

**x8**

|                              |                  |               |                   |                  |
|------------------------------|------------------|---------------|-------------------|------------------|
| <b>N32M417</b>               | <b>6N MOSFET</b> |               |                   | <b>250V</b>      |
| <b>32 bit ARM Cortex-M4F</b> |                  | <b>128MHz</b> | <b>64KB Flash</b> | <b>16KB SRAM</b> |
| <b>4.7MSPS ADC</b>           | <b>4xOPAMP</b>   |               |                   | <b>1x12bit</b>   |

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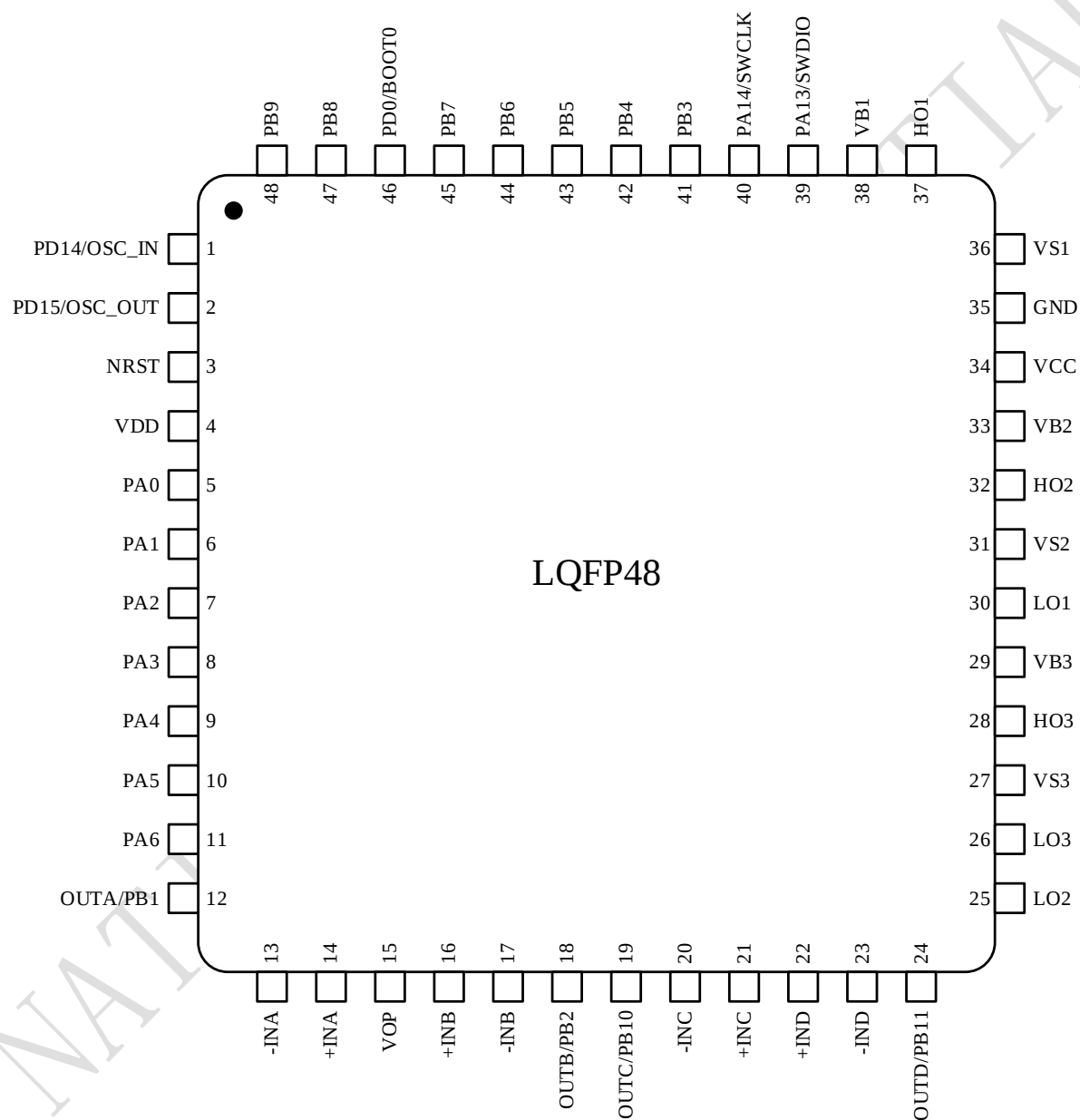
|                    |         |                               |
|--------------------|---------|-------------------------------|
|                    |         | N32M417C8L7                   |
| Flash              | KB      | 64                            |
| SRAM               | KB      | 16                            |
| CPU                |         | ARM Cortex-M4F @128MHz        |
|                    |         | MCU:2.4V~3.6V, :5V~20V/-40~10 |
|                    |         | 4                             |
|                    |         | 2                             |
|                    |         | 1                             |
|                    | LPTIM   | 1                             |
|                    | SPI     | 2                             |
|                    | I2S     | 2                             |
|                    | I2C     | 2                             |
|                    | U(S)ART | 3                             |
|                    | CAN     | 1                             |
| GPIO               |         | 19                            |
| DMA                |         | 8 Channels                    |
| 12bit ADC          |         | 1x12bit                       |
| Number of Channels |         | 11 Channel                    |
| OPAMP              |         | 4                             |
| COMP               |         | 3                             |
|                    |         | CRC16/32                      |
|                    |         | RDP/WRP                       |
|                    |         | 6N MOSFET                     |
|                    |         | 250V                          |
|                    |         | 5~20V                         |
|                    |         | 1.5A/-1.8A                    |
|                    |         | \                             |
|                    |         | LQFP48                        |

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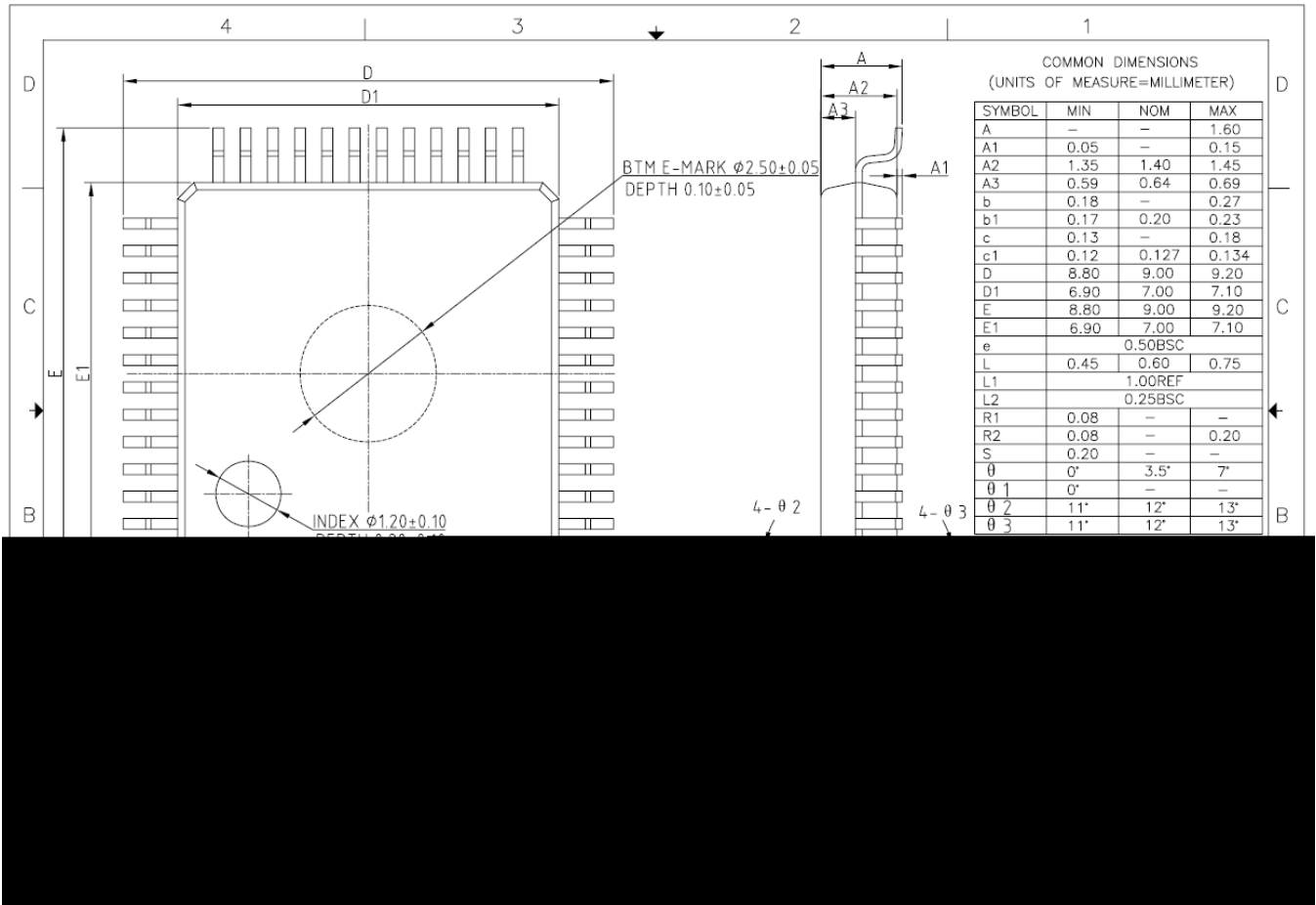
## 4

### 4.1 5

#### 4.1.1 5



4.1.2 5



4.2 5

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( ) (1) I/O<sup>(2)</sup> Fail-safe<sup>(3)</sup> (4)

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|    |     |     |     |   |                                                                                                                                                         |                                                  |  |
|----|-----|-----|-----|---|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--|
| 8  | PA3 | I/O | FTa | Y | USART2_RX<br>TIM5_CH4<br>I2C2_SCL<br>EVENTOUT<br>TIM8_CH2                                                                                               | ADC_IN4 <sup>(5)</sup><br>COMP2_INP<br>COMP3_INM |  |
| 9  | PA4 | I/O | FTa | Y | USART2_CK<br>I2C1_SCL<br>SPI1_NSS<br>I2S1_WS<br>USART1_TX<br>EVENTOUT<br>CAN_RX<br>LPTIM_OUT<br>SPI2_NSS<br>TIM8_CH3<br>I2S2_WS<br>TIM4_CH3             | ADC_IN5 <sup>(5)</sup><br>COMP1_INM<br>COMP2_INM |  |
| 10 | PA5 | I/O | FTa | Y | SPI1_SCK<br>I2C1_SDA<br>I2S1_CK<br>USART1_RX<br>EVENTOUT<br>CAN_TX<br>LPTIM_IN1<br>TIM8_CH4<br>TIM4_CH4                                                 | ADC_IN6 <sup>(6)</sup><br>COMP1_INM<br>COMP2_INM |  |
| 11 | PA6 | I/O | FTa | Y | SPI1_MISO<br>I2S1_MCK<br>TIM8_BKIN<br>TIM3_CH1<br>TIM1_BKIN<br>COMP2_OUT<br>EVENTOUT<br>BEEPER_OUT_P<br>TIM8_CH3<br>USART2_TX<br>COMP3_OUT<br>TIM1_CH2N | ADC_IN7 <sup>(6)</sup><br>COMP2_INM<br>COMP2_INP |  |

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|    |            |     |     |   |                                                                                      |                                     |               |
|----|------------|-----|-----|---|--------------------------------------------------------------------------------------|-------------------------------------|---------------|
| 29 | VB3        | S   | -   | - | -                                                                                    | -                                   | 3             |
| 30 | LO1        | O   | -   | - | -                                                                                    | -                                   | 1             |
| 31 | VS2        | S   | -   | - | -                                                                                    | -                                   | 2             |
| 32 | HO2        | O   | -   | - | -                                                                                    | -                                   | 2             |
| 33 | VB2        | S   | -   | - | -                                                                                    | -                                   | 2             |
| 34 | VCC        | S   | -   | - | -                                                                                    | -                                   | ;<br>5.0V~20V |
| 35 | GND        | S   | -   | - | -                                                                                    | -                                   |               |
| 36 | VS1        | S   | -   | - | -                                                                                    | -                                   | 1             |
| 37 | HO1        | O   | -   | - | -                                                                                    | -                                   | 1             |
| 38 | VB1        | S   | -   | - | -                                                                                    | -                                   | 1             |
| 39 | PA13/SWDIO | I/O | FT  | Y | SWDIO-JTMS<br>SPI2_NSS<br>I2S2_WS<br>EVENTOUT<br>SPI2_MISO                           | -                                   |               |
| 40 | PA14/SWCLK | I/O | FT  | Y | SWCLK-JTCK<br>USART2_CK<br>I2C1_SDA<br>COMP2_OUT<br>EVENTOUT<br>SPI2_MOSI<br>I2S2_SD | -                                   |               |
| 41 | PB3        | I/O | FTa | Y | USART2_RTS<br>SPI1_SCK<br>I2S1_CK<br>TIM2_CH2<br>JTDO<br>EVENTOUT<br>TIM8_CH2N       | COMP1_INP<br>COMP2_INM<br>COMP3_INP |               |

42 PB4

|    |           |     |     |   |                                                                                                                                                                                       |                        |  |
|----|-----------|-----|-----|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--|
| 43 | PB5       | I/O | FTa | Y | USART2_RX<br>I2C1_SMBA<br>SPI1_MOSI<br>I2S1_SD<br>TIM3_CH2<br>UART3_RX<br>LPTIM_IN1<br>EVENTOUT<br>TIM8_CH4<br>TIM8_BKIN                                                              | COMP1_INM<br>COMP3_INP |  |
| 44 | PB6       | I/O | FT  | Y | USART1_TX<br>I2C1_SCL<br>SPI1_NSS<br>I2S1_WS<br>TIM1_CH2N<br>TIM4_CH1<br>SPI2_SCK<br>I2S2_CK<br>LPTIM_ETR<br>COMP1_OUT<br>EVENTOUT<br>CAN_RX<br>TIM1_CH4<br>TIM8_CH3N<br>BEEPER_OUT_P |                        |  |
| 45 | PB7       | I/O | FTa | Y | USART1_RX<br>I2C1_SDA<br>TIM4_CH2<br>EVENTOUT<br>LPTIM_IN2<br>CAN_TX<br>BEEPER_OUT_N<br>TIM8_ETR<br>TIM1_CH4N<br>SPI2_MISO<br>I2S2_MCK                                                | COMP2_INP              |  |
| 46 | BOOT0/PD0 | I/O | FT  | Y | -                                                                                                                                                                                     | -                      |  |





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| V1.0.0 | 2023.04.19 |  |

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