

A96T418GDN Shield Board

STKS-A96T418-GDN-TOUCH-A H/W Manual

Version 1.02

Contents

1	Introduction	5
2	Board Description.....	6
2.1	Board Exterior	6
2.1.1	Top view.....	6
2.1.2	Bottom view	6
2.1.3	View combined on top of the starter kit	7
2.2	Function Block.....	8
2.2.1	Touch PAD.....	8
2.2.2	M-Type LED Matrix.....	9
2.2.3	T-Type LED Matrix\.....	10
2.2.4	Buzzer	11
2.2.5	Design Guide.....	12
3	Schematic	14
	Revision history	15

List of figures

Figure 1. Top view	6
Figure 2. Bottom view	6
Figure 3. STKS on STK.....	7
Figure 4. Function Block	8
Figure 5. Touch only port.....	8
Figure 6. Touch & SEG port	9
Figure 7. M-Type LED Matrix	10
Figure 8. T-Type LED Segment.....	11
Figure 9. Buzzer	11
Figure 10. CAPN	12
Figure 11. Resistor for ESD protection	13
Figure 12. Schematic	14

List of tables

1 Introduction

This document introduces the hardware configuration of the A96T418 starter kit shield board (STKS-A96T418-GDN-TOUCH-A)

1. Touch PAD
2. M-Type LED Matrix
3. T-Type LED Segment
4. Buzzer
5. Design Guide

2 Board Description

2.1 Board Exterior

2.1.1 Top view

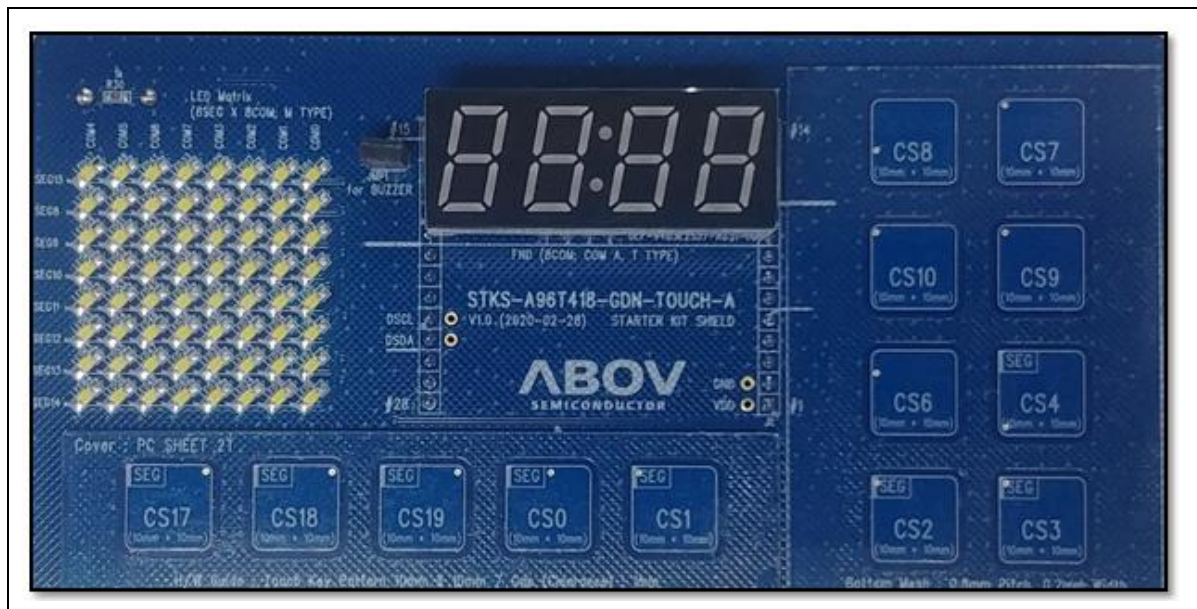


Figure 1. Top view

2.1.2 Bottom view

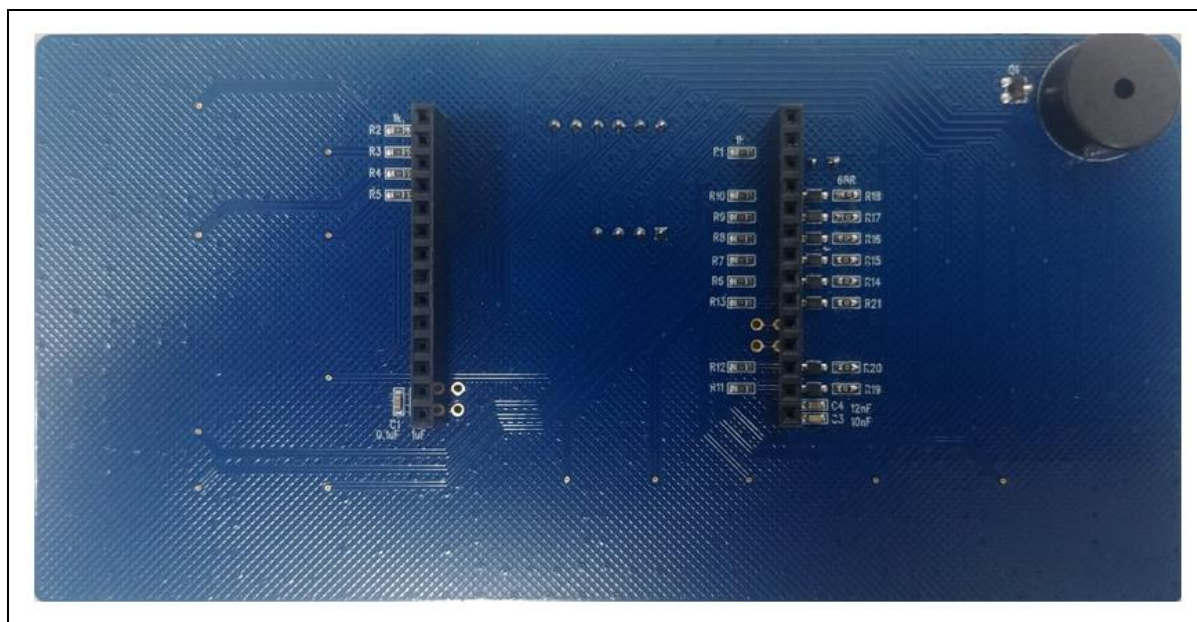


Figure 2. Bottom view

2.1.3 View combined on top of the starter kit

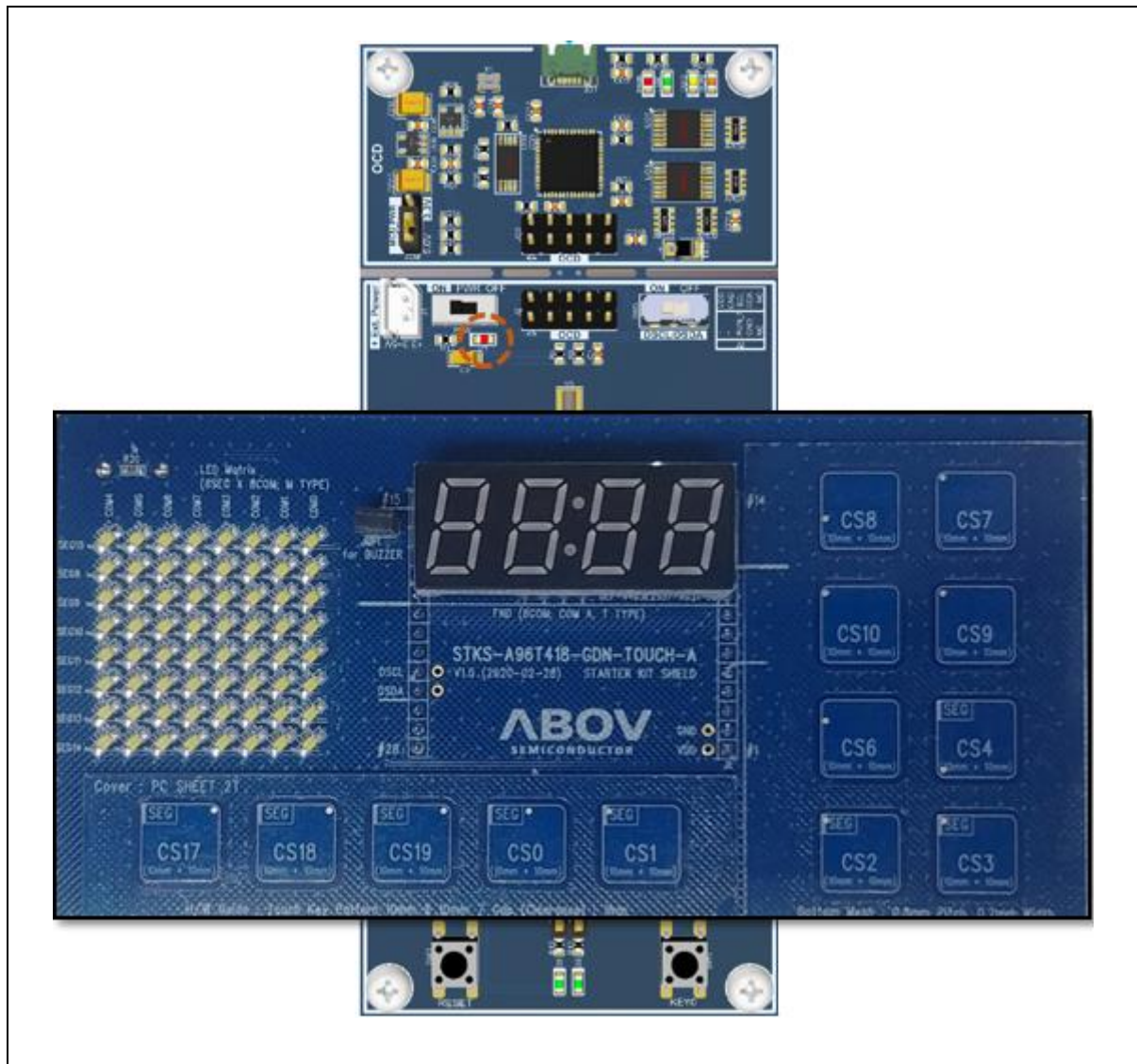


Figure 3. STKS on STK

2.2 Function Block

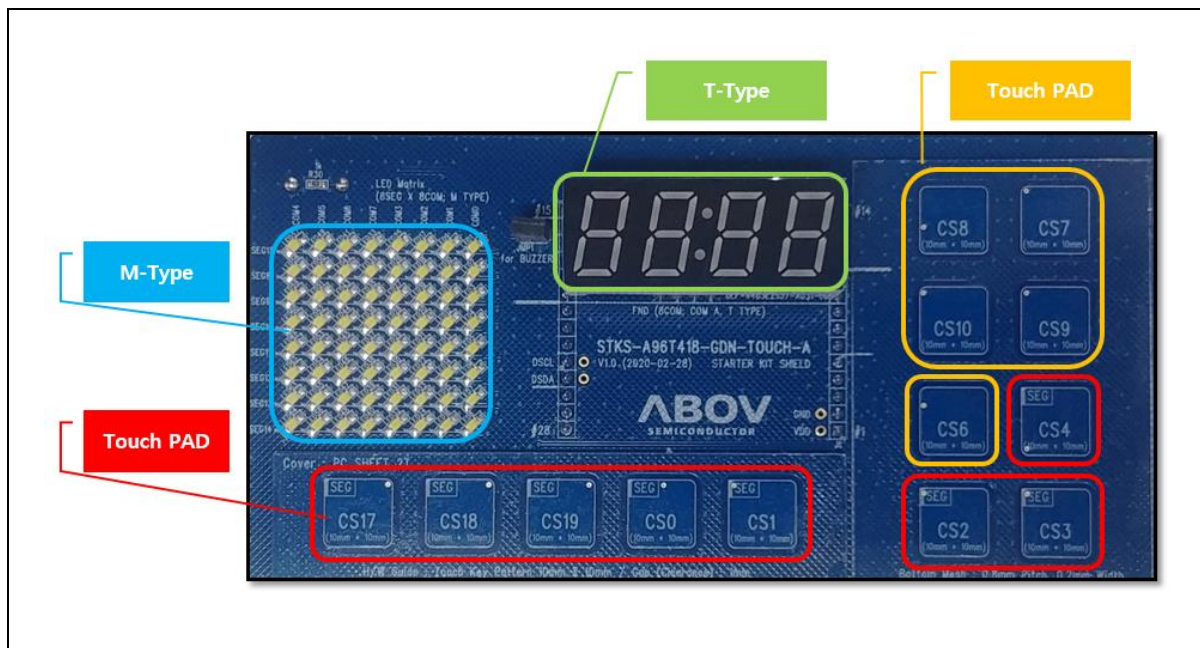


Figure 4. Function Block

2.2.1 Touch PAD

1. Touch only port

: For ESD protection, a series resistor is required for each channel. (1kΩ is recommended)

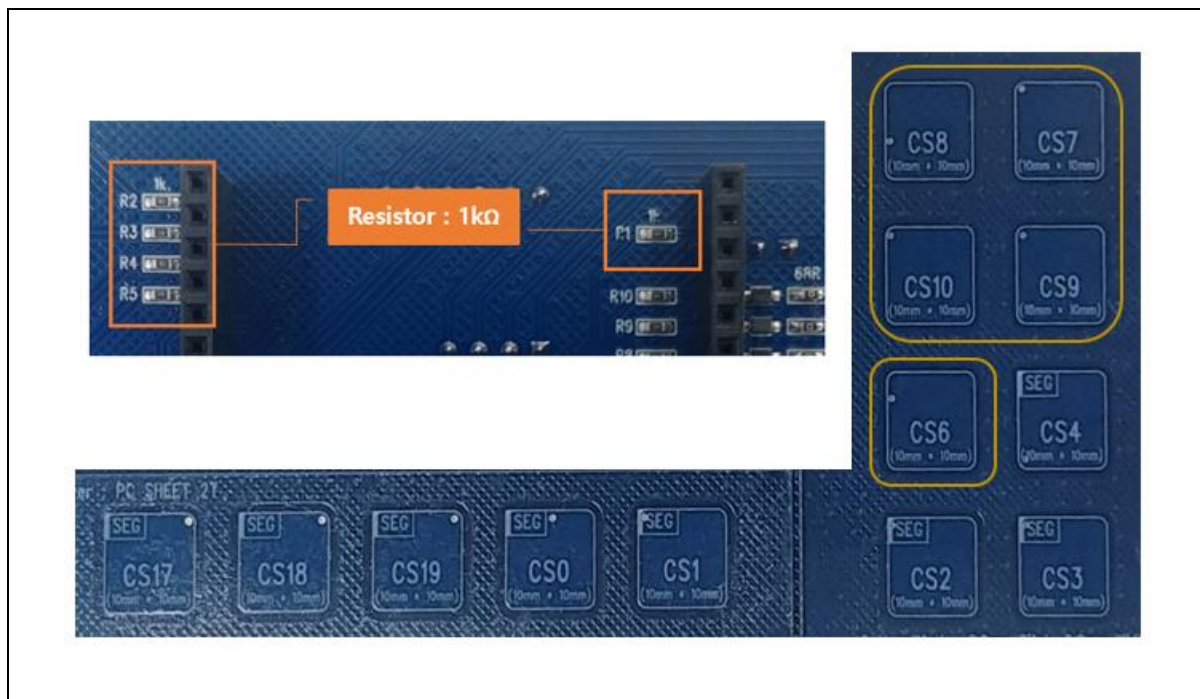


Figure 5. Touch only port

2. Touch & SEG port

: In addition to resistors for ESD protection, diode is required for each channel to remove parasitic capacitance resulting from the LED matrix structure. (The smaller diode capacitance, the better)

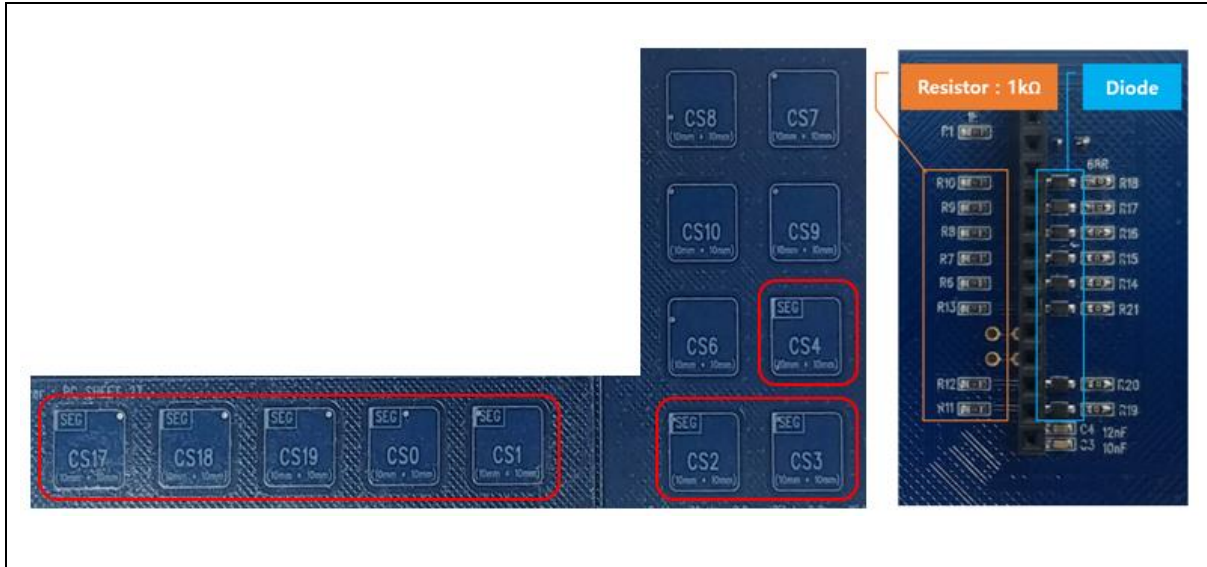
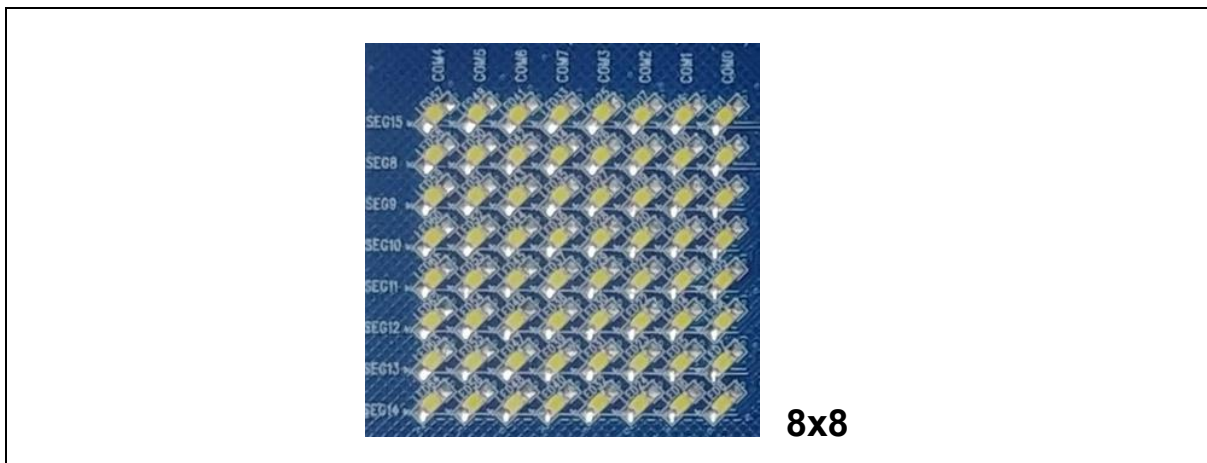


Figure 6. Touch & SEG port

2.2.2 M-Type LED Matrix

: 8COM x 8SEG structure. 64 LEDs can be controlled.



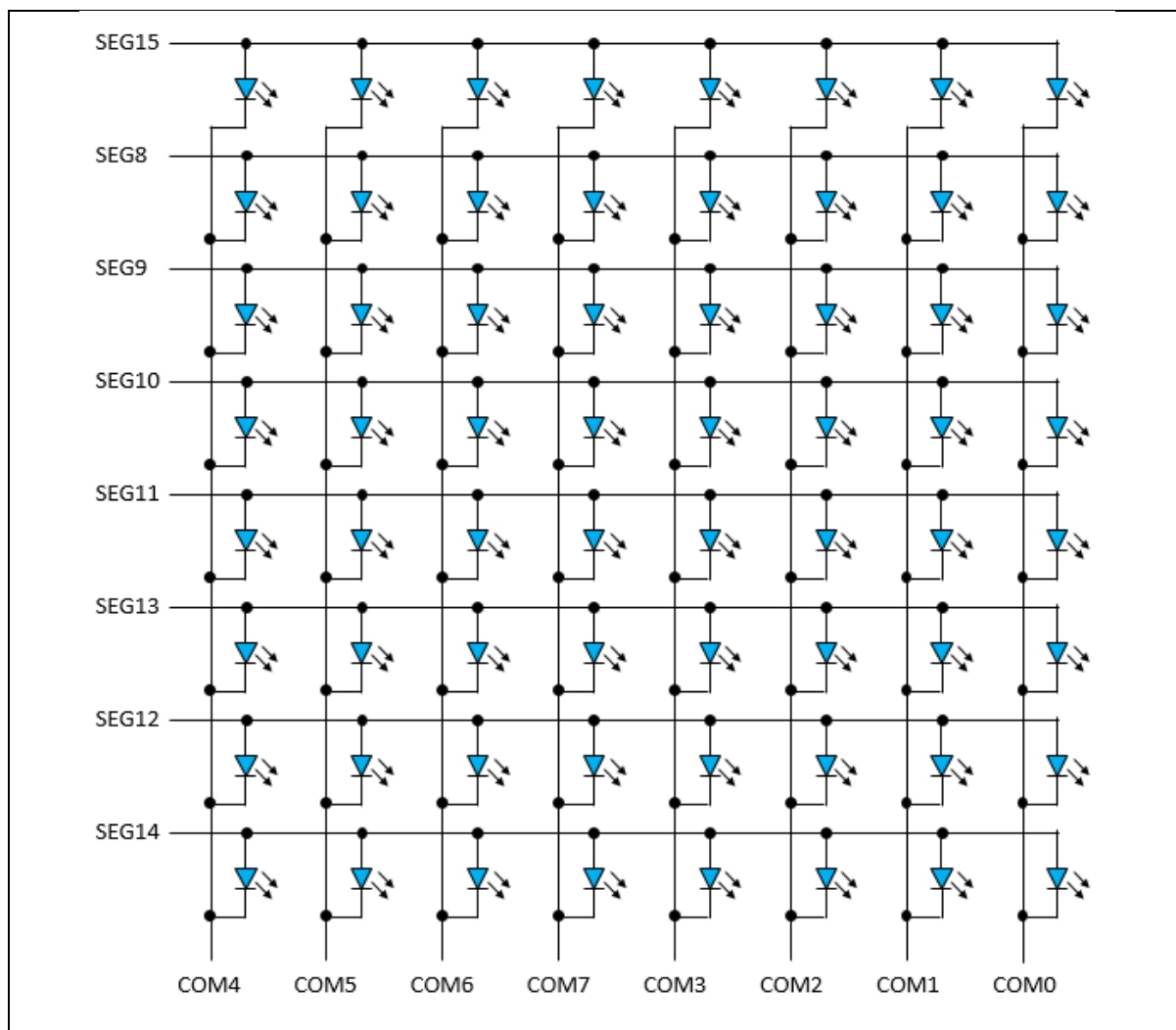
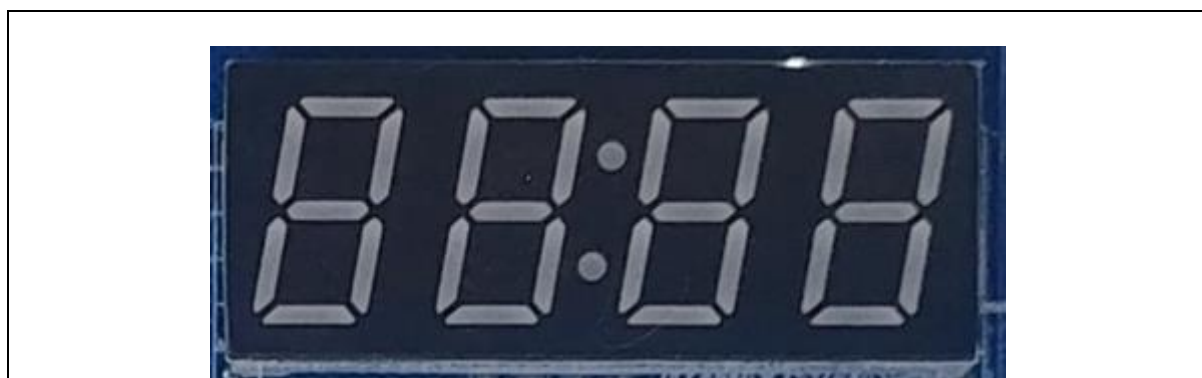


Figure 7. M-Type LED Matrix

2.2.3 T-Type LED Matrix\

1. For details on T-Type LED control, refer to the “T-Type LED Structure Control” document.
2. LED segment suitable for T-Type LED Structure is required.



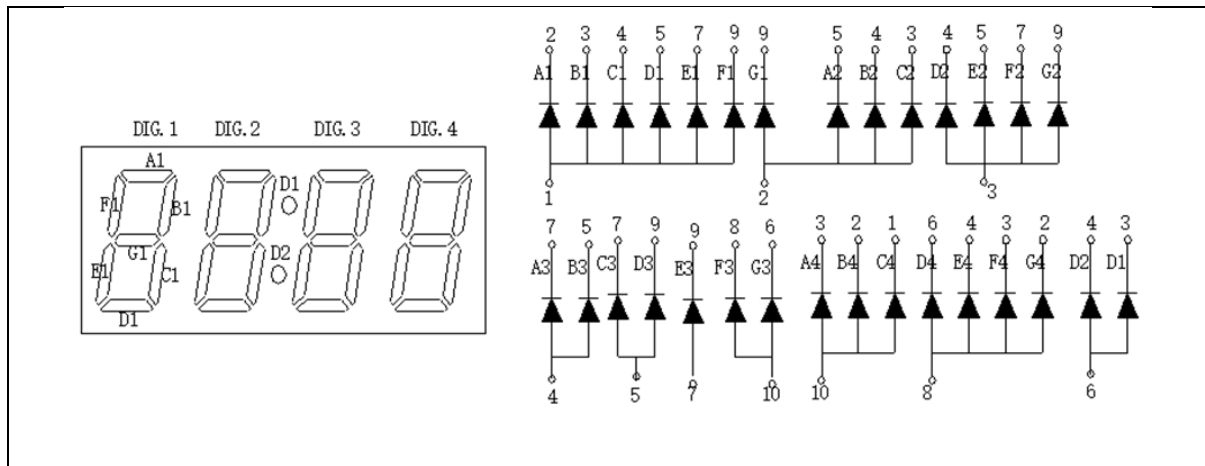


Figure 8. T-Type LED Segment

2.2.4 Buzzer

: It is connected to Timer1 PWM output (P11/PWM1O)



Figure 9. Buzzer

2.2.5 Design Guide

- CAPN

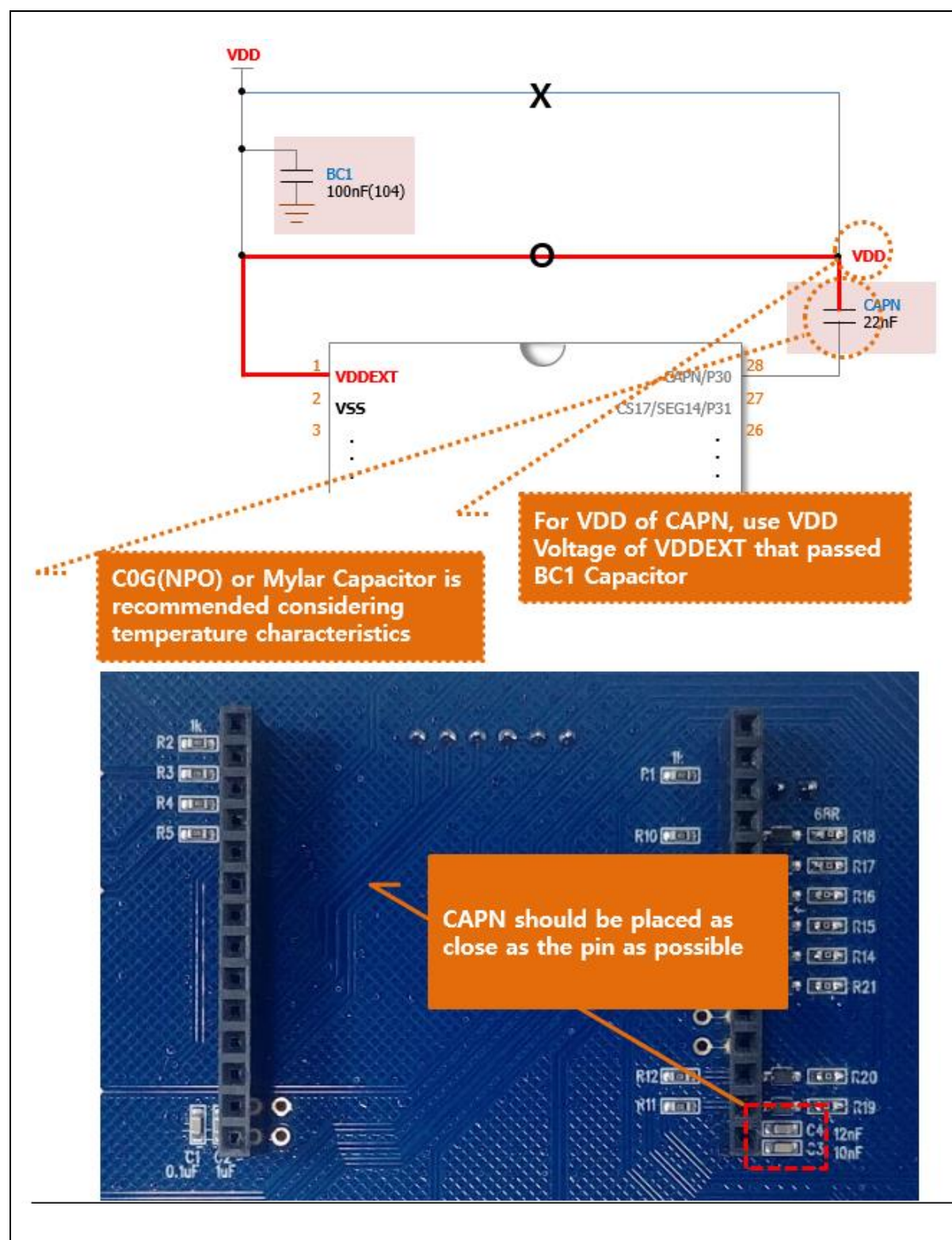


Figure 10. CAPN

- Resistor for ESD

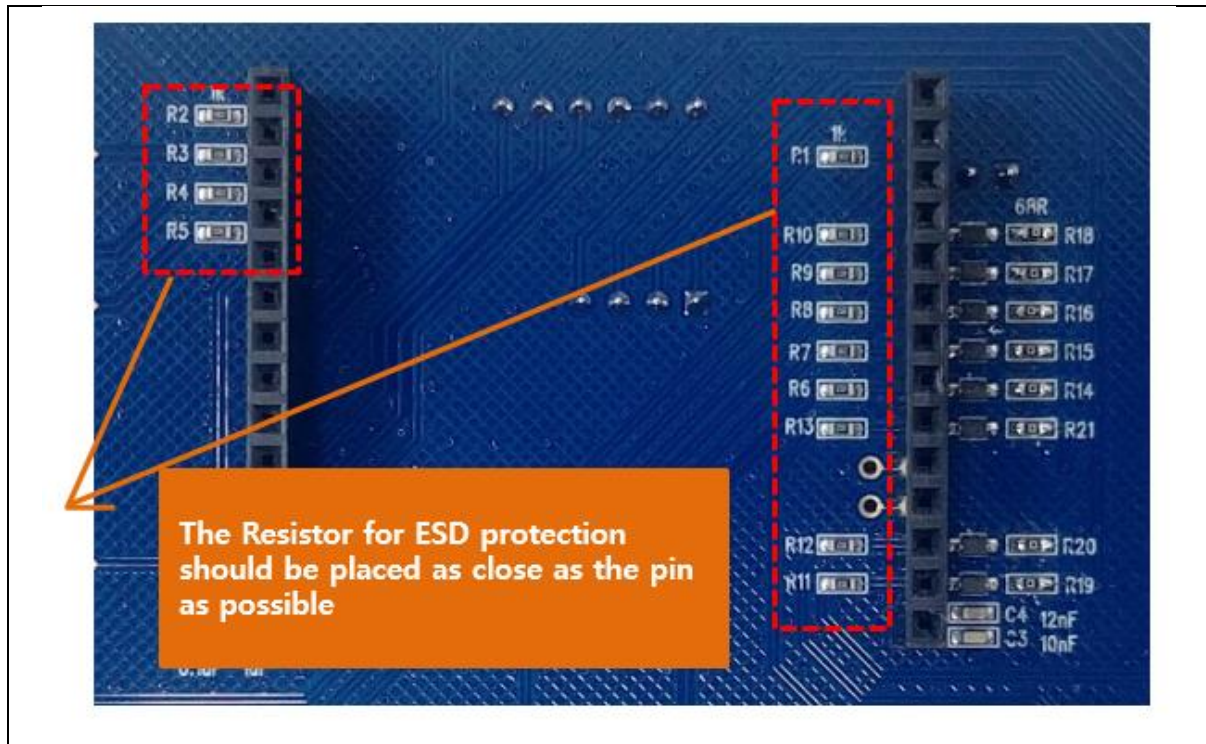


Figure 11. Resistor for ESD protection

3 Schematic

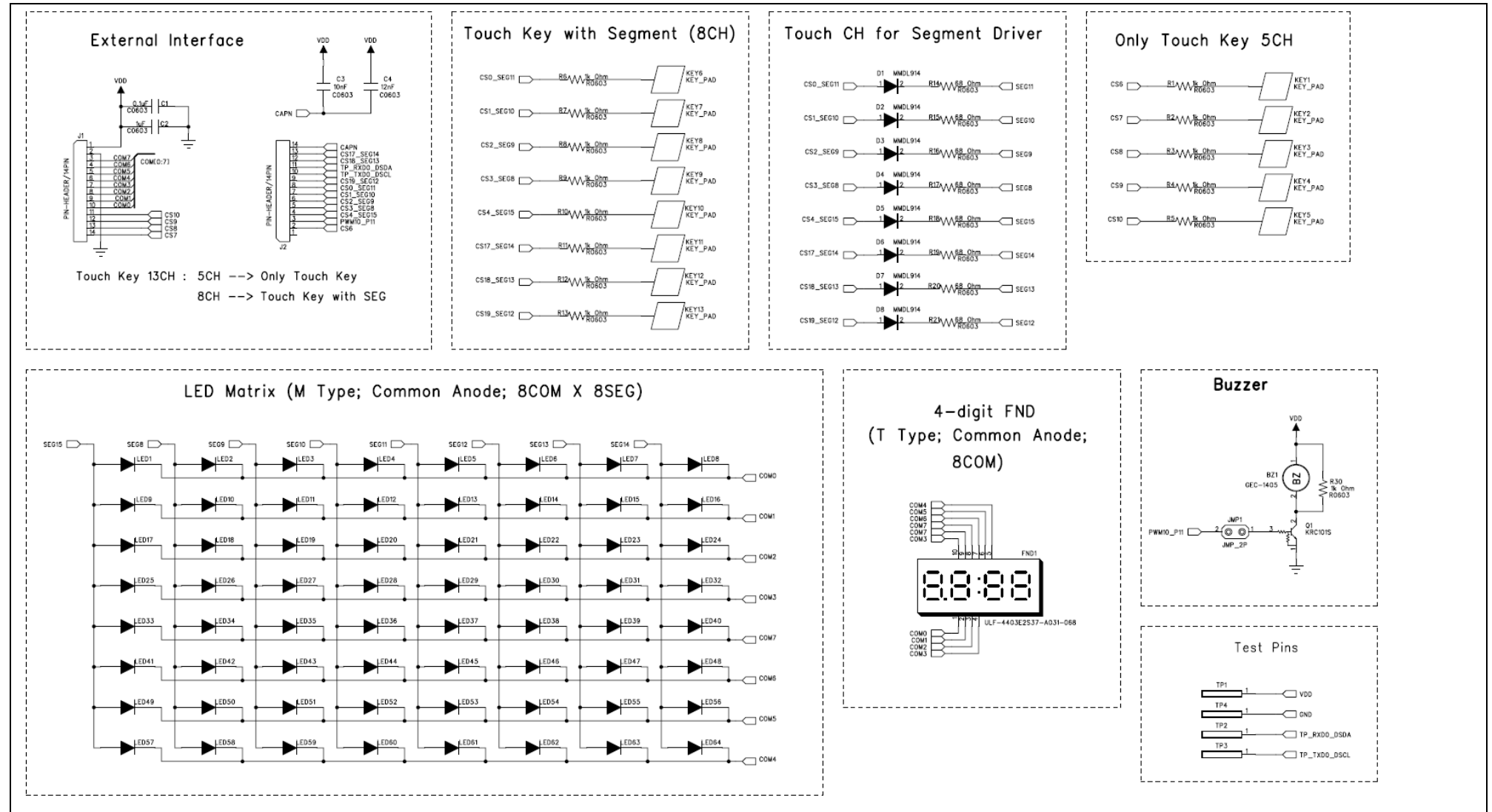


Figure 12. Schematic

Revision history

Date	Revision	Description
20.04.10	1.00	Document created
22.11.01	1.01	Revised the font of this document
24.12.02	1.02	Updated the disclaimer.

Korea

Regional Office, Seoul
R&D, Marketing & Sales
8th Fl., 330, Yeongdong-daero,
Gangnam-gu, Seoul,
06177, Korea

Tel: +82-2-2193-2200
Fax: +82-2-508-6903
www.abovsemi.com

HQ, Ochang
R&D, QA, and Test Center
93, Gangni 1-gil, Ochang-eup,
Cheongwon-gun,
Chungcheongbuk-do,
28126, Korea

Tel: +82-43-219-5200
Fax: +82-43-217-3534
www.abovsemi.com

Domestic Sales Manager

Tel: +82-2-2193-2206
Fax: +82-2-508-6903
Email: sales_kr@abov.co.kr

Global Sales Manager

Tel: +82-2-2193-2281
Fax: +82-2-508-6903
Email: sales_gl@abov.co.kr

China Sales Manager

Tel: +86-755-8287-2205
Fax: +86-755-8287-2204
Email: sales_cn@abov.co.kr

ABOV Disclaimer**IMPORTANT NOTICE – PLEASE READ CAREFULLY**

ABOV Semiconductor (“ABOV”) reserves the right to make changes, corrections, enhancements, modifications, and improvements to ABOV products and/or to this document at any time without notice. **ABOV DOES NOT GIVE WARRANTIES AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION INCLUDED HEREIN.** Purchasers should obtain the latest relevant information of ABOV products before placing orders. Purchasers are entirely responsible for the choice, selection, and use of ABOV products and ABOV assumes no liability for application assistance or the design of purchasers’ products. **NO LICENSE, EXPRESS OR IMPLIED, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY ABOV HEREIN. ABOV DISCLAIMS ALL EXPRESS AND IMPLIED WARRANTIES AND SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY INJURES OR DAMAGES RELATED TO USE OF ABOV PRODUCTS IN SUCH UNAUTHORIZED APPLICATIONS.** ABOV and the ABOV logo are trademarks of ABOV. For additional information about ABOV trademarks, please refer to https://www.abov.co.kr/en/about/corporate_identity.php. All other product or service names are the property of their respective owners. Information in this document supersedes and replaces the information previously supplied in any former versions of this document.

© 2020 ABOV Semiconductor – All rights reserved