

ECE1105

GPIO Expansion, PS/2, 23x8 Keyscan Matrix Interface via SMBus or BC-Link Bus

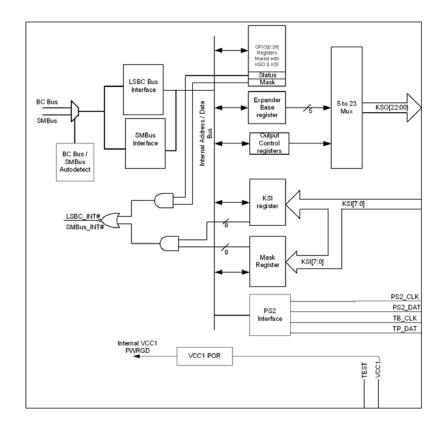
General Description

The ECE1105 is a 48-Pin 3.3V Keyboard Scan Expansion or GPIO Expansion device. The device supports a keyboard scan matrix of 23x8 and has two PS/2 ports for touchpad and/or pointer stick support. The device is connected to a Master via the BC-LinkTM interface or via the SMBus.

KSI and KSO signals are multiplexed with GPIOs.

Features

- Up to 23x8 Keyboard Scan Matrix
- Two PS/2 Ports
 - Touch Pad Support
 - Pointer Stick Support
- 40 Multiplexed General Purpose I/O pins
 - All are MCU addressable I/O Pins
- BC-Link Interconnect Bus
 - Link to embedded controller
- SMBus Interconnect
 - One of two address selection
- 3.3V Operation
- 48-Pin, QFN RoHS Compliant package
- 0.5mm Pitch
- 7x7m Body size



Block Diagram

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DS00001729A-page 2

PACKAGE OUTLINE

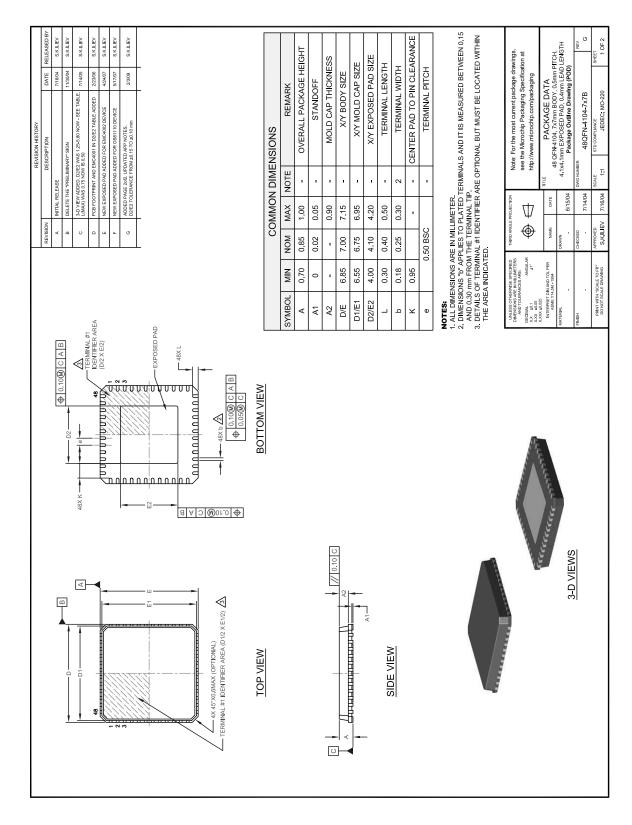


FIGURE 1: PACKAGE OUTLINE: 48-PIN QFN, 7X7 MM BODY (1 OF 2)

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RELEASED BY Ċ S.K.ILEV 2 OF 2 DEFINED BY THE SOLDER MASK (SMD), OR NON-SOLDER MASK DEFINED (NSMD) SHOULD BE AS SHOWN FOR THE BEST THERMAL & ELECTRICAL PERFORMANCE. MAXIMUM THERMAL AND ELECTRICAL PERFORMANCE IS ACHIEVED WHEN AN ARRAY OF SOLID VIAS IS INCORPORATED IN THE CENTER LAND PATTERN. PACKAGE DATA 48 OFN-4104, 7x7mm BODY, 0.5mm PITCH, 4.1x4.1mm EXPOSED PAD, 0.4mm LEAD LENGTH Application Notes Note: For the most current package drawings, see the Microchip Packaging Specification at SHEET (See Options 1 & 2) 4. THE VIAS SHOULD BE AT 0.8 to 1.2MM PITCH WITH 0.30 TO 0.40MM DIAMETER, AND 1 0Z COPPER VIA BARREL PLATING. 6. A LASER-CUT STAINLESS STEEL STENCIL IS RECOMMENDED WITH ELECTRO POLISHED TRAPEZOIDAL WALLS. THE RECOMMENDED STENCIL THICKNESS 8. RECOMMENDED STENCIL APLEKTURES AND AV COLOER PASTE. 9. IT IS RECOMMENDED TO USE "NO-CLEAN", TYPE 3 SOLDER PASTE. 10. THE REFLOW PROFILE DEPENDS ON THE EXACT SOLDER PASTE USED AND THE GIVEN BOARD DETAILS, SUCH AS GEOMETRY, COMPONENTS ETC. 2. THE LAND PATTERN CORRESPONDING TO THE PACKAGE EXPOSED PAD (IN THE CENTER) CORRESPONDING TO THE PACKAGE EXPOSED PAD EXPOSED PAD ON THE PACKAGE, HOWEVER, THE SOLDERABLE AREA, AS 5. NON SOLDER MASK DEFINED (NSMD) PAD DESIGN IS RECOMMENDED FOR PERIMETER LANDS. 1. THE USER MAY MODIFY THE PCB LAND PATTERN DIMENSIONS BASED ON http://www.microchip.com/packaging DATE 2/3/09 RECOMMENDED STENCIL AREA & ASPECT RATIOS ARE 0.66 & 1.5 (MIN) 48QFN-4104-7x7B REVISION HISTORY ADDED PAGE 2012. UPDATED APP NOTES AND D2/E2 TOLERANCE FROM ±0.15 TO ±0.10 mm LAND PATTERN DIMENSIONS STD COMPLIANC MAX MON SMT APPLICATION NOTES THEIR EXPERIENCE AND/OR PROCESS CAPABILITY 0.23 0.69 0.62 DESCRIPTION 0.28 50 MΝ 6.05 6.05 ÷ IS 0.125 mm FOR PITCHES 0.4 and 0.5 mm CALE 2/3/09 2/3/09 2/3/09 GD/GE GDs/GEs D2'/E2' Pad: X Stencil: X; Pad: Y Stencil: Y DATE SYMBOI \square S.K.ILEV REV Ċ HIRD ANGL \bigoplus NAME Ü AWN RESPECTIVELY ANGULAR ±1° VISE SPECIFIED IN MILLIMETERS 14 5M - 1994 PRINT WITH "SCALE TO FIT" DO NOT SCALE DRAWING UNLESS OTHERWISE S DIMENSIONS ARE IN MIL AND TOLERANCES / DECIMAL X.X ±0.1 X.XX ±0.05 X.XXX ±0.05 INTERPRET ASME Y ~ ė Ľ 00 0 0!0 0000 ΎΠ 0000000000 SEE DETAIL "A" FOR STENCIL RERI SEE DETAIL "B" FOR CENTER PAD STENCIL OPENINGS STENCIL GDs - 0.025 (MIN THERMAL VIAS and STENCIL OPENING - CENTER PAD ngs: 0.82x0.82mm (MAX) 4x4 Matrix rmal Vias: Ø0.30mm, Matrix @ 0.90mm Pitch STENCIL OPENING - PERIMETER LANDS **OPTION 3** ·SEE DETAIL "A" FOR PERIMETER PAD AND SOLDER MASK DETAIL "A" DETAIL "B" ()7 SEE DETAIL "B" FOR CENTER PAD DESIG¹ EXPOSED SOLDERABLE COPPER AREA) PCB LAND PATTERN acil Openings: Ø0.55-0.65m 4x4 Mat hermal Vias: Ø0.30mm, x5 Matrix @ 0.90mm Pitch OPTION 1 8 -D2' 1.00° FULL RADIUS IS OPTIONAL -0.075 (MIN) -050 1 1

FIGURE 2: PACKAGE OUTLINE: 48-PIN QFN, 7X7 MM BODY (2 OF 2)

ECE1105

DS00001729A-page 4

APPENDIX A: PRODUCT BRIEF REVISION HISTORY

TABLE A-1: REVISION HISTORY

Revision	Section/Figure/Entry	Correction
DS00001729A (04-29-14)	REV A replaces previous SMSC version Rev. 1.6 (02-21-11)	

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PART NO. ⁽¹⁾ Device	[X] - XXX (2) - [X] (3) Temperature Package Tape and Reel Range Option	Examples: a) ECE1105-HZH = 48-pin QFN, Commercial b) ECE1105I-HZH = 48-pin QFN, Industrial
Device:	ECE1105 ⁽¹⁾	Note 1: These products meet the halogen maximum concentration values per IEC61249-2-21.
Temperature Range: Package:	Blank = Commercial 0°C to 70°C I = Industrial -40°C to 85°C HZH = 48 pin QFN $^{(2)}$	Note 2: All package options are RoHS compliant. For RoHS compliance and environmental information, please visit <u>http://www.micro- chip.com/pagehandler/en-us/aboutus/</u> ehs.html
Tape and Reel Option:		Note 3: Tape and Reel identifier only appears in the catalog part number description. This identifier is used for ordering purposes and is not printed on the device package. Check with your Microchip Sales Office for package availability with the Tape and Reel option.

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DS00001729A-page 8



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