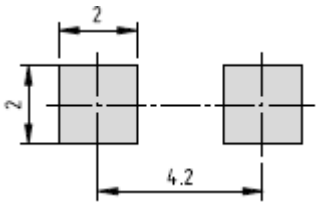
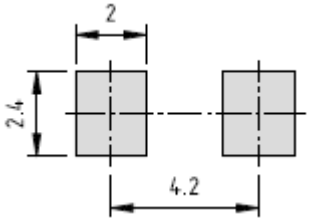
FAGOR ELECTRONICA SEMICONTUCTORS RECOMMENDED MINIMUM MOUNTING PAD LAYOUT SIZES FOR THE SURFACE MOUNT RECTIFIER

SMD - *DIODES*

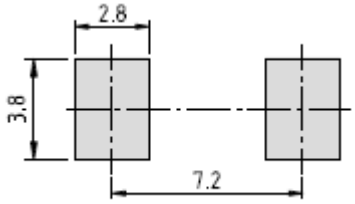
DO-214AC (SMA)



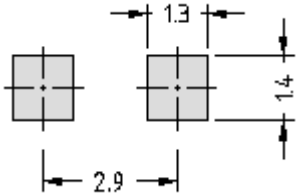
DO-214AA (SMB)



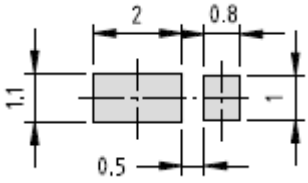
DO-214AB (SMC)



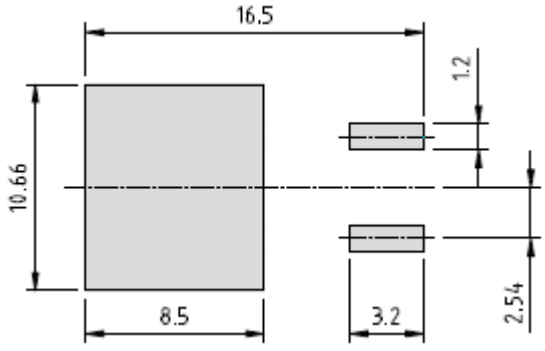
SOD-123W



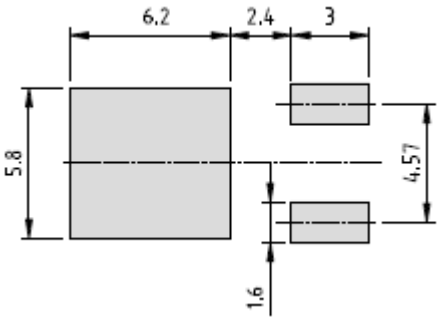
POWER SMD1



TO-263AB (D2PAK)

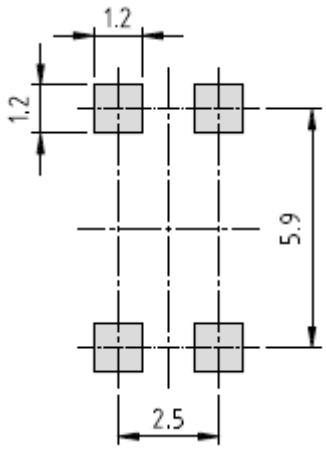


TO-252AA (DPAK)

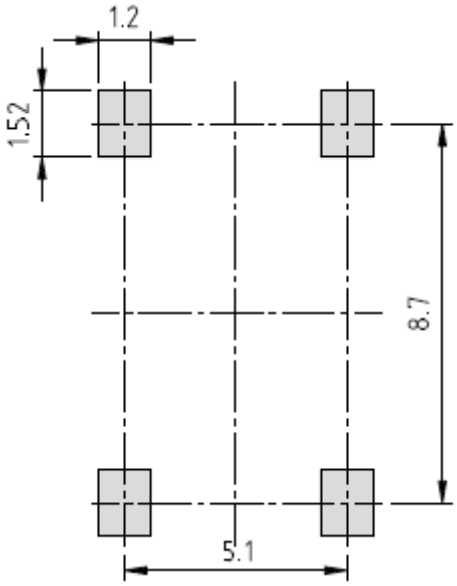


SMD - *BRIDGES*

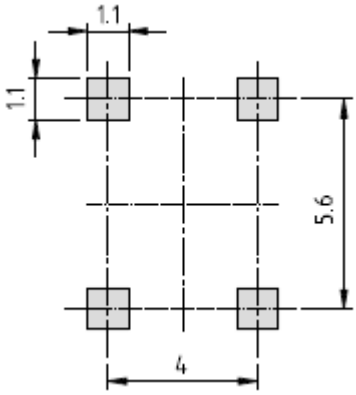
TO-269AA (MBS)



DFS / THIN DFS

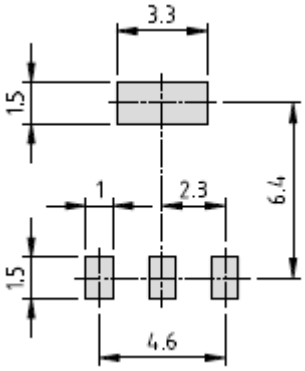


THIN MINI DIP

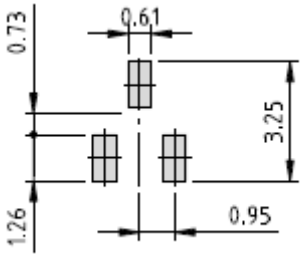


SMD - *THYRISTORS*

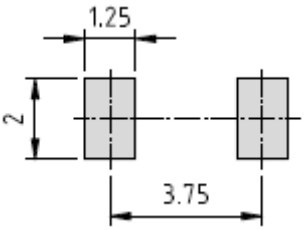
SOT-223



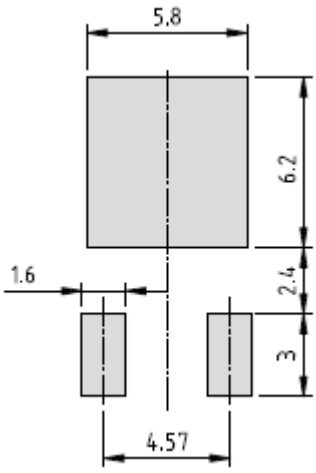
SOT-23-3L



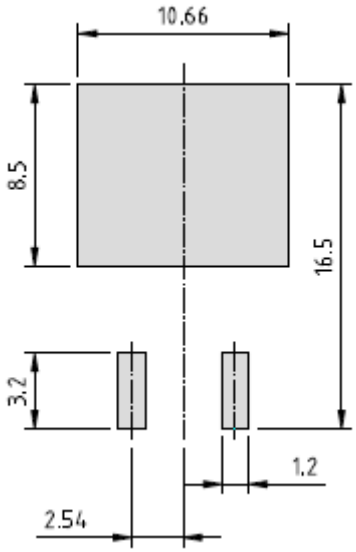
DO-213AA (MINIMELF)



TO-252AA (DPAK)



TO-263AB (D2PAK)



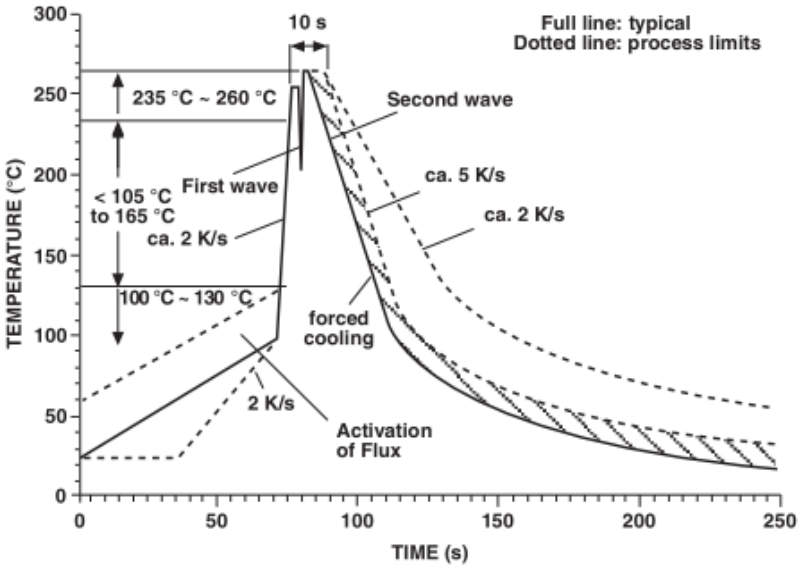
FAGOR ELECTRONICA SEMICONDUCTOR RECOMMENDED SOLDERING PROCESS FOR SURFACE MOUNTED AND AXIAL-LEADED COMPONENTS

Wave soldering has the highest solder temperature and heat transfer rates that are imposed by small resin molded parts like transistors, integrated circuits and surface mount components. The profile has a short dwell time in the solder pot and a preheat to minimize thermal shock for ceramic components and temperature problems with resin molded parts.

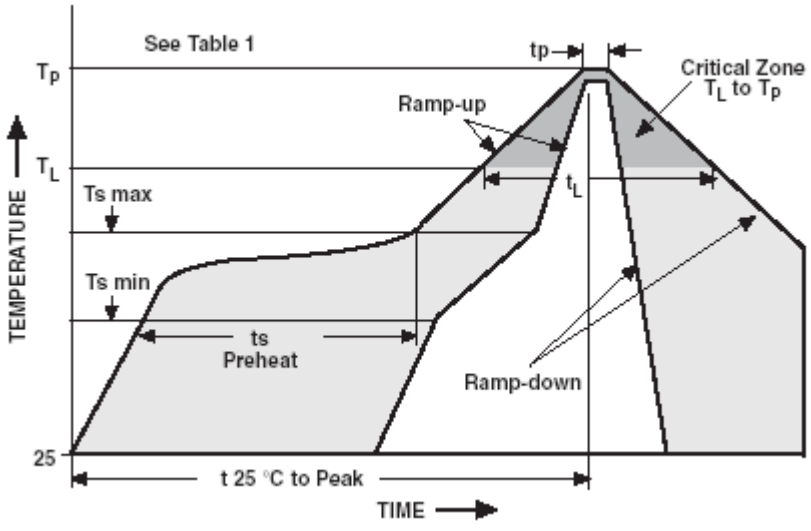
Wave Soldering Notes

The profile illustrated below depends ultimately on the type of flux used with the solder paste. The peak temperature for this process should not exceed 265 ºC for PC-board mounting.

FIG. 1 – Lead (Pb)-free Wave Soldering Profile



REFLOW PROFILE



CLASSIFICATION REFLOW PROFILE	
PROFILE FEATURE	**LEAD (Pb) – FREE ASSEMBLY**
Average ramp-up rate (Ts max to TP)	3 ºC/second maximum
Preheat - Temperature Minimum (Tsmin) - Temperature Maximum (Tsmax) - Time (min to max) (ts)	 150 ºC 200 ºC 60 – 180 seconds
Time maintained above: - Temperature (T_L) - Time (t_L)	 217 ºC 60 – 150 seconds
Peak Temperature	(Table 1)
Time within 5 ºC to actual peak temperature (tp)	20 – 40 seconds
Ramp-down rate	6 ºC/second maximum
Time 25 ºC to peak temperature	8 minutes maximum

Note:

All temperatures refer to topside of the package, measured on the package body surface

TABLE 1:

LEAD (Pb) – FREE PROCESS PACKAGE CLASSIFICATION REFLOW TEMPERATURE

PACKAGE THICKNESS	VOLUME mm^3 < 350	VOLUME mm^3 350 - 2000	VOLUME mm^3 > 2000
< 1.6 mm	260 + 0 ºC*	260 + 0 ºC*	260 + 0 ºC*
< 1.6 mm – 2.5 mm	260 + 0 ºC*	250 + 0 ºC*	245 + 0 ºC*
≥ 2.5 mm	250 + 0 ºC*	245 + 0 ºC*	245 + 0 ºC*

*** Tolerance:** The device manufacturer/supplier shall assure process compatibility up to and including the stated classification temperature at the rated MSL level.

Notes:

1. Package volume excludes external terminals (balls, bumps, lands, leads) and/or non- integral heat sinks.
2. The maximum component temperature reached during reflow depends on package thickness and volume. The use of convection reflow processes reduces the thermal gradients between packages. However, thermal gradients due to differences in thermal mass of SMD packages may still exist.