

XAN-4: Mounting Schemes for the Controller

Background

The 100/200 Series GaN Controller is a versatile device. Not only can it handle a multitude of system variants described in the spec sheets and app notes, but the in-line, castellated ports allow multidirectional mounting, narrow landing patterns, and adaptable height profiles. The positioning and soldering of these modules are done either manually, or with the aid of available erector kits for reflow. Note that the circuit board uses lead-free, high-temp solder. However, care should be taken when exposing them to similar temperatures during reflow and assembly.

Mounting Schemes

UPRIGHT

This is the standard method for installing the Controller module. All components from both sides of the board are visible for easy identification and troubleshooting. The maximum height is 0.24" [6.1mm] from the mounting pads. Erector sets (see next page) may be used to aid installation. They clamp on the module and their four legs are press-fit through a clearance hole on the receiving board, which locks the unit in place during solder reflow.

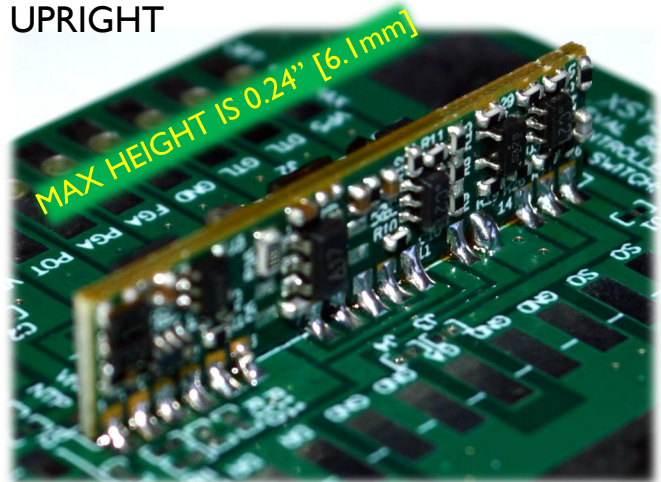
SLANTED

To lower the height profile in a simple step, this is a preferred method. The maximum height is 0.16" [4.1mm] from the mounting pads. Erector sets (see next page) may also be used to aid installation. They clamp on the module and maintain a stable angle during solder reflow. The components on the other side of the board will no longer be visible. With the increased footprint, care should be taken when running active lines underneath the module.

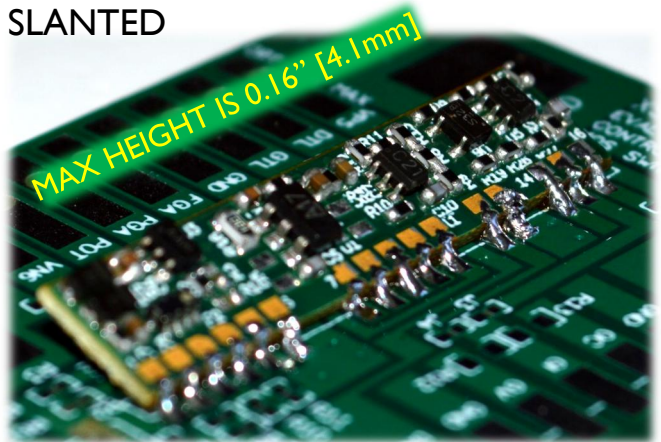
FLAT & BURIED

This method is more involved but a maximum height of 0.10" [2.5mm] from the mounting pads can be realized. The receiving board will have to be routed out to give the buried components a clearance of 0.05" [1.3mm] approximately. This may extend into the heatsink if applicable. An alternate solution is to install the module at the edge of the receiving board. The sixteen (16) solder points are very strong and will be more than enough to suspend the module horizontally. Further, the use of potting epoxy for support and heat dissipation may be supplemental.

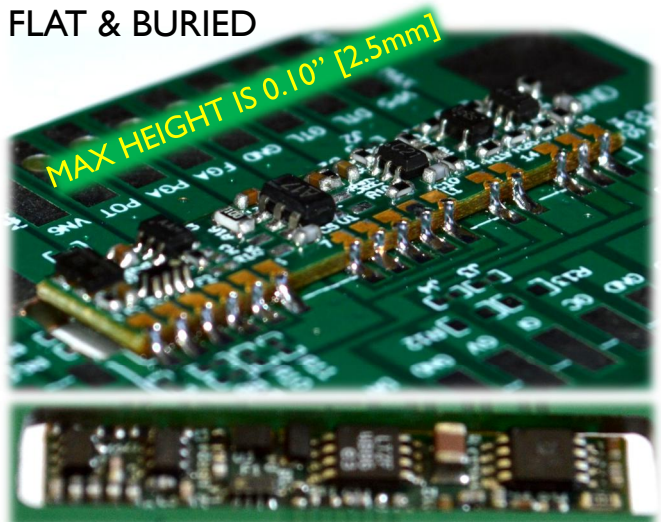
UPRIGHT



SLANTED

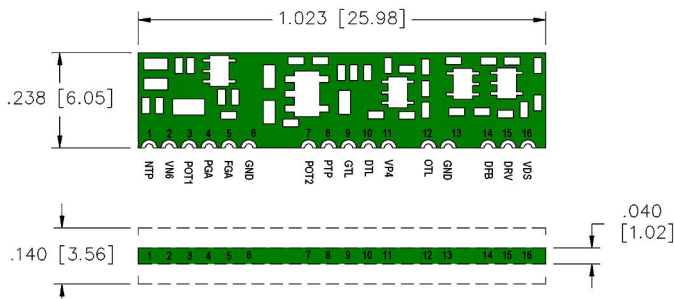


FLAT & BURIED



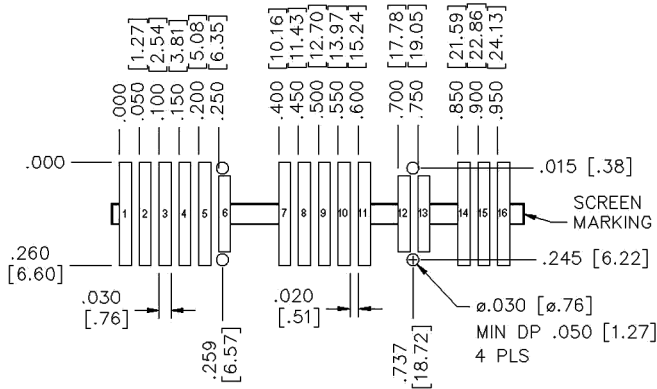
Land Patterns

100X, 200X

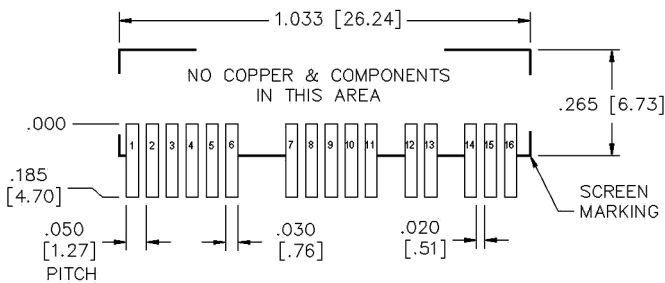


TOLERANCE IS +/- .005" [0.13mm]
UNLESS OTHERWISE SPECIFIED

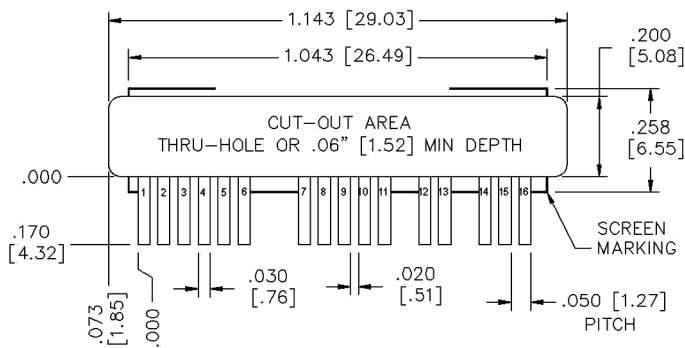
UPRIGHT



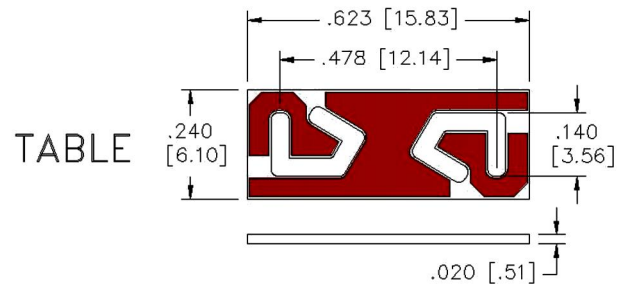
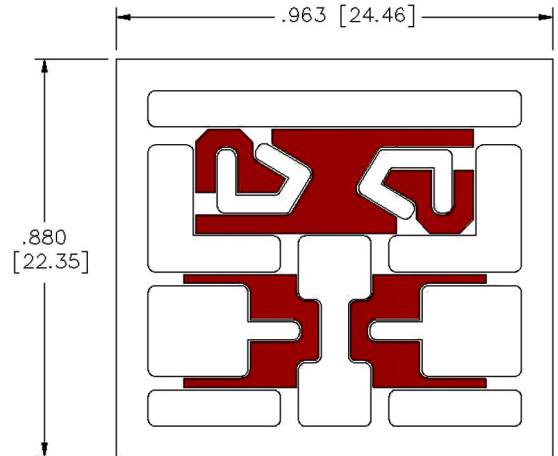
SLANTED



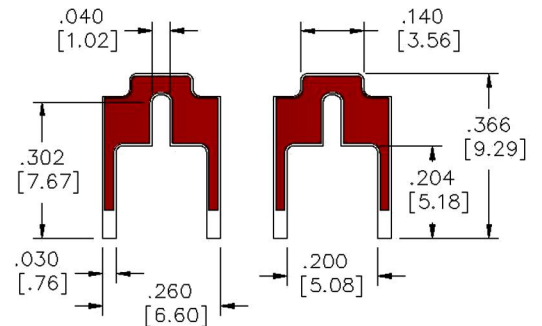
FLAT & BURIED



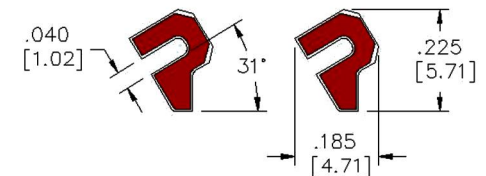
Module Erector Kit



LEGS



TILTS



The Erector cutouts shown above are used to facilitate the solder-reflow process for module installation. Use sharp wire cutters to separate and shape the pieces. They may be discarded after use. For UPRIGHT assembly, the TABLE and LEGS are snapped together and clamped onto the empty grooves of the module. The LEGS are either cut to size or press-fit through holes on the receiving board. For SLANTED assembly, TILTS are clamped onto the module instead. Either LEGS or TILTS may be used as spacers for the FLAT & BURIED assembly.