

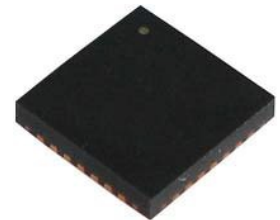
Introduction

PenMount, the premier touch controller, is designed, developed and manufactured to simplify your touch integration and bring you optimized touch solution. PenMount continuously designs and develops innovative technology to meet the newest and most advanced touch technology requisites and provide you with efficient simple IC chips and control boards as well as its professionally developed touch drivers.

To fulfill market requirements, PenMount has made available a selection of all-in-one controllers for both its IC chips and control boards. Merging the functions and features of USB and Serial interfaces with touchscreens, it brings a ready-to-use touch controller to your advanced system.

PenMount brings you the new “PenMount 6010” series of models with auto-detect hardware functions and auto install drivers, starting with:

PenMount 6010, an all-in-one IC chip controller, combining both USB and RS232 serial interfaces for flexibility to your system designs.



PenMount 6010 controller has been designed for those who may like an all-in-one solution with A/D converter built-in to make the total printed circuit board denser.

(PenMount 6010 controller is designed with Silicon Lab. EFM8UB10F16G-C)

PenMount 6010 Specifications

RoHS Compliance

| | |
|---|--|
| Touch Screen: | 4, 5 , 8-wire |
| Package: | 28-pin QFN |
| Communications: | RS-232 19200 / 9600 baud rate USB Full-speed, 12Mbps |
| Feature: | <input type="checkbox"/> Pipelined 8-bit C8051 core with 50 MHz maximum operating frequency <input type="checkbox"/> 10-bit /12bit Analog-to-Digital Converter with integrated multiplexer, voltage reference, and temperature sensor <input type="checkbox"/> Power-on reset circuit and brownout detectors <input type="checkbox"/> On-chip FLASH memory <input checked="" type="checkbox"/> Internal 48 MHz oscillator with accuracy of $\pm 1.5\%$ standalone and $\pm 0.25\%$ using USB clock recovery <input type="checkbox"/> Implement USB, UART interfaces in hardware |
| Sample Rate | 160 points per second (minimal) |
| Resolution | 2048 x 2048 4096 x 4096 |
| Resistance Range : | 50~1.3K ohm |
| Operating Voltage: | +3.3V ~ +5V DC $\pm 5\%$ |
| Operating Temperature: | -40° C to +85° C (-104 ° F to +185 ° F) |
| Storage Temperature: | -65° C to +150° C (-149 ° F to +302 ° F) |
| Power Consumption (Base on PM6300 board) | Standby Mode : 13.4 mA ; Active Mode : 21.5 mA (VCC=+5V, Top sheet Panel Resistance: 365 ohm ; Bottom sheet Panel Resistance: 660 ohm) Note. Actual current will be different by touch panel's resistance. |

Driver Software

RS232 interface : DOS, Windows XP/ XPE/ 2003/ 2008/Vista/ 7 /8 /10 /11, WinCE 4.2/

5.0/ 6.0/7.0, Linux (Kernel 2.6 and X-Window mode), QNX 6.2/ 6.3/ 6.4/ 6.5

USB interface : Windows XP/ XPE/ 2003/ 2008/ Vista/ 7 /8 /10 /11, WinCE 4.2/ 5.0/ 6.0/7.0, Linux

OS (Kernel 2.6 and X-Window mode), QNX 6.4.1/ 6.5 (Inbox support)

QNX6.2/ 6.3/ 6.4/ 6.5

Packaging Information

The following diagram depicts the pinout of chip:

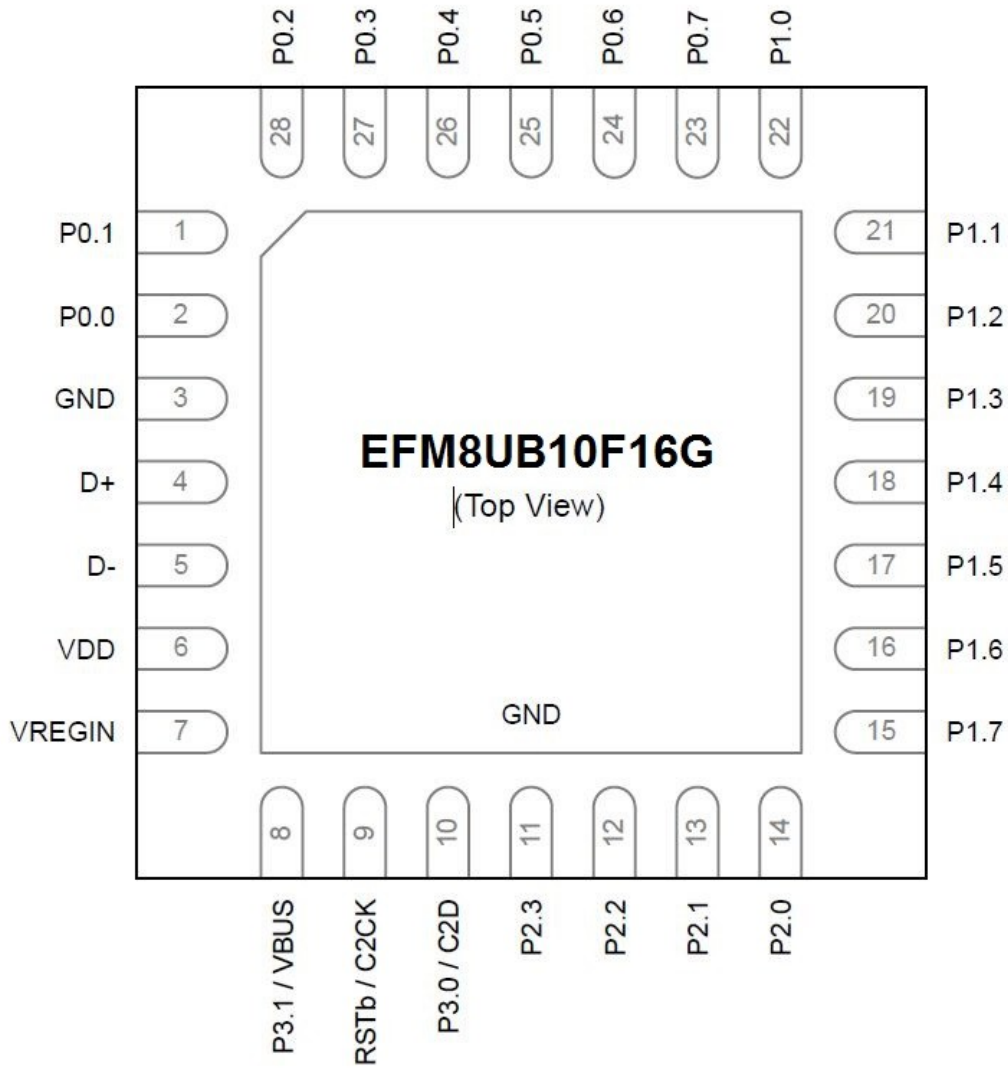
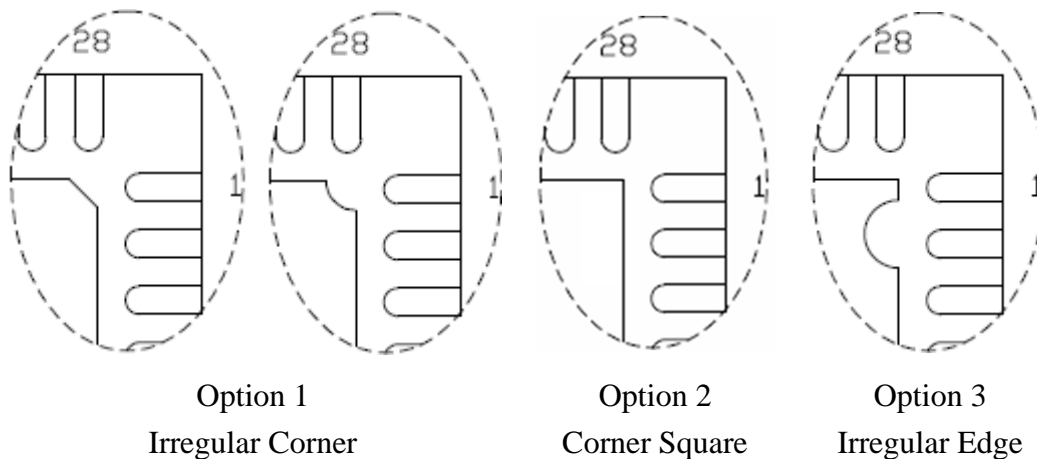


Fig. 1: QFN-28 Pinout Diagram (Top View)

Detail 1

Pin – 1 Identifier



Detail 2

Perimeter Lead Form

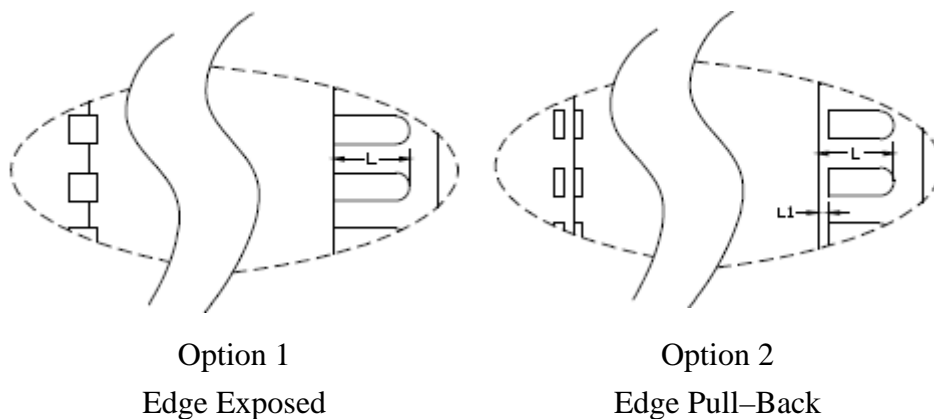


Fig. 5: QFN-28 Package Drawing

PenMount 6010 Controller IC Data Sheet

| Dimension | Min | Typ | Max | Dimension | Min | Typ | Max |
|-----------|------|----------|------|-----------|------|------|------|
| A | 0.70 | 0.75 | 0.80 | L | 0.45 | 0.55 | 0.65 |
| A1 | 0.00 | | 0.05 | aaa | 0.15 | | |
| A3 | | 0.25 REF | | bbb | 0.10 | | |
| b | 0.20 | 0.25 | 0.30 | ddd | 0.05 | | |
| D | | 5.00 BSC | | eee | 0.08 | | |
| D2 | 3.15 | 3.25 | 3.35 | | | | |
| e | | 0.50 BSC | | | | | |
| E | | 5.00 BSC | | | | | |
| E2 | 3.15 | 3.25 | 3.35 | | | | |

Notes:

1. All dimensions shown are in millimeters (mm) unless otherwise noted.
2. Dimensioning and Tolerancing per ANSI Y14.5M-1994.
3. This drawing conforms to JEDEC Solid State Outline MO-220.
4. Recommended card reflow profile is per the JEDEC/IPC J-STD-020 specification for Small Body Components.

Table 1: QFN-28 Package Dimensions

PenMount 6010 Controller IC Data Sheet

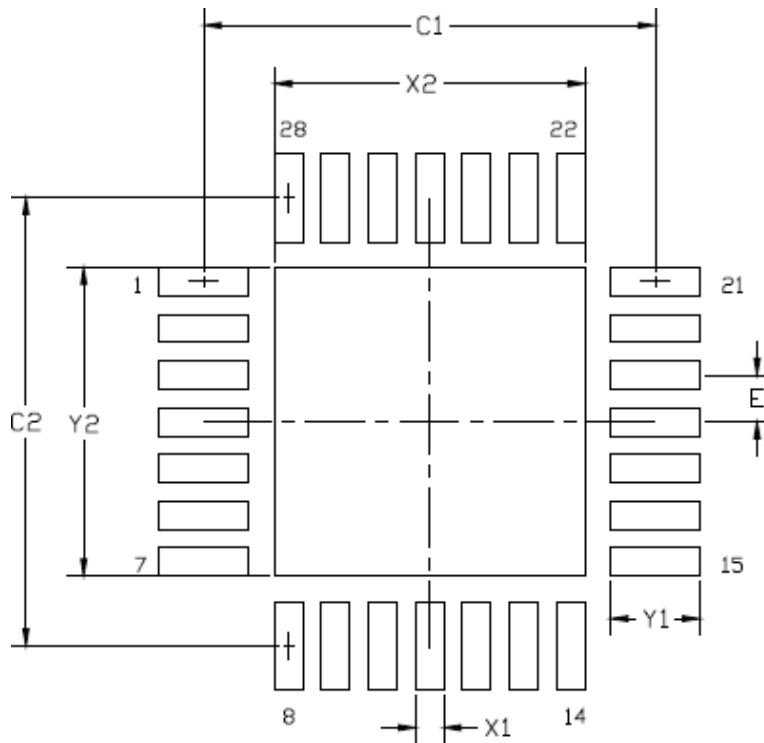


Fig. 6 QFN-28 Recommended PCB Land Pattern

| Dimension | Min | Max | Dimension | Min | Max |
|-----------|-----|------|-----------|-----|------|
| C1 | | 4.80 | X2 | | 3.35 |
| C2 | | 4.80 | Y1 | | 0.95 |
| E | | 0.50 | Y2 | | 3.35 |
| X1 | | 0.30 | | | |

Notes:

1. All dimensions shown are in millimeters (mm) unless otherwise noted.
2. This Land Pattern Design is based on the IPC-7351 guidelines.
3. All metal pads are to be non-solder mask defined (NSMD). Clearance between the solder mask and the metal pad is to be 60 μ m minimum, all the way around the pad.
4. A stainless steel, laser-cut and electro-polished stencil with trapezoidal walls should be used to assure good solder paste release.
5. The stencil thickness should be 0.125 mm (5 mils).
6. The ratio of stencil aperture to land pad size should be 1:1 for all perimeter pads.
7. A 2 x 2 array of 1.2 mm square openings on a 1.5 mm pitch should be used for the center pad.
8. A No-Clean, Type-3 solder paste is recommended.
9. The recommended card reflow profile is per the JEDEC/IPC J-STD-020 specification for Small Body Components