

MARKING OF SMD CAPACITORS

The nominal **capacitance value** is given with 3 digits EIA-code,

Examples: 103 = 10000 pF = 10 nF = 0.01 μF

The **capacitance tolerance** is expressed with letter codes:

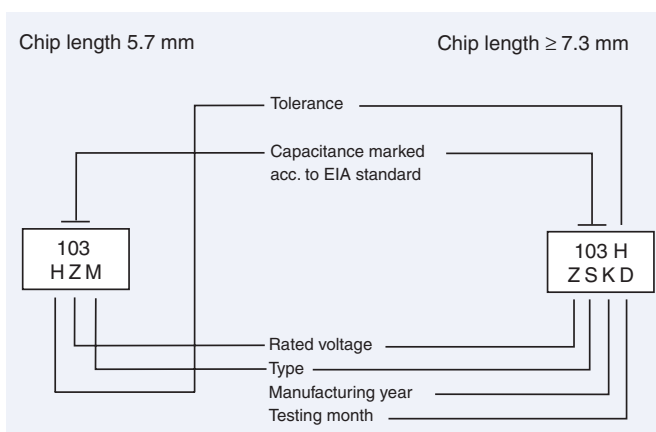
M	± 20 %	H	± 2.5 %
K	± 10 %	G	± 2 %
J	± 5 %	F	± 1 %

The **rated voltage** is expressed with letter codes:

Z	50 VDC	H	250 VDC
C	63 VDC	K	400 VDC
D	100 VDC	M	630 VDC
F	160 VDC	P	1000 VDC
W	12 00 VDC		

The **capacitor type** codes are as follows:

M	MMC	P	GPC
S	SMC, SMW	D	SPC
G	GMC, GMW		

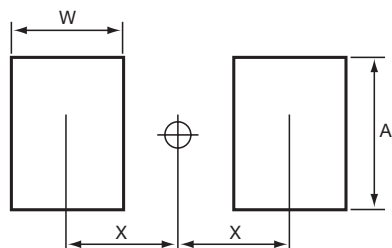


The **manufacturing year** and the **testing month** are expressed according to IEC 60062, see table on page 10.

SOLDERING OF WOUND SMD CAPACITORS

The recommended soldering land dimensions are:

L mm	Case size		W		Ah		Av		X	
	Horizontal	Vertical	mils	mm	mils	mm	mils	mm	mils	mm
5.7	2220 - J31, J91		60	1.5	200	5.1			118.58	3.0
5.7	2220 - J33, J93		60	1.5	200	5.1			118.58	3.0
5.7	2220 - J35, J95		60	1.5	200	5.1			118.58	3.0
7.3	2824 - K31, K91		60	1.5	240	6.1			148.11	3.8
7.3	2824 - K33, K93		60	1.5	240	6.1			148.11	3.8
7.3	2824 - K35, K95		60	1.5	240	6.1			148.11	3.8
7.3	2824 - K37, K97		60	1.5	240	6.1			148.11	3.8
10.2	4036 - A31	4022 - A31V	80	2.0	360	9.1	220	5.6	217.15	5.5
12.7	5045 - B31	5026 - B31V	100	2.5	455	11.6	260	6.6	276.4	7.0
16.5	6560 - C31	6528 - C31V	120	3.0	590	15.0	280	7.1	355.3	9.0



Ah = horizontal mounting
Av = vertical mounting

Land dimensions for PCB design are available in PADS format.

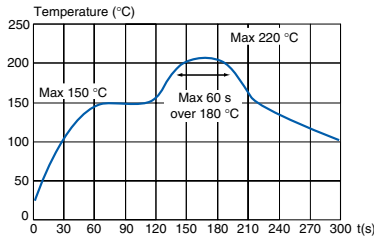
SOLDERING OF WOUND SMD CAPACITORS

Reflow soldering temperature shall be measured on the top body surface of the component.

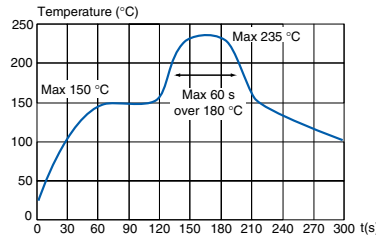
The profiles below are recommended soldering profiles for convection reflow ovens and IR reflow ovens. If vapour phase reflow oven is used, please consult Evox Rifa.

The recommended solder paste thickness for the **naked SMD** (SMW, GMW) parts is at least 0.25 mm (10 mils), for thicknesses below 0.25 mm (10 mils) please consult Evox Rifa.

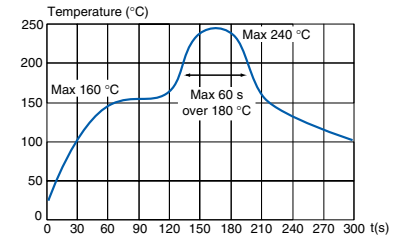
Soldering curves for Lead containing solder



Recommended reflow soldering profile for MMC

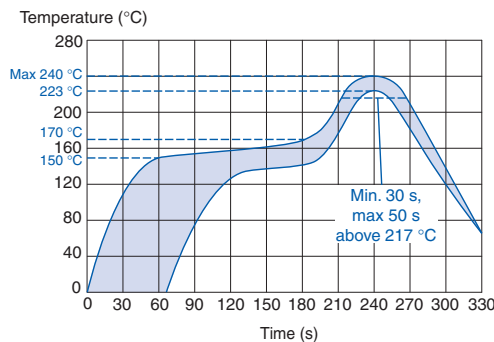


Recommended reflow soldering profile for GMC, GMW, GPC and SMW.
For GMW, max T = 230 °C.

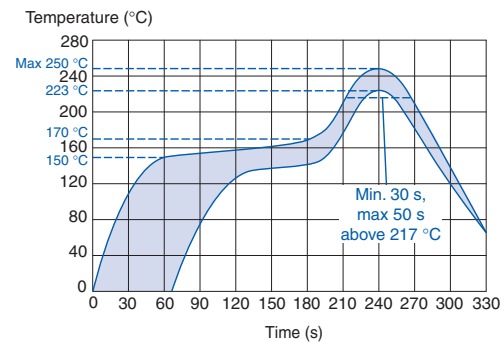


Recommended reflow soldering profile for SMC and SPC

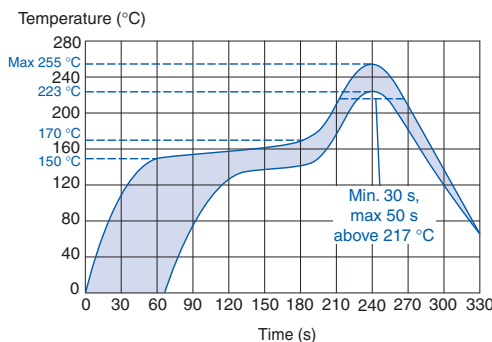
Soldering curves for Lead free solder



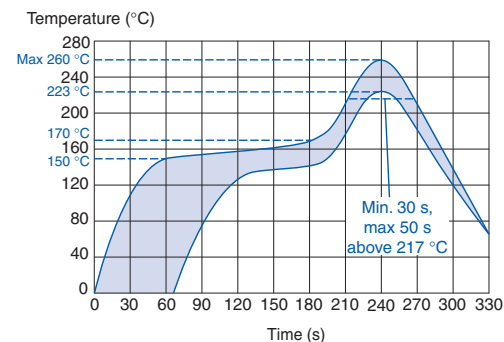
Recommended reflow soldering profile for GMW, MMC, MDC, MDS and SMW



Recommended reflow soldering profile for GMC, GPC, and SMP253



Recommended reflow soldering profile for SPC

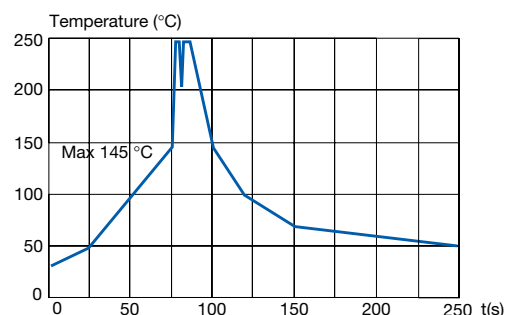


Recommended reflow soldering profile for SMC

These profiles are valid for products in this catalogue. Reflow recommendations for customised Evox Rifa products may deviate from the above profiles. 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.

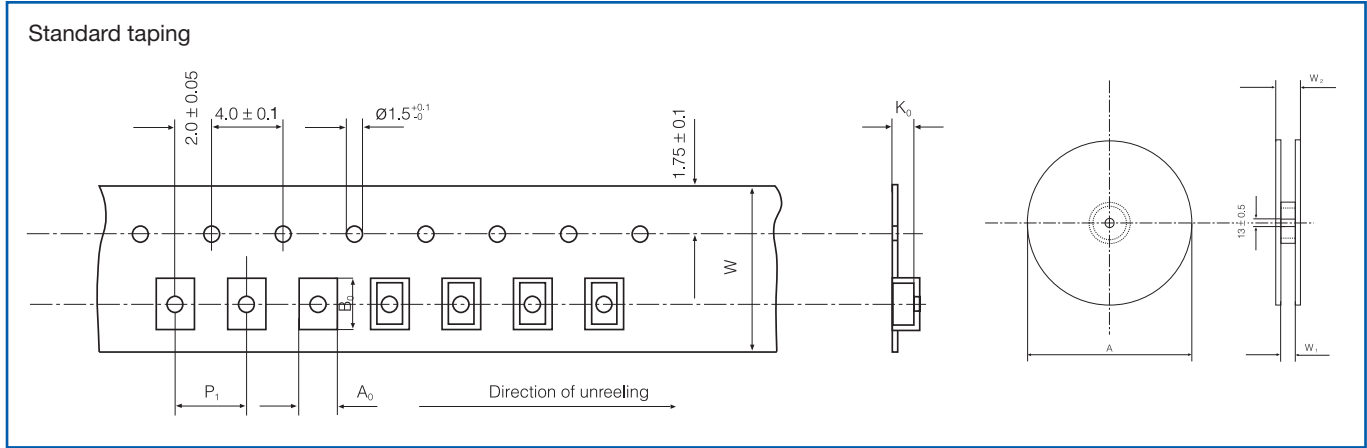
Soldering curves for Wave solder



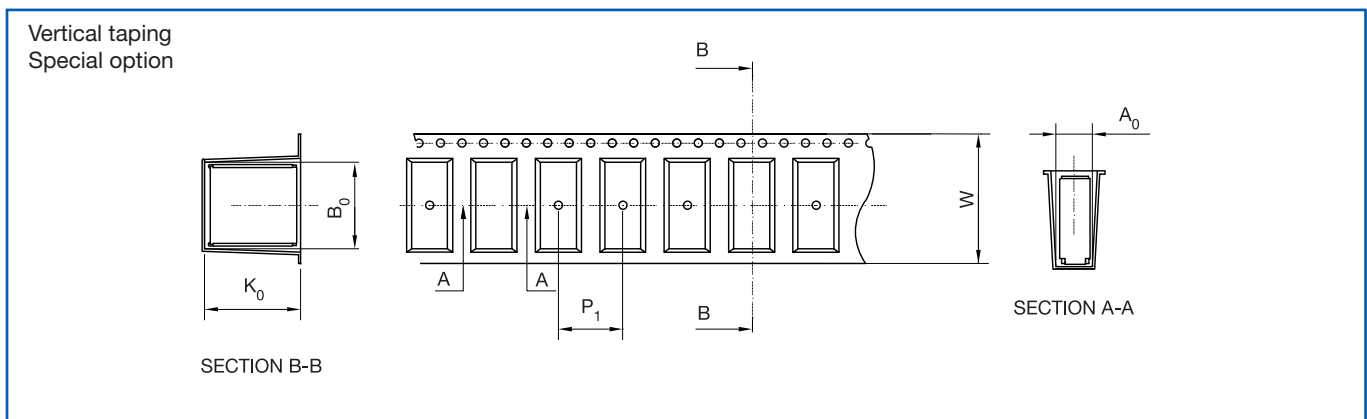
Recommended wave soldering profile for all Evox Rifa SMD capacitors suitable for wave soldering, total time in solder wave <5s.

TAPE PACKAGING OF WOUND SMD CAPACITORS

According to IEC 60286-3
Carrier Tape



EIA size code, horizontal mounting	Size of capacitor, mm				$P_1 \pm 0.1$	A_0	B_0	K_0	$A \pm 2.0$	$W_1 \begin{smallmatrix} +2 \\ -0 \end{smallmatrix}$	$W_2 \text{ max}$	Qty/pcs
	L	B	H	$W \begin{smallmatrix} +0.3 \\ -0.0 \end{smallmatrix}$								
2220	5.7	5.0	2.5	12.0	8.0	5.5	6.0	2.8	330	12.4	22.0	3100
2220	5.7	5.0	3.0	12.0	8.0	5.5	6.0	3.3	330	12.4	22.0	2400
2220	5.7	5.0	4.0	12.0	8.0	5.5	6.0	4.3	330	12.4	22.0	2100
2824	7.3	6.0	2.5	12.0	8.0	6.5	7.5	2.8	330	12.4	22.0	3100
2824	7.3	6.0	3.0	12.0	8.0	6.5	7.5	3.3	330	12.4	22.0	2500
2824	7.3	6.0	3.5	12.0	8.0	6.5	7.5	3.8	330	12.4	22.0	2300
2824	7.3	6.0	4.5	12.0	8.0	6.5	7.5	4.8	330	12.4	22.0	1700
4036	10.2	9.1	5.5	16.0	16.0	9.5	10.5	5.8	330	16.4	22.0	800
5045	12.7	11.5	6.5	24.0	16.0	11.9	13.1	6.8	330	24.4	30.0	600
6560	16.5	15.0	7.0	24.0	20.0	15.4	16.8	7.3	330	24.4	30.0	500



EIA size code, vertical mounting	Size of capacitor, mm				$P_1 \pm 0.1$	A_0	B_0	K_0	$A \pm 2.0$	$W_1 \begin{smallmatrix} +2 \\ -0 \end{smallmatrix}$	$W_2 \text{ max}$	Qty/pcs
	L	B^*	H^*	$W \begin{smallmatrix} +0.3 \\ -0.0 \end{smallmatrix}$								
4022	10.2	5.5	9.1	24.0	16.0	6.0	10.5	9.3	330	24.4	30.0	500
5026	12.7	6.5	11.5	24.0	16.0	6.9	13.1	11.8	330	24.4	30.0	400
6528	16.5	7.0	15.0	44.0	20.0	7.5	17.0	15.3	330	44.5	49.5	200

* Dimensions B and H in vertical mounting correspond H and B in the standard mounting and in the article tables.