

N32G003x5

Product Brief

N32G003 series based on 32-bit ARM Cortex-M0, run up to 48MHz, up to 29.5KB embedded flash, 3KB SRAM, 1x12bit 1Msps ADC, 1xCOMP, 2xUART, 1xI2C, 1xSPI.

Key features

- **Core**
 - A 32-bit ARM Cortex-M0 core, Single-cycle hardware multiply instruction
 - Run up to 48MHz
- **Encrypted memory**
 - Up to 29.5KByte embedded Flash memory, data 100,000 cycling and 10 years retention
 - Up to 3KB SRAM
- **Power consumption mode**
 - Run mode: all peripherals are configurable
 - Stop mode: TIM6, IWDG can be configured to work, SRAM data is maintained, and all IO states are maintained
 - Power Down mode: All power supply off, support NRST, PA1_WKUP0, PA2_WKUP1 wake-up
- **Clock**
 - HSI: Internal high-speed RC OSC 48MHz/40MHz(optional)
 - LSI: Internal low-speed RC OSC 32KHz
 - MCO: Support 1-way clock output, configurable HSI or LSI clock output that can be divided.
- **Reset**
 - Support power-on/power-off/external pin reset
 - Support programmable low voltage detection and reset
 - Support watchdog reset, software reset
- **Communication interface**
 - 2xUART, which supports asynchronous mode, multiprocessor communication mode, single-wire half-duplex mode
 - 1xSPI, rate up to 12MHz
 - 1xI2C, rate up to 1MHz, which can be configured in master/slave mode
- **Analog interface**
 - 1x12bit 1Msps high-speed ADC , up to 9 external single-ended input channels and 1 internal channel connected to the 1.2V reference
 - 1xhigh-speed analog comparator, positive terminal input supports four adjustable dropout voltages of 0mV/100mV/200mV/ 300mV
- **Support up to 18 GPIOs that support multiplexing.**
- **1xBeeper, support complementary output**
- **Timer counter**

- 1x16-bit advanced timer counters, support input capture, output compare, each timer has 4 independent channels, 3 of which support 6 complementary PWM output
- 1x16-bit general purpose timer counters, each timer has 2 independent channels, supports input capture/output compare/PWM output
- 1x16-bit basic timer counter, supports STOP wake-up low-power mode
- 1x24-bit SysTick
- 1x12-bit Independent watchdog (IWDG)
- **Programming mode**
 - Support SWD online debugging interface
- **Security features**
 - CRC16 calculation
 - Support multiple read protection(RDP) levels (L0/L1/L2)
- **96-bit UID and 128-bit UCID**
- **Working conditions**
 - Operating Voltage Range: 2V~5.5V
 - Operating Temperature Range: -40°C~105°C
 - ESD: ±4KV (HBM model), ±1KV (CDM model)
- **Package**
 - QFN20(3mm x 3mm)
 - TSSOP20(6.5mm x 4.4mm)
- **Order model**

Series	Part Number
N32G003x5	N32G003F5S7, N32G003F5Q7
N32G003x4	N32G003F4S7、N32G003F4Q7

2 Devices list

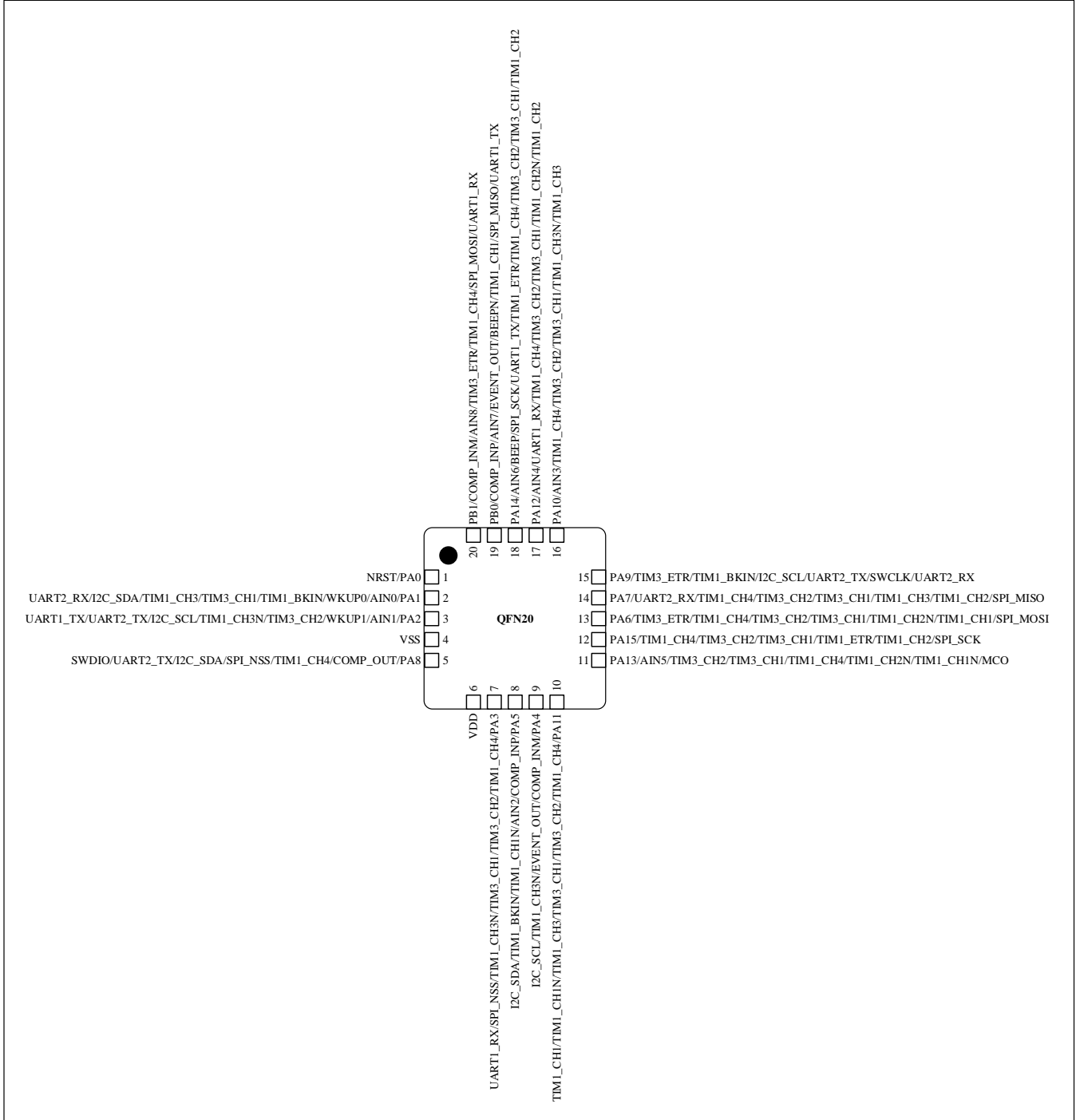
Table 2-1 N32G003 Series Resource Configuration

Part Number		N32G003F5Q7/F4Q7	N32G003F5S7/F4S7
Flash capacity (KB)		29.5/16	29.5/16
SRAM capacity (KB)		3	3
CPU frequency		ARM Cortex-M0 @48MHz	
Working environment		2~5.5V/-40~105℃	
Timer	General	1	1
	Advanced	1	1
	Basic	1	1
Communication interface	SPI	1	1
	I2C	1	1
	UART	2	2
GPIO		18	
12bit ADC		1x12bit	1x12bit
Number of channels		9Channel	9Channel
COMP		1	1
Beeper		1	1
Algorithm support		CRC16	CRC16
Security protection		Read protection (RDP)	
Package		QFN20	TSSOP20

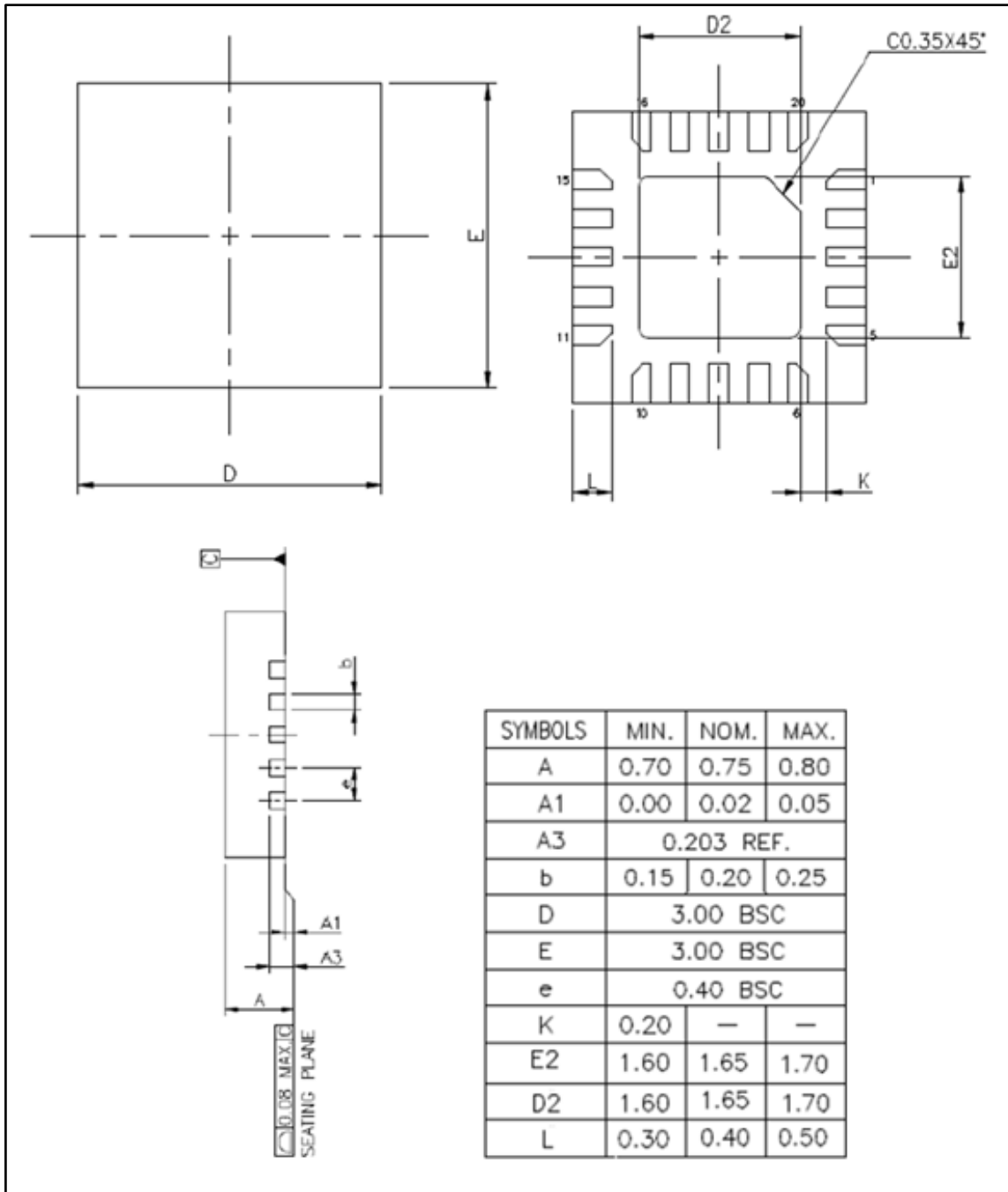
3 Package Information

3.1 QFN20

3.1.1 QFN20 Pinout

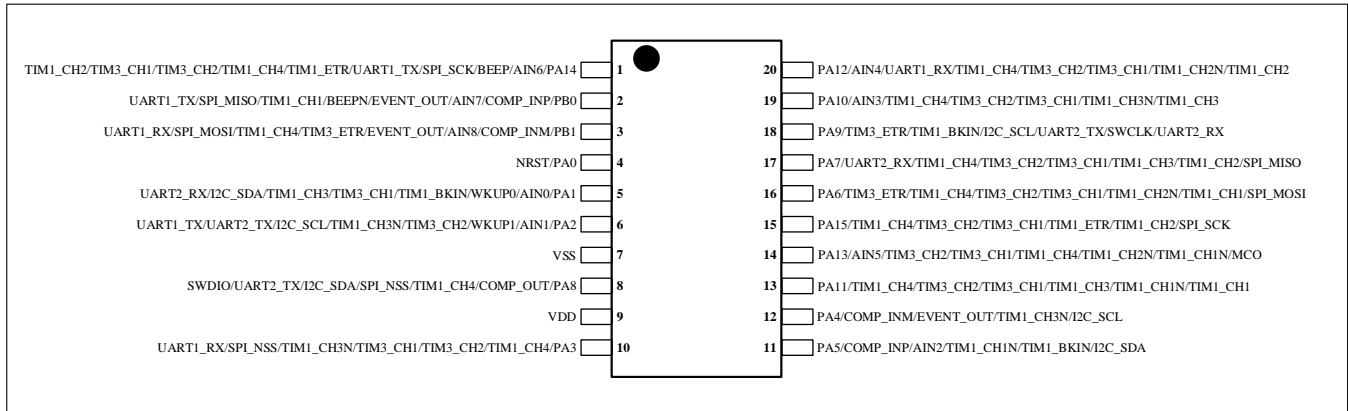


3.1.2 QFN20 Package

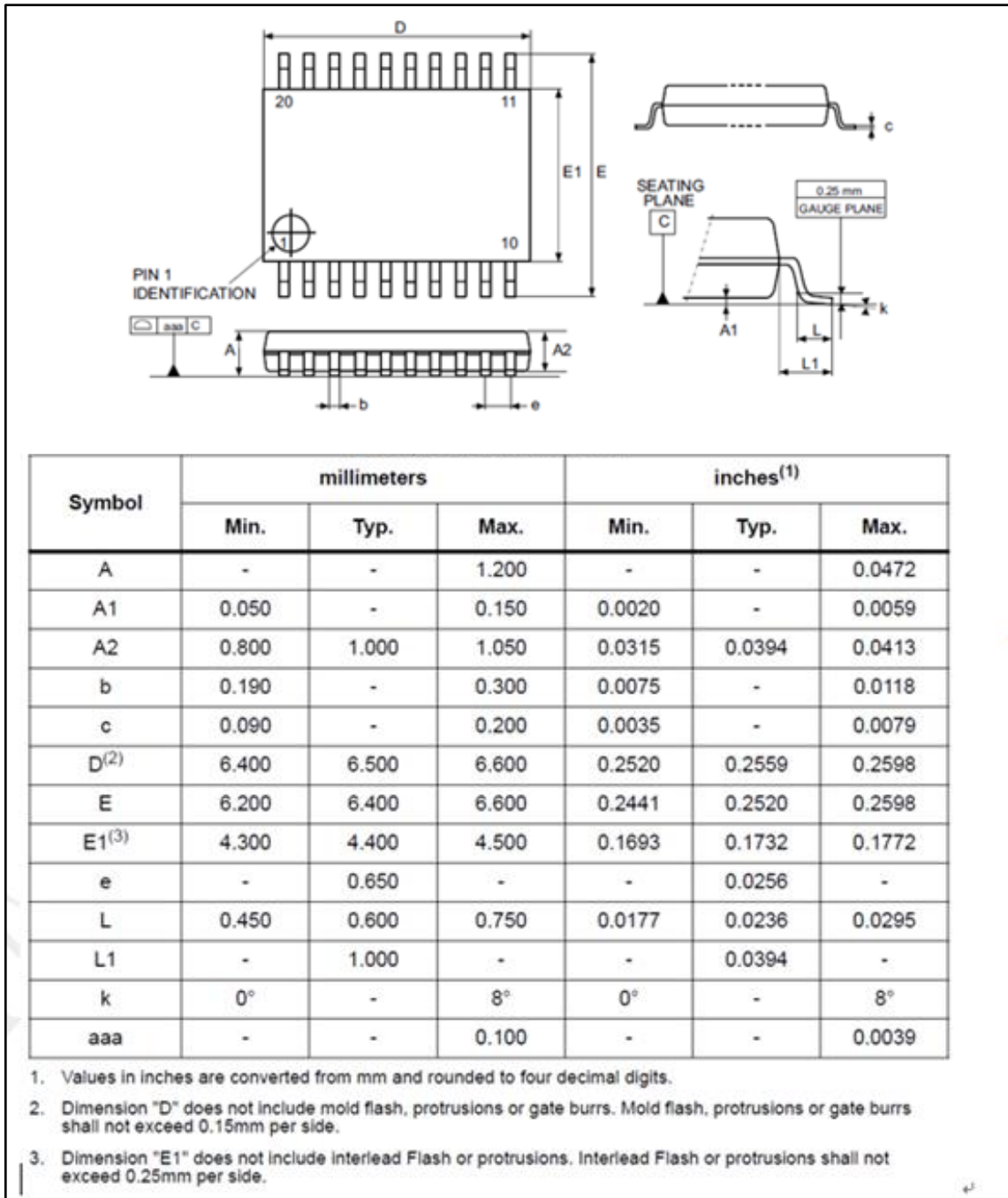


3.2 TSSOP20

3.2.1 TSSOP20 Pinout



3.2.2 TSSOP20 Package



4 Version history

Date	Version	Remark
V1.0	2022.9.1	Initial release
V1.1.0	2023.7.14	1.Added N32G003F4S7\N32G003F4Q7 model chips 2.Modified pinout diagram: PA9 adds UART2_RX function

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