35 TR12						
0.033	K37	6.0	4.5	1000	GPC7.3 333K160K37 TR12						
1000 VDC/350 VAC						CHIP LENGTH 7.3 MM CODE 2824					
CHIP LENGTH 7.3 MM CODE 2824						CHIP LENGTH 7.3 MM CODE 2824					
0.00047	K31	6.0	2.5	2200	GPC7.3 471K1000K31 TR12	0.00047	K31	6.0	2.5	2200	GPC7.3 471K1000K31 TR12
0.00068	K31	6.0	2.5	2200	GPC7.3 681K1000K31 TR12	0.00068	K31	6.0	2.5	2200	GPC7.3 681K1000K31 TR12
0.0010	K31	6.0	2.5	2200	GPC7.3 102K1000K31 TR12	0.0010	K31	6.0	2.5	2200	GPC7.3 102K1000K31 TR12
0.0015	K33	6.0	3.0	2200	GPC7.3 152K1000K33 TR12	0.0015	K33	6.0	3.0	2200	GPC7.3 152K1000K33 TR12
0.0022	K33	6.0	3.0	2200	GPC7.3 222K1000K33 TR12	0.0022	K33	6.0	3.0	2200	GPC7.3 222K1000K33 TR12
0.0033	K35	6.0	3.5	2200	GPC7.3 332K1000K35 TR12	0.0033	K35	6.0	3.5	2200	GPC7.3 332K1000K35 TR12
0.0047	K37	6.0	4.5	2200	GPC7.3 472K1000K37 TR12	0.0047	K37	6.0	4.5	2200	GPC7.3 472K1000K37 TR12

Reflow soldering on the top body surface of the component

Preheating temperature should be less than 170 °C. The time above 217 °C should be less than 50 s. The peak temperature must not exceed 250 °C.

This profile is recommended for convection reflow ovens and IR reflow ovens. If vapour phase reflow oven is used, please consult Evox Rifa.



This recommended reflow soldering profile for lead free soldering is valid for those GPC products listed above, which have manufacturing code W7 (July 2008) and later.

For marking of our SMD capacitors, please see page 18 in the Evox Rifa SMD Film Capacitors catalogue or www.evoxrifa.com/smd_catalog/wound_tech_caps/gen_info_wound_smd.pdf

Exceeding the manufacturer's process recommendations may harm the component and keep the manufacturer not liable for any defect caused by exceeding the recommendations.

According to international standards, the maximum temperature capability shall be measured on the top surface of a component. Any of the international standards do not define how the thermocouple should be fastened on the component. Our recommendation for attaching the thermocouple on the top surface of the component is glueing with high temperature resistant glue.

All updates for SMD capacitors reflow capability will be informed through www.evoxrifa.com.

Additional information available directly from Mr. Matti Niskala, e-mail MattiNiskala@kemet.com, telephone +358 50 387 3205.