GigaDevice Semiconductor (Beijing) Inc.

GD32 MCU
SPI NOR FLASH
SPI NAND FLASH



PRODUCT SELECTION GUIDE

深圳市满度科技有限公司
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About Us

Welcome to GigaDevice

GigaDevice, established in 2005, is a leading fabless company engaged in advanced memory technology and IC solutions. The company has successfully completed the IPO at Shanghai Stock Exchange in 2016. GigaDevice provides a wide range of high performance Flash memory and 32-bit general-purpose MCU products. Gigadevice is among the companies that pioneered SPI NOR Flash memory and is currently ranked number three in the world in this market segment with more than 1 billion units shipped every year.

Since 2007, GigaDevice is ISO9001 and ISO14001 certified by SGS. GigaDevice has filed 600+ patent applications with 200+ patents granted. More than 55% employees are in research and development, which continues to differentiate our products from competitions in the market. The GigaDevice management team embodies leading semiconductor industry experience from renowned memory companies in California's Silicon Valley, Korea, and Taiwan.

GigaDevice currently produces a wide range of SPI NOR Flash, SPI NAND Flash, Parallel NOR Flash and MCU for use in embedded, consumer, and mobile communications applications. GigaDevice operates a manufacturing model based on strong relationships with: foundry, assembly, and test subcontractor partners. GigaDevice believes this well-defined fabless manufacturing model provides us with a competitive advantage over the conventional fabrication-based Integrated Device Manufacturers because the capital equipment expenditure to maintain advanced memory process technologies is beyond the market return of many IC memory market segments. The consistent investment in advanced equipment by our foundry partners and their rapid growth in 12" wafer capacity are key factors in our success over our competitors.



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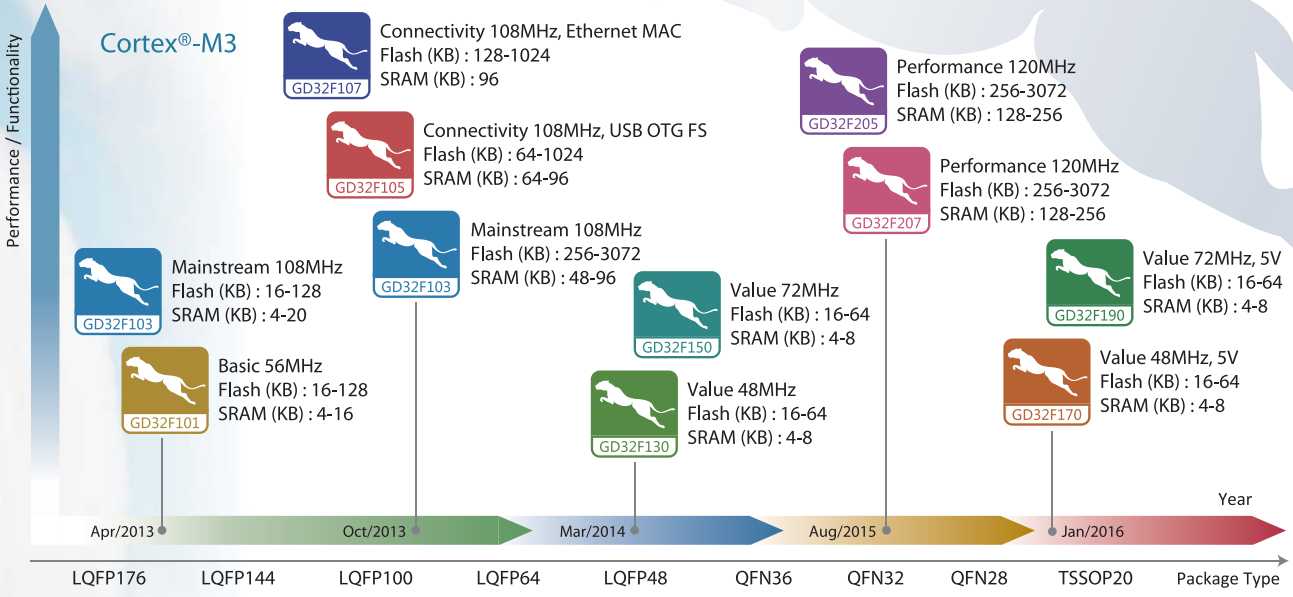
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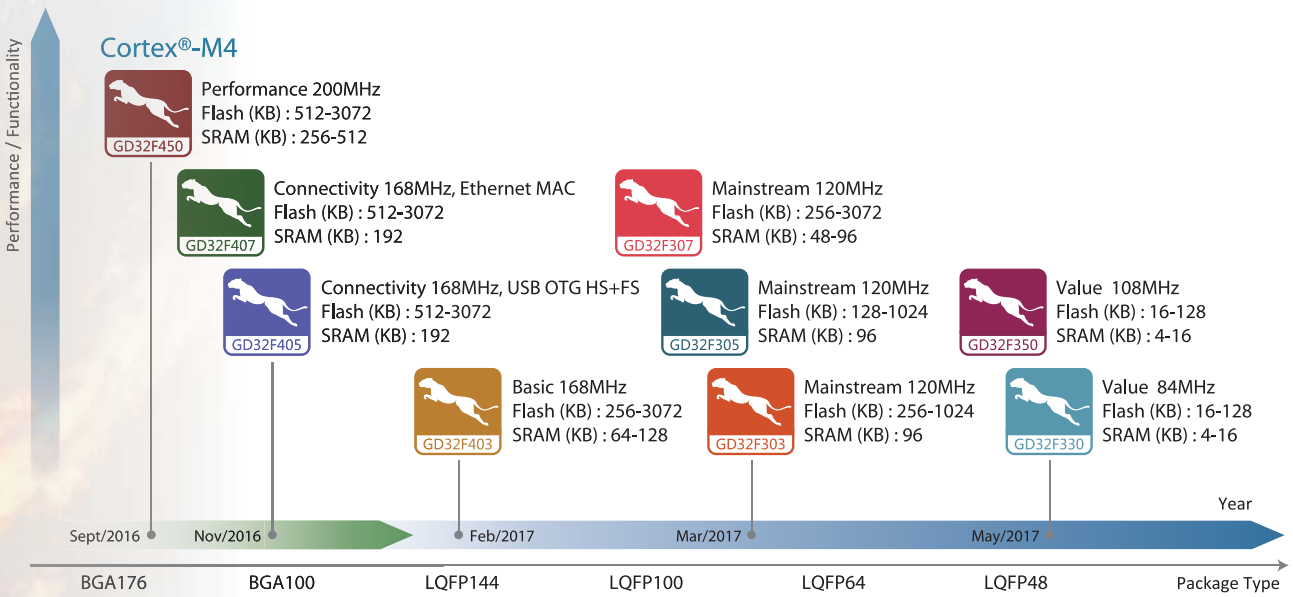
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GD32 MCU

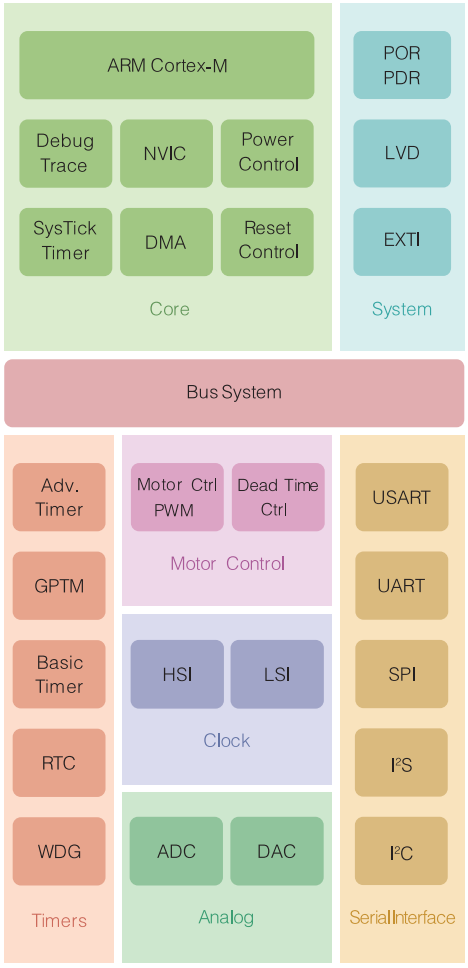
GD32 Cortex®-M3 MCU Portfolios



GD32 Cortex®-M4 MCU Portfolios



GD32 MCU Configuration



GD32F450 Performance Line

200MHz Frequency	Up to 3MB Flash	Up to 512KB SRAM	DSP FPU	CAN 2.0B	USB FS USB HS	SDIO	Camera	SDRAM	LCD TFT	IPA	Ethernet MAC

GD32F407 Performance

168MHz Frequency	Up to 3MB Flash	192KB SRAM	DSP FPU	CAN 2.0B	USB FS USB HS	SDIO	Camera	SDRAM	Ethernet MAC

GD32F405 Performance

168MHz Frequency	Up to 3MB Flash	192KB SRAM	DSP FPU	CAN 2.0B	USB FS USB HS	SDIO	Camera

GD32F207 Performance Line

120MHz Frequency	Up to 3MB Flash	Up to 256KB SRAM	CAN 2.0B	USB FS OTG	Camera	SDRAM	LCD TFT	Crypto Hash	Ethernet

GD32F205 Performance Line

120MHz Frequency	Up to 3MB Flash	Up to 256KB SRAM	CAN 2.0B	USB FS OTG	LCD TFT	SDRAM

GD32F107 Connectivity Line

108MHz Frequency	Up to 1MB Flash	Up to 96KB SRAM	CAN 2.0B	USB 2.0 FS OTG	Ethernet

GD32F105 Connectivity Line

108MHz Frequency	Up to 1MB Flash	Up to 96KB SRAM	CAN 2.0B	USB 2.0 FS OTG

GD32F103 Mainstream Line

108MHz Frequency	Up to 3MB Flash	Up to 96KB SRAM	CAN 2.0B	USB 2.0 FS	SDIO

GD32F101 Basic Line

56MHz Frequency	Up to 3MB Flash	Up to 80KB SRAM

GD32F190 5V Value Line

72MHz Frequency	Up to 64KB Flash	Up to 8KB SRAM	CAN 2.0B	Segment LCD	Advanced Analog

GD32F170 5V Value Line

48MHz Frequency	Up to 64KB Flash	Up to 8KB SRAM	CAN 2.0B

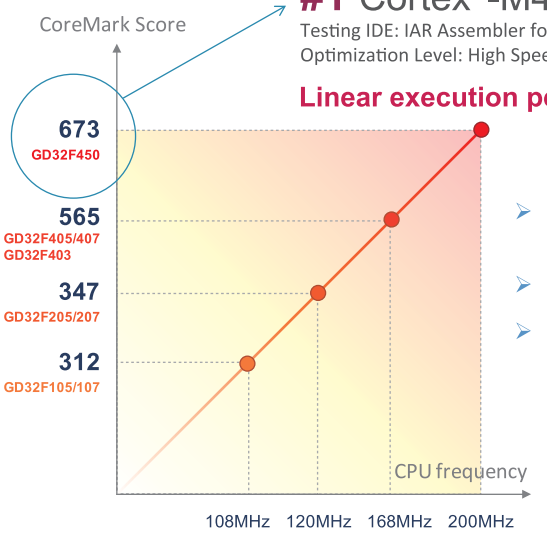
GD32F150 Value Line

72MHz Frequency	Up to 64KB Flash	Up to 8KB SRAM	HDMI-CEC	USB 2.0 FS	TSI

GD32F130 Value Line

48MHz Frequency	Up to 64KB Flash	Up to 8KB SRAM

New GD32F4, Leading Performance



#1 Cortex®-M4 rank on CoreMark®

Testing IDE: IAR Assembler for ARM 7.40.2.8542
Optimization Level: High Speed, No size constraint

Linear execution performance

- **Up to 200** MHz / 250 **DMIPS** with **Flash access Zero wait-state**
- **Up to 673** CoreMark Result
- ARM Cortex-M4 DSP + floating-point unit (FPU)

GD32

Outstanding Value Innovation Choice

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MCU Package Options

LQFP176 (24*24mm)	LQFP144 (20*20mm)	LQFP100 (14*14mm)	LQFP64 (10*10mm)	LQFP48 (7*7mm)
				

BGA176 (10*10mm)	BGA100 (7*7mm)	QFN36 (6*6mm)	QFN32 (5*5mm)	QFN28 (4*4mm)	TSSOP20 (6.5*4.4mm)
					



GD32 Development Eco-system

Build GD32 development environment with H/W and S/W compatible

KEIL™ Tools by ARM · IAR SYSTEMS · CrossWorks · J-link · SEGGER

CERTIFIED USB · Wellon · SUPERPRO · ZLG® · ELNEC · PE micro

Product Line

Multiplex products

Best peripherals

Service

Sufficient Capacity

Fast lead time



Series compatible

Easy to use

High Performance

Cost-effective

Eco-system

Quality

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GD32F3 series of 32-bit ARM® Cortex®-M4 MCUs Selection Guide



Series	Part No.	Max Speed (MHz)	Memory (Bytes)		I/O	Timer						Connectivity								EXMC	Analog Interface		Package
			Flash	SRAM		GPTM (16bit)	Advanced TM (16bit)	Basic TM (16bit)	SysTick (24bit)	WDG	RTC	USART +UART	I²C	SPI	CAN 2.0B	USB 2.0 FS	I²S	SDIO	Ether-net		12bit ADC Units (CHs)	12bit DAC Units	
GD32F303	GD32F303CCT6	120	256K	48K	up to 37	4	1	2	1	2	1	3	2	3	1	1	2				3(10)	2	LQFP48
	GD32F303CET6	120	512K	64K	up to 37	4	1	2	1	2	1	3	2	3	1	1	2				3(10)	2	LQFP48
	GD32F303CGT6	120	1024K	96K	up to 37	10	1	2	1	2	1	3	2	3	1	1	2				3(10)	2	LQFP48
	GD32F303RCT6	120	256K	48K	up to 51	4	2	2	1	2	1	5	2	3	1	1	2	1			3(16)	2	LQFP64
	GD32F303RET6	120	512K	64K	up to 51	4	2	2	1	2	1	5	2	3	1	1	2	1			3(16)	2	LQFP64
	GD32F303RGT6	120	1024K	96K	up to 51	10	2	2	1	2	1	5	2	3	1	1	2	1			3(16)	2	LQFP64
	GD32F303RIT6	120	2048K	96K	up to 51	10	2	2	1	2	1	5	2	3	1	1	2	1			3(16)	2	LQFP64
	GD32F303RKT6	120	3072K	96K	up to 51	10	2	2	1	2	1	5	2	3	1	1	2	1			3(16)	2	LQFP64
	GD32F303VCT6	120	256K	48K	up to 80	4	2	2	1	2	1	5	2	3	1	1	2	1		•	3(16)	2	LQFP100
	GD32F303VET6	120	512K	64K	up to 80	4	2	2	1	2	1	5	2	3	1	1	2	1		•	3(16)	2	LQFP100
	GD32F303VGT6	120	1024K	96K	up to 80	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(16)	2	LQFP100
	GD32F303VIT6	120	2048K	96K	up to 80	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(16)	2	LQFP100
	GD32F303VKT6	120	3072K	96K	up to 80	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(16)	2	LQFP100
	GD32F303ZCT6	120	256K	48K	up to 112	4	2	2	1	2	1	5	2	3	1	1	2	1		•	3(21)	2	LQFP144
	GD32F303ZET6	120	512K	64K	up to 112	4	2	2	1	2	1	5	2	3	1	1	2	1		•	3(21)	2	LQFP144
	GD32F303ZGT6	120	1024K	96K	up to 112	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(21)	2	LQFP144
	GD32F303ZIT6	120	2048K	96K	up to 112	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(21)	2	LQFP144
	GD32F303ZKT6	120	3072K	96K	up to 112	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(21)	2	LQFP144
GD32F305	GD32F305RBT6	120	128K	64K	up to 51	4	1	2	1	2	1	5	2	3	2	OTG	2				2(16)	2	LQFP64
	GD32F305RCT6	120	256K	96K	up to 51	4	1	2	1	2	1	5	2	3	2	OTG	2				2(16)	2	LQFP64
	GD32F305RET6	120	512K	96K	up to 51	4	2	2	1	2	1	5	2	3	2	OTG	2				2(16)	2	LQFP64
	GD32F305RGT6	120	1024K	96K	up to 51	10	2	2	1	2	1	5	2	3	2	OTG	2				2(16)	2	LQFP64
	GD32F305VCT6	120	256K	96K	up to 80	4	1	2	1	2	1	5	2	3	2	OTG	2			•	2(16)	2	LQFP100
	GD32F305VET6	120	512K	96K	up to 80	4	2	2	1	2	1	5	2	3	2	OTG	2			•	2(16)	2	LQFP100
	GD32F305VGT6	120	1024K	96K	up to 80	10	2	2	1	2	1	5	2	3	2	OTG	2			•	2(16)	2	LQFP100
	GD32F305ZCT6	120	256K	96K	up to 112	4	2	2	1	2	1	5	2	3	2	OTG	2			•	2(21)	2	LQFP144
	GD32F305ZET6	120	512K	96K	up to 112	4	2	2	1	2	1	5	2	3	2	OTG	2			•	2(21)	2	LQFP144
	GD32F305ZGT6	120	1024K	96K	up to 112	10	2	2	1	2	1	5	2	3	2	OTG	2			•	2(21)	2	LQFP144
GD32F307	GD32F307RCT6	120	256K	96K	up to 51	4	1	2	1	2	1	5	2	3	2	OTG	2		•		2(16)	2	LQFP64
	GD32F307RET6	120	512K	96K	up to 51	4	2	2	1	2	1	5	2	3	2	OTG	2		•		2(16)	2	LQFP64
	GD32F307RGT6	120	1024K	96K	up to 51	10	2	2	1	2	1	5	2	3	2	OTG	2		•		2(16)	2	LQFP64
	GD32F307VCT6	120	256K	96K	up to 80	4	1	2	1	2	1	5	2	3	2	OTG	2		•	•	2(16)	2	LQFP100
	GD32F307VET6	120	512K	96K	up to 80	4	2	2	1	2	1	5	2	3	2	OTG	2		•	•	2(16)	2	LQFP100
	GD32F307VGT6	120	1024K	96K	up to 80	10	2	2	1	2	1	5	2	3	2	OTG	2		•	•	2(16)	2	LQFP100
	GD32F307ZCT6	120	256K	96K	up to 112	4	2	2	1	2	1	5	2	3	2	OTG	2		•	•	2(21)	2	LQFP144
	GD32F307ZET6	120	512K	96K	up to 112	4	2	2	1	2	1	5	2	3	2	OTG	2		•	•	2(21)	2	LQFP144
	GD32F307ZGT6	120	1024K	96K	up to 112	10	2	2	1	2	1	5	2	3	2	OTG	2		•	•	2(21)	2	LQFP144

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GD32F3 series of 32-bit ARM® Cortex®-M4 MCUs Selection Guide

Series	Part No.	Max Speed (MHz)	Memory (Bytes)		I/O	Timer							Connectivity							Analog Interface		Package
			Flash	SRAM		GPTM (32bit)	GPTM (16bit)	Advanced TM (16bit)	Basic TM (16bit)	SysTick (24bit)	WDG	RTC	USART	I²C	SPI	USB 2.0 FS	I²S	CEC	Comp	12bit ADC Units (CHs)	12bit DAC Units	
GD32F330	GD32F330F4P6	84	16K	4K	up to 15	1	4	1		1	2	1	1	1	1					1(9)		TSSOP20
	GD32F330F6P6	84	32K	4K	up to 15	1	4	1		1	2	1	2	1	1					1(9)		TSSOP20
	GD32F330F8P6	84	64K	8K	up to 15	1	4	1		1	2	1	2	2	2					1(9)		TSSOP20
	GD32F330G4U6	84	16K	4K	up to 23	1	4	1		1	2	1	1	1	1					1(10)		QFN28
	GD32F330G6U6	84	32K	4K	up to 23	1	4	1		1	2	1	2	1	1					1(10)		QFN28
	GD32F330G8U6	84	64K	8K	up to 23	1	5	1		1	2	1	2	2	2					1(10)		QFN28
	GD32F330K4U6	84	16K	4K	up to 27	1	4	1		1	2	1	1	1	1					1(10)		QFN32
	GD32F330K6U6	84	32K	4K	up to 27	1	4	1		1	2	1	2	1	1					1(10)		QFN32
	GD32F330K8U6	84	64K	8K	up to 27	1	5	1		1	2	1	2	2	2					1(10)		QFN32
	GD32F330C4T6	84	16K	4K	up to 39	1	4	1		1	2	1	1	1	1					1(10)		LQFP48
	GD32F330C6T6	84	32K	4K	up to 39	1	4	1		1	2	1	2	1	1					1(10)		LQFP48
	GD32F330C8T6	84	64K	8K	up to 39	1	5	1		1	2	1	2	2	2					1(10)		LQFP48
	GD32F330CBT6	84	128K	16K	up to 39	1	5	1		1	2	1	2	2	2					1(10)		LQFP48
	GD32F330R8T6	84	64K	16K	up to 55	1	5	1		1	2	1	2	2	2					1(16)		LQFP64
	GD32F330RBT6	84	128K	16K	up to 55	1	5	1		1	2	1	2	2	2					1(16)		LQFP64
GD32F350	GD32F350G4U6	108	16K	4K	up to 24	1	5	1	1	1	2	1	1	1	1	OTG	1	1	2	1(10)	1	QFN28
	GD32F350G6U6	108	32K	6K	up to 24	1	5	1	1	1	2	1	2	1	1	OTG	1	1	2	1(10)	1	QFN28
	GD32F350G8U6	108	64K	8K	up to 24	1	5	1	1	1	2	1	2	2	2	OTG	1	1	2	1(10)	1	QFN28
	GD32F350K4U6	108	16K	4K	up to 27	1	5	1	1	1	2	1	1	1	1	OTG	1	1	2	1(10)	1	QFN32
	GD32F350K6U6	108	32K	6K	up to 27	1	5	1	1	1	2	1	2	1	1	OTG	1	1	2	1(10)	1	QFN32
	GD32F350K8U6	108	64K	8K	up to 27	1	5	1	1	1	2	1	2	2	2	OTG	1	1	2	1(10)	1	QFN32
	GD32F350C4T6	108	16K	4K	up to 39	1	5	1	1	1	2	1	1	1	1	OTG	1	1	2	1(10)	1	LQFP48
	GD32F350C6T6	108	32K	6K	up to 39	1	5	1	1	1	2	1	2	1	1	OTG	1	1	2	1(10)	1	LQFP48
	GD32F350C8T6	108	64K	8K	up to 39	1	5	1	1	1	2	1	2	2	2	OTG	1	1	2	1(10)	1	LQFP48
	GD32F350CBT6	108	128K	16K	up to 39	1	5	1	1	1	2	1	2	2	2	OTG	1	1	2	1(10)	1	LQFP48
	GD32F350R4T6	108	16K	4K	up to 55	1	5	1	1	1	2	1	1	1	1	OTG	1	1	2	1(16)	1	LQFP64
	GD32F350R6T6	108	32K	8K	up to 55	1	5	1	1	1	2	1	2	1	1	OTG	1	1	2	1(16)	1	LQFP64
	GD32F350R8T6	108	64K	16K	up to 55	1	5	1	1	1	2	1	2	2	2	OTG	1	1	2	1(16)	1	LQFP64
	GD32F350RBT6	108	128K	16K	up to 55	1	5	1	1	1	2	1	2	2	2	OTG	1	1	2	1(16)	1	LQFP64

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GD32F4 series of 32-bit ARM® Cortex®-M4F MCUs Selection Guide

Series	Part No.	Max Speed (MHz)	Memory (Bytes)		I/O	Timer						Connectivity											EXMC/ SDRAM	Analog Interface		Package
			Flash	SRAM		GPTM (16bit)	Adv TM (16bit)	GPTM (32bit)	Bsc TM (16bit)	WDG	RTC	USART +UART	I²C	SPI	CAN 2.0B	USB OTG	I²S	SDIO	LCD-TFT	Camera	ETH MAC	IPA		12bit ADC Units (CHs)	12bit DAC Units	
GD32F450	GD32F450VET6	200	512K	256K	up to 82	8	2	2	2	2	1	4+4	3	5	2	FS+HS	2	1	1	1	1	1	1/0	3(16)	2	LQFP100
	GD32F450VGT6	200	1024K	256K	up to 82	8	2	2	2	2	1	4+4	3	5	2	FS+HS	2	1	1	1	1	1	1/0	3(16)	2	LQFP100
	GD32F450VIT6	200	2048K	512K	up to 82	8	2	2	2	2	1	4+4	3	5	2	FS+HS	2	1	1	1	1	1	1/0	3(16)	2	LQFP100
	GD32F450VKT6	200	3072K	256K	up to 82	8	2	2	2	2	1	4+4	3	5	2	FS+HS	2	1	1	1	1	1	1/0	3(16)	2	LQFP100
	GD32F450ZET6	200	512K	256K	up to 114	8	2	2	2	2	1	4+4	3	6	2	FS+HS	2	1	1	1	1	1	1/1	3(24)	2	LQFP144
	GD32F450ZGT6	200	1024K	256K	up to 114	8	2	2	2	2	1	4+4	3	6	2	FS+HS	2	1	1	1	1	1	1/1	3(24)	2	LQFP144
	GD32F450ZIT6	200	2048K	512K	up to 114	8	2	2	2	2	1	4+4	3	6	2	FS+HS	2	1	1	1	1	1	1/1	3(24)	2	LQFP144
	GD32F450ZKT6	200	3072K	256K	up to 114	8	2	2	2	2	1	4+4	3	6	2	FS+HS	2	1	1	1	1	1	1/1	3(24)	2	LQFP144
	GD32F450IGH6	200	1024K	256K	up to 140	8	2	2	2	2	1	4+4	3	6	2	FS+HS	2	1	1	1	1	1	1/1	3(24)	2	BGA176
	GD32F450IIH6	200	2048K	512K	up to 140	8	2	2	2	2	1	4+4	3	6	2	FS+HS	2	1	1	1	1	1	1/1	3(24)	2	BGA176
	GD32F450IKH6	200	3072K	256K	up to 140	8	2	2	2	2	1	4+4	3	6	2	FS+HS	2	1	1	1	1	1	1/1	3(24)	2	BGA176
GD32F405	GD32F405RET6	168	512K	192K	up to 51	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1				3(16)	2	LQFP64
	GD32F405RGT6	168	1024K	192K	up to 51	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1				3(16)	2	LQFP64
	GD32F405RKT6	168	3072K	192K	up to 51	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1				3(16)	2	LQFP64
	GD32F405VGT6	168	1024K	192K	up to 82	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1				3(16)	2	LQFP100
	GD32F405VKT6	168	3072K	192K	up to 82	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1				3(16)	2	LQFP100
	GD32F405VGH6	168	1024K	192K	up to 82	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1				3(16)	2	BGA100
	GD32F405VKH6	168	3072K	192K	up to 82	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1				3(16)	2	BGA100
	GD32F405ZGT6	168	1024K	192K	up to 114	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1				3(24)	2	LQFP144
	GD32F405ZKT6	168	3072K	192K	up to 114	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1				3(24)	2	LQFP144
GD32F407	GD32F407RET6	168	512K	192K	up to 51	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1			3(16)	2	LQFP64
	GD32F407RGT6	168	1024K	192K	up to 51	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1			3(16)	2	LQFP64
	GD32F407RKT6	168	3072K	192K	up to 51	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1			3(16)	2	LQFP64
	GD32F407VET6	168	512K	192K	up to 82	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1		1/0	3(16)	2	LQFP100
	GD32F407VGT6	168	1024K	192K	up to 82	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1		1/0	3(16)	2	LQFP100
	GD32F407VKT6	168	3072K	192K	up to 82	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1		1/0	3(16)	2	LQFP100
	GD32F407VEH6	168	512K	192K	up to 82	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1		1/0	3(16)	2	BGA100
	GD32F407VGH6	168	1024K	192K	up to 82	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1		1/0	3(16)	2	BGA100
	GD32F407VKH6	168	3072K	192K	up to 82	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1		1/0	3(16)	2	BGA100
	GD32F407ZET6	168	512K	192K	up to 114	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1		1/1	3(24)	2	LQFP144
	GD32F407ZGT6	168	1024K	192K	up to 114	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1		1/1	3(24)	2	LQFP144
	GD32F407ZKT6	168	3072K	192K	up to 114	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1		1/1	3(24)	2	LQFP144
	GD32F407IEH6	168	512K	192K	up to 140	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1		1/1	3(24)	2	BGA176
	GD32F407IGH6	168	1024K	192K	up to 140	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1		1/1	3(24)	2	BGA176
	GD32F407IKH6	168	3072K	192K	up to 140	8	2	2	2	2	1	4+2	3	3	2	FS+HS	2	1		1	1		1/1	3(24)	2	BGA176

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GD32F4 series of 32-bit ARM® Cortex®-M4F MCUs Selection Guide

Series	Part No.	Max Speed (MHz)	Memory (Bytes)		I/O	Timer						Connectivity											EXMC/ SDRAM	Analog Interface		Package
			Flash	SRAM		GPTM (16bit)	Adv TM (16bit)	GPTM (32bit)	Bsc TM (16bit)	WDG	RTC	USART +UART	I²C	SPI	CAN 2.0B	USB OTG	I²S	SDIO	LCD-TFT	Camera	ETH MAC	IPA		12bit ADC Units (CHs)	12bit DAC Units	
GD32F403	GD32F403RCT6	168	256K	64K	up to 51	8	2		2	2	1	3+2	2	3	2	OTG	2	1					0/0	3(16)	2	LQFP64
	GD32F403RET6	168	512K	96K	up to 51	8	2		2	2	1	3+2	2	3	2	OTG	2	1					0/0	3(16)	2	LQFP64
	GD32F403RGT6	168	1024K	128K	up to 51	8	2		2	2	1	3+2	2	3	2	OTG	2	1					0/0	3(16)	2	LQFP64
	GD32F403RIT6	168	2048K	128K	up to 51	8	2		2	2	1	3+2	2	3	2	OTG	2	1					0/0	3(16)	2	LQFP64
	GD32F403RKT6	168	3072K	128K	up to 51	8	2		2	2	1	3+2	2	3	2	OTG	2	1					0/0	3(16)	2	LQFP64
	GD32F403VCT6	168	256K	64K	up to 80	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(16)	2	LQFP100
	GD32F403VET6	168	512K	96K	up to 80	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(16)	2	LQFP100
	GD32F403VGT6	168	1024K	128K	up to 80	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(16)	2	LQFP100
	GD32F403VIT6	168	2048K	128K	up to 80	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(16)	2	LQFP100
	GD32F403VKT6	168	3072K	128K	up to 80	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(16)	2	LQFP100
	GD32F403VCH6	168	256K	64K	up to 80	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(16)	2	BGA100
	GD32F403VEH6	168	512K	96K	up to 80	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(16)	2	BGA100
	GD32F403VGH6	168	1024K	128K	up to 80	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(16)	2	BGA100
	GD32F403VIH6	168	2048K	128K	up to 80	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(16)	2	BGA100
	GD32F403VKH6	168	3072K	128K	up to 80	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(16)	2	BGA100
	GD32F403ZCT6	168	256K	64K	up to 112	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(21)	2	LQFP144
	GD32F403ZET6	168	512K	96K	up to 112	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(21)	2	LQFP144
	GD32F403ZGT6	168	1024K	128K	up to 112	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(21)	2	LQFP144
	GD32F403ZIT6	168	2048K	128K	up to 112	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(21)	2	LQFP144
	GD32F403ZKT6	168	3072K	128K	up to 112	8	2		2	2	1	3+2	2	3	2	OTG	2	1					1/0	3(21)	2	LQFP144

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GD32F2 series of 32-bit ARM® Cortex®-M3 MCUs Selection Guide

Series	Part No.	Max Speed (MHz)	Memory (Bytes)		I/O	Timer						Connectivity											EXMC/ SDRAM	Analog Interface		Package
			Flash	SRAM		GPTM (16bit)	Adv TM (16bit)	Bsc TM (16bit)	SysTick (24bit)	WDG	RTC	USART +UART	I²C	SPI	CAN 2.0B	USB 2.0 FS	I²S	SDIO	LCD-TFT	Camera	ETH MAC	Crypto/ Hash		12bit ADC Units (CHs)	12bit DAC Units	
GD32F205	GD32F205RCT6	120	256K	128K	up to 51	10	2	2	1	2	1	4+2	3	3	2	OTG	2	1						3(16)	2	LQFP64
	GD32F205RET6	120	512K	128K	up to 51	10	2	2	1	2	1	4+2	3	3	2	OTG	2	1						3(16)	2	LQFP64
	GD32F205RGT6	120	1024K	256K	up to 51	10	2	2	1	2	1	4+2	3	3	2	OTG	2	1						3(16)	2	LQFP64
	GD32F205RKT6	120	3072K	256K	up to 51	10	2	2	1	2	1	4+2	3	3	2	OTG	2	1						3(16)	2	LQFP64
	GD32F205VCT6	120	256K	128K	up to 82	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1				1/0	3(16)	2	LQFP100
	GD32F205VET6	120	512K	128K	up to 82	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1				1/0	3(16)	2	LQFP100
	GD32F205VGT6	120	1024K	256K	up to 82	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1				1/0	3(16)	2	LQFP100
	GD32F205VKT6	120	3072K	256K	up to 82	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1				1/0	3(16)	2	LQFP100
	GD32F205ZCT6	120	256K	128K	up to 114	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1				1/1	3(24)	2	LQFP144
	GD32F205ZET6	120	512K	128K	up to 114	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1				1/1	3(24)	2	LQFP144
	GD32F205ZGT6	120	1024K	256K	up to 114	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1				1/1	3(24)	2	LQFP144
	GD32F205ZKT6	120	3072K	256K	up to 114	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1				1/1	3(24)	2	LQFP144
GD32F207	GD32F207RCT6	120	256K	128K	up to 51	10	2	2	1	2	1	4+2	3	3	2	OTG	2	1		1	1	1		3(16)	2	LQFP64
	GD32F207RET6	120	512K	128K	up to 51	10	2	2	1	2	1	4+2	3	3	2	OTG	2	1		1	1	1		3(16)	2	LQFP64
	GD32F207RGT6	120	1024K	256K	up to 51	10	2	2	1	2	1	4+2	3	3	2	OTG	2	1		1	1	1		3(16)	2	LQFP64
	GD32F207RKT6	120	3072K	256K	up to 51	10	2	2	1	2	1	4+2	3	3	2	OTG	2	1		1	1	1		3(16)	2	LQFP64
	GD32F207VCT6	120	256K	128K	up to 82	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1	1	1	1	1/0	3(16)	2	LQFP100
	GD32F207VET6	120	512K	128K	up to 82	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1	1	1	1	1/0	3(16)	2	LQFP100
	GD32F207VGT6	120	1024K	256K	up to 82	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1	1	1	1	1/0	3(16)	2	LQFP100
	GD32F207VKT6	120	3072K	256K	up to 82	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1	1	1	1	1/0	3(16)	2	LQFP100
	GD32F207ZCT6	120	256K	128K	up to 114	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1	1	1	1	1/1	3(24)	2	LQFP144
	GD32F207ZET6	120	512K	128K	up to 114	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1	1	1	1	1/1	3(24)	2	LQFP144
	GD32F207ZGT6	120	1024K	256K	up to 114	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1	1	1	1	1/1	3(24)	2	LQFP144
	GD32F207ZKT6	120	3072K	256K	up to 114	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1	1	1	1	1/1	3(24)	2	LQFP144
	GD32F207IET6	120	512K	128K	up to 140	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1	1	1	1	1/1	3(24)	2	LQFP176
	GD32F207IGT6	120	1024K	256K	up to 140	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1	1	1	1	1/1	3(24)	2	LQFP176
	GD32F207IKT6	120	3072K	256K	up to 140	10	2	2	1	2	1	4+4	3	3	2	OTG	2	1	1	1	1	1	1/1	3(24)	2	LQFP176

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GD32F1 series of 32-bit ARM® Cortex®-M3 MCUs Selection Guide

Series	Part No.	Max Speed (MHz)	Memory (Bytes)		I/O	Timer							Connectivity						Analog Interface		Package
			Flash	SRAM		GPTM (32bit)	GPTM (16bit)	Advanced TM (16bit)	Basic TM (16bit)	SysTick (24bit)	WDG	RTC	USART	I²C	SPI	USB 2.0 FS	I²S	CEC	12bit ADC Units (CHs)	12bit DAC Units	
GD32F130	GD32F130F4P6	48	16K	4K	up to 15	1	4	1		1	2	1	1	1	1				1(9)		TSSOP20
	GD32F130F6P6	48	32K	4K	up to 15	1	4	1		1	2	1	2	1	1				1(9)		TSSOP20
	GD32F130F8P6	48	64K	8K	up to 15	1	4	1		1	2	1	2	2	2				1(9)		TSSOP20
	GD32F130G4U6	48	16K	4K	up to 23	1	4	1		1	2	1	1	1	1				1(10)		QFN28
	GD32F130G6U6	48	32K	4K	up to 23	1	4	1		1	2	1	2	1	1				1(10)		QFN28
	GD32F130G8U6	48	64K	8K	up to 23	1	5	1		1	2	1	2	2	2				1(10)		QFN28
	GD32F130K4U6	48	16K	4K	up to 27	1	4	1		1	2	1	1	1	1				1(10)		QFN32
	GD32F130K6U6	48	32K	4K	up to 27	1	4	1		1	2	1	2	1	1				1(10)		QFN32
	GD32F130K8U6	48	64K	8K	up to 27	1	5	1		1	2	1	2	2	2				1(10)		QFN32
	GD32F130C4T6	48	16K	4K	up to 39	1	4	1		1	2	1	1	1	1				1(10)		LQFP48
	GD32F130C6T6	48	32K	4K	up to 39	1	4	1		1	2	1	2	1	1				1(10)		LQFP48
	GD32F130C8T6	48	64K	8K	up to 39	1	5	1		1	2	1	2	2	2				1(10)		LQFP48
	GD32F130R8T6	48	64K	8K	up to 55	1	5	1		1	2	1	2	2	2				1(16)		LQFP64
GD32F150	GD32F150G4U6	72	16K	4K	up to 24	1	5	1	1	1	2	1	1	1	1	1	1	1	1(10)	1	QFN28
	GD32F150G6U6	72	32K	6K	up to 24	1	5	1	1	1	2	1	2	1	1	1	1	1	1(10)	1	QFN28
	GD32F150G8U6	72	64K	8K	up to 24	1	5	1	1	1	2	1	2	2	2	1	1	1	1(10)	1	QFN28
	GD32F150K4U6	72	16K	4K	up to 27	1	5	1	1	1	2	1	1	1	1	1	1	1	1(10)	1	QFN32
	GD32F150K6U6	72	32K	6K	up to 27	1	5	1	1	1	2	1	2	1	1	1	1	1	1(10)	1	QFN32
	GD32F150K8U6	72	64K	8K	up to 27	1	5	1	1	1	2	1	2	2	2	1	1	1	1(10)	1	QFN32
	GD32F150C4T6	72	16K	4K	up to 39	1	5	1	1	1	2	1	1	1	1	1	1	1	1(10)	1	LQFP48
	GD32F150C6T6	72	32K	6K	up to 39	1	5	1	1	1	2	1	2	1	1	1	1	1	1(10)	1	LQFP48
	GD32F150C8T6	72	64K	8K	up to 39	1	5	1	1	1	2	1	2	2	2	1	1	1	1(10)	1	LQFP48
	GD32F150R4T6	72	16K	4K	up to 55	1	5	1	1	1	2	1	1	1	1	1	1	1	1(16)	1	LQFP64
	GD32F150R6T6	72	32K	6K	up to 55	1	5	1	1	1	2	1	2	1	1	1	1	1	1(16)	1	LQFP64
	GD32F150R8T6	72	64K	8K	up to 55	1	5	1	1	1	2	1	2	2	2	1	1	1	1(16)	1	LQFP64

Series	Part No.	Max Speed (MHz)	Memory (Bytes)		I/O	Timer							Connectivity								Analog Interface		Package
			Flash	SRAM		GPTM (32bit)	GPTM (16bit)	Advanced TM (16bit)	Basic TM (16bit)	SysTick (24bit)	WDG	RTC	USART	I²C	SPI	CAN 2.0B	I²S	LCD	OP-amp	Comp	12bit ADC Units (CHs)	12bit DAC Units	
GD32F170	GD32F170T4U6	48	16K	4K	up to 28	1	4	1		1	2	1	1	1	1	2					1(10)		QFN36
	GD32F170T6U6	48	32K	4K	up to 28	1	4	1		1	2	1	2	1		2					1(10)		QFN36
	GD32F170T8U6	48	64K	8K	up to 28	1	5	1		1	2	1	2	3	3	2					1(10)		QFN36
	GD32F170C4T6	48	16K	4K	up to 39	1	4	1		1	2	1	1	1	1	2					1(10)		LQFP48
	GD32F170C6T6	48	32K	4K	up to 39	1	4	1		1	2	1	2	1	1	2					1(10)		LQFP48
	GD32F170C8T6	48	64K	8K	up to 39	1	5	1		1	2	1	2	3	3	2					1(10)		LQFP48
	GD32F170R8T6	48	64K	8K	up to 55	1	5	1		1	2	1	2	3	3	2					1(16)		LQFP64
GD32F190	GD32F190T4U6	72	16K	4K	up to 28	1	5	1	1	1	2	1	1	1	1	2	1		2	2	1(10)	2	QFN36
	GD32F190T6U6	72	32K	6K	up to 28	1	5	1	1	1	2	1	2	1	1	2	1		2	2	1(10)	2	QFN36
	GD32F190T8U6	72	64K	8K	up to 28	1	5	1	1	1	2	1	2	3	3	2	2		2	2	1(10)	2	QFN36
	GD32F190C4T6	72	16K	4K	up to 39	1	5	1	1	1	2	1	1	1	1	2	1	4x18	2	2	1(10)	2	LQFP48
	GD32F190C6T6	72	32K	6K	up to 39	1	5	1	1	1	2	1	2	1	1	2	1	4x18	2	2	1(10)	2	LQFP48
	GD32F190C8T6	72	64K	8K	up to 39	1	5	1	1	1	2	1	2	3	3	2	2	4x18	2	2	1(10)	2	LQFP48
	GD32F190R4T6	72	16K	4K	up to 55	1	5	1	1	1	2	1	1	1	1	2	1	8x32	3	2	1(16)	2	LQFP64
	GD32F190R6T6	72	32K	6K	up to 55	1	5	1	1	1	2	1	2	1	1	2	1	8x32	3	2	1(16)	2	LQFP64
	GD32F190R8T6	72	64K	8K	up to 55	1	5	1	1	1	2	1	2	3	3	2	2	8x32	3	2	1(16)	2	LQFP64

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Series	Part No.	Max Speed (MHz)	Memory (Bytes)		I/O	Timer						Connectivity								EXMC	Analog Interface		Package
			Flash	SRAM		GPTM (16bit)	Advanced TM (16bit)	Basic TM (16bit)	SysTick (24bit)	WDG	RTC	USART (UART)	I²C	SPI	CAN 2.0B	USB 2.0 FS	I²S	SDIO	Ether-net		12bit ADC Units (CHs)	12bit DAC Units	
GD32F103	GD32F103T4U6	108	16K	6K	up to 26	2	1		1	2	1	2	1	1	1	1					2(10)		QFN36
	GD32F103T6U6	108	32K	10K	up to 26	2	1		1	2	1	2	1	1	1	1					2(10)		QFN36
	GD32F103T8U6	108	64K	20K	up to 26	3	1		1	2	1	2	1	1	1	1					2(10)		QFN36
	GD32F103TBU6	108	128K	20K	up to 26	3	1		1	2	1	2	1	1	1	1					2(10)		QFN36
	GD32F103C4T6	108	16K	6K	up to 37	2	1		1	2	1	2	1	1	1	1					2(10)		LQFP48
	GD32F103C6T6	108	32K	10K	up to 37	2	1		1	2	1	2	1	1	1	1					2(10)		LQFP48
	GD32F103C8T6	108	64K	20K	up to 37	3	1		1	2	1	3	2	2	1	1					2(10)		LQFP48
	GD32F103CBT6	108	128K	20K	up to 37	3	1		1	2	1	3	2	2	1	1					2(10)		LQFP48
	GD32F103R4T6	108	16K	6K	up to 51	2	1		1	2	1	2	1	1	1	1					2(16)		LQFP64
	GD32F103R6T6	108	32K	10K	up to 51	2	1		1	2	1	2	1	1	1	1					2(16)		LQFP64
	GD32F103R8T6	108	64K	20K	up to 51	3	1		1	2	1	3	2	2	1	1					2(16)		LQFP64
	GD32F103RBT6	108	128K	20K	up to 51	3	1		1	2	1	3	2	2	1	1					2(16)		LQFP64
	GD32F103RCT6	108	256K	48K	up to 51	4	2	2	1	2	1	5	2	3	1	1	2	1			3(16)	2	LQFP64
	GD32F103RDT6	108	384K	64K	up to 51	4	2	2	1	2	1	5	2	3	1	1	2	1			3(16)	2	LQFP64
	GD32F103RET6	108	512K	64K	up to 51	4	2	2	1	2	1	5	2	3	1	1	2	1			3(16)	2	LQFP64
	GD32F103RFT6	108	768K	96K	up to 51	10	2	2	1	2	1	5	2	3	1	1	2	1			3(16)	2	LQFP64
	GD32F103RGT6	108	1024K	96K	up to 51	10	2	2	1	2	1	5	2	3	1	1	2	1			3(16)	2	LQFP64
	GD32F103RIT6	108	2048K	96K	up to 51	10	2	2	1	2	1	5	2	3	1	1	2	1			3(16)	2	LQFP64
	GD32F103RKT6	108	3072K	96K	up to 51	10	2	2	1	2	1	5	2	3	1	1	2	1			3(16)	2	LQFP64
	GD32F103V8T6	108	64K	20K	up to 80	3	1		1	2	1	3	2	2	1	1				•	2(16)		LQFP100
	GD32F103VBT6	108	128K	20K	up to 80	3	1		1	2	1	3	2	2	1	1				•	2(16)		LQFP100
	GD32F103VCT6	108	256K	48K	up to 80	4	2	2	1	2	1	5	2	3	1	1	2	1		•	3(16)	2	LQFP100
	GD32F103VDT6	108	384K	64K	up to 80	4	2	2	1	2	1	5	2	3	1	1	2	1		•	3(16)	2	LQFP100
	GD32F103VET6	108	512K	64K	up to 80	4	2	2	1	2	1	5	2	3	1	1	2	1		•	3(16)	2	LQFP100
	GD32F103VFT6	108	768K	96K	up to 80	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(16)	2	LQFP100
	GD32F103VGT6	108	1024K	96K	up to 80	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(16)	2	LQFP100
	GD32F103VIT6	108	2048K	96K	up to 80	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(16)	2	LQFP100
	GD32F103VKT6	108	3072K	96K	up to 80	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(16)	2	LQFP100
	GD32F103ZCT6	108	256K	48K	up to 112	4	2	2	1	2	1	5	2	3	1	1	2	1		•	3(21)	2	LQFP144
	GD32F103ZDT6	108	384K	64K	up to 112	4	2	2	1	2	1	5	2	3	1	1	2	1		•	3(21)	2	LQFP144
	GD32F103ZET6	108	512K	64K	up to 112	4	2	2	1	2	1	5	2	3	1	1	2	1		•	3(21)	2	LQFP144
	GD32F103ZFT6	108	768K	96K	up to 112	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(21)	2	LQFP144
	GD32F103ZGT6	108	1024K	96K	up to 112	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(21)	2	LQFP144
	GD32F103ZIT6	108	2048K	96K	up to 112	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(21)	2	LQFP144
	GD32F103ZKT6	108	3072K	96K	up to 112	10	2	2	1	2	1	5	2	3	1	1	2	1		•	3(21)	2	LQFP144

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GD32F1 series of 32-bit ARM® Cortex®-M3 MCUs Selection Guide

Series	Part No.	Max Speed (MHz)	Memory (Bytes)		I/O	Timer						Connectivity								EXMC	Analog Interface		Package
			Flash	SRAM		GPTM (16bit)	Advanced TM (16bit)	Basic TM (16bit)	SysTick (24bit)	WDG	RTC	USART (UART)	I²C	SPI	CAN 2.0B	USB 2.0 FS	I²S	SDIO	Ether-net		12bit ADC Units (CHs)	12bit DAC Units	
GD32F105	GD32F105R8T6	108	64K	64K	up to 51	4	1	2	1	2	1	5	2	3	2	OTG	2				2(16)	2	LQFP64
	GD32F105RBT6	108	128K	64K	up to 51	4	1	2	1	2	1	5	2	3	2	OTG	2				2(16)	2	LQFP64
	GD32F105RCT6	108	256K	96K	up to 51	4	1	2	1	2	1	5	2	3	2	OTG	2				2(16)	2	LQFP64
	GD32F105RDT6	108	384K	96K	up to 51	4	2	2	1	2	1	5	2	3	2	OTG	2				3(16)	2	LQFP64
	GD32F105RET6	108	512K	96K	up to 51	4	2	2	1	2	1	5	2	3	2	OTG	2				3(16)	2	LQFP64
	GD32F105RFT6	108	768K	96K	up to 51	10	2	2	1	2	1	5	2	3	2	OTG	2				3(16)	2	LQFP64
	GD32F105RGT6	108	1024K	96K	up to 51	10	2	2	1	2	1	5	2	3	2	OTG	2				3(16)	2	LQFP64
	GD32F105V8T6	108	64K	64K	up to 80	4	1	2	1	2	1	5	2	3	2	OTG	2			•	2(16)	2	LQFP100
	GD32F105VBT6	108	128K	64K	up to 80	4	1	2	1	2	1	5	2	3	2	OTG	2			•	2(16)	2	LQFP100
	GD32F105VCT6	108	256K	96K	up to 80	4	1	2	1	2	1	5	2	3	2	OTG	2			•	2(16)	2	LQFP100
	GD32F105VDT6	108	384K	96K	up to 80	4	2	2	1	2	1	5	2	3	2	OTG	2			•	3(16)	2	LQFP100
	GD32F105VET6	108	512K	96K	up to 80	4	2	2	1	2	1	5	2	3	2	OTG	2			•	3(16)	2	LQFP100
	GD32F105VFT6	108	768K	96K	up to 80	10	2	2	1	2	1	5	2	3	2	OTG	2			•	3(16)	2	LQFP100
	GD32F105VGT6	108	1024K	96K	up to 80	10	2	2	1	2	1	5	2	3	2	OTG	2			•	3(16)	2	LQFP100
	GD32F105ZCT6	108	256K	96K	up to 112	4	2	2	1	2	1	5	2	3	2	OTG	2			•	3(21)	2	LQFP144
	GD32F105ZDT6	108	384K	96K	up to 112	4	2	2	1	2	1	5	2	3	2	OTG	2			•	3(21)	2	LQFP144
	GD32F105ZET6	108	512K	96K	up to 112	4	2	2	1	2	1	5	2	3	2	OTG	2			•	3(21)	2	LQFP144
	GD32F105ZFT6	108	768K	96K	up to 112	10	2	2	1	2	1	5	2	3	2	OTG	2			•	3(21)	2	LQFP144
	GD32F105ZGT6	108	1024K	96K	up to 112	10	2	2	1	2	1	5	2	3	2	OTG	2			•	3(21)	2	LQFP144
GD32F107	GD32F107RBT6	108	128K	96K	up to 51	4	1	2	1	2	1	5	1	3	2	OTG	2		•		2(16)	2	LQFP64
	GD32F107RCT6	108	256K	96K	up to 51	4	1	2	1	2	1	5	1	3	2	OTG	2		•		2(16)	2	LQFP64
	GD32F107RDT6	108	384K	96K	up to 51	4	2	2	1	2	1	5	2	3	2	OTG	2		•		3(16)	2	LQFP64
	GD32F107RET6	108	512K	96K	up to 51	4	2	2	1	2	1	5	2	3	2	OTG	2		•		3(16)	2	LQFP64
	GD32F107RFT6	108	768K	96K	up to 51	10	2	2	1	2	1	5	2	3	2	OTG	2		•		3(16)	2	LQFP64
	GD32F107RGT6	108	1024K	96K	up to 51	10	2	2	1	2	1	5	2	3	2	OTG	2		•		3(16)	2	LQFP64
	GD32F107VBT6	108	128K	96K	up to 80	4	1	2	1	2	1	5	1	3	2	OTG	2		•	•	2(16)	2	LQFP100
	GD32F107VCT6	108	256K	96K	up to 80	4	1	2	1	2	1	5	1	3	2	OTG	2		•	•	2(16)	2	LQFP100
	GD32F107VDT6	108	384K	96K	up to 80	4	2	2	1	2	1	5	2	3	2	OTG	2		•	•	3(16)	2	LQFP100
	GD32F107VET6	108	512K	96K	up to 80	4	2	2	1	2	1	5	2	3	2	OTG	2		•	•	3(16)	2	LQFP100
	GD32F107VFT6	108	768K	96K	up to 80	10	2	2	1	2	1	5	2	3	2	OTG	2		•	•	3(16)	2	LQFP100
	GD32F107VGT6	108	1024K	96K	up to 80	10	2	2	1	2	1	5	2	3	2	OTG	2		•	•	3(16)	2	LQFP100
	GD32F107ZCT6	108	256K	96K	up to 112	4	2	2	1	2	1	5	2	3	2	OTG	2		•	•	3(21)	2	LQFP144
	GD32F107ZDT6	108	384K	96K	up to 112	4	2	2	1	2	1	5	2	3	2	OTG	2		•	•	3(21)	2	LQFP144
	GD32F107ZET6	108	512K	96K	up to 112	4	2	2	1	2	1	5	2	3	2	OTG	2		•	•	3(21)	2	LQFP144
	GD32F107ZFT6	108	768K	96K	up to 112	10	2	2	1	2	1	5	2	3	2	OTG	2		•	•	3(21)	2	LQFP144
	GD32F107ZGT6	108	1024K	96K	up to 112	10	2	2	1	2	1	5	2	3	2	OTG	2		•	•	3(21)	2	LQFP144

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GD32F1 series of 32-bit ARM® Cortex®-M3 MCUs Selection Guide

Series	Part No.	Max Speed (MHz)	Memory (Bytes)		I/O	Timer						Connectivity								EXMC	Analog Interface		Package
			Flash	SRAM		GPTM (16bit)	Advanced TM (16bit)	Basic TM (16bit)	SysTick (24bit)	WDG	RTC	USART (UART)	I²C	SPI	CAN 2.0B	USB 2.0 FS	I²S	SDIO	Ether-net		12bit ADC Units (CHs)	12bit DAC Units	
GD32F101	GD32F101T4U6	56	16K	4K	up to 26	2			1	2	1	2	1	1							1(10)		QFN36
	GD32F101T6U6	56	32K	6K	up to 26	2			1	2	1	2	1	1							1(10)		QFN36
	GD32F101T8U6	56	64K	10K	up to 26	3			1	2	1	2	1	1							1(10)		QFN36
	GD32F101TBU6	56	128K	16K	up to 26	3			1	2	1	2	1	1							1(10)		QFN36
	GD32F101C4T6	56	16K	4K	up to 37	2			1	2	1	2	1	1							1(10)		LQFP48
	GD32F101C6T6	56	32K	6K	up to 37	2			1	2	1	2	1	1							1(10)		LQFP48
	GD32F101C8T6	56	64K	10K	up to 37	3			1	2	1	3	2	2							1(10)		LQFP48
	GD32F101CBT6	56	128K	16K	up to 37	3			1	2	1	3	2	2							1(10)		LQFP48
	GD32F101R4T6	56	16K	4K	up to 51	2			1	2	1	2	1	1							1(16)		LQFP64
	GD32F101R6T6	56	32K	6K	up to 51	2			1	2	1	2	1	1							1(16)		LQFP64
	GD32F101R8T6	56	64K	10K	up to 51	3			1	2	1	3	2	2							1(16)		LQFP64
	GD32F101RBT6	56	128K	16K	up to 51	3			1	2	1	3	2	2							1(16)		LQFP64
	GD32F101RCT6	56	256K	32K	up to 51	4		2	1	2	1	5	2	3							1(16)	2	LQFP64
	GD32F101RDT6	56	384K	48K	up to 51	4		2	1	2	1	5	2	3							1(16)	2	LQFP64
	GD32F101RET6	56	512K	48K	up to 51	4		2	1	2	1	5	2	3							1(16)	2	LQFP64
	GD32F101RFT6	56	768K	80K	up to 51	10		2	1	2	1	5	2	3							2(16)	2	LQFP64
	GD32F101RGT6	56	1024K	80K	up to 51	10		2	1	2	1	5	2	3							2(16)	2	LQFP64
	GD32F101RIT6	56	2048K	80K	up to 51	10		2	1	2	1	5	2	3							2(16)	2	LQFP64
	GD32F101RKT6	56	3072K	80K	up to 51	10		2	1	2	1	5	2	3							2(16)	2	LQFP64
	GD32F101V8T6	56	64K	10K	up to 80	3			1	2	1	3	2	2						•	1(16)		LQFP100
	GD32F101VBT6	56	128K	16K	up to 80	3			1	2	1	3	2	2						•	1(16)		LQFP100
	GD32F101VCT6	56	256K	32K	up to 80	4		2	1	2	1	5	2	3						•	1(16)	2	LQFP100
	GD32F101VDT6	56	384K	48K	up to 80	4		2	1	2	1	5	2	3						•	1(16)	2	LQFP100
	GD32F101VET6	56	512K	48K	up to 80	4		2	1	2	1	5	2	3						•	1(16)	2	LQFP100
	GD32F101VFT6	56	768K	80K	up to 80	10		2	1	2	1	5	2	3						•	2(16)	2	LQFP100
	GD32F101VGT6	56	1024K	80K	up to 80	10		2	1	2	1	5	2	3						•	2(16)	2	LQFP100
	GD32F101VIT6	56	2048K	80K	up to 80	10		2	1	2	1	5	2	3						•	2(16)	2	LQFP100
	GD32F101VKT6	56	3072K	80K	up to 80	10		2	1	2	1	5	2	3						•	2(16)	2	LQFP100
	GD32F101ZCT6	56	256K	32K	up to 112	4		2	1	2	1	5	2	3						•	1(16)	2	LQFP144
	GD32F101ZDT6	56	384K	48K	up to 112	4		2	1	2	1	5	2	3						•	1(16)	2	LQFP144
	GD32F101ZET6	56	512K	48K	up to 112	4		2	1	2	1	5	2	3						•	1(16)	2	LQFP144
	GD32F101ZFT6	56	768K	80K	up to 112	10		2	1	2	1	5	2	3						•	2(16)	2	LQFP144
	GD32F101ZGT6	56	1024K	80K	up to 112	10		2	1	2	1	5	2	3						•	2(16)	2	LQFP144
	GD32F101ZIT6	56	2048K	80K	up to 112	10		2	1	2	1	5	2	3						•	2(16)	2	LQFP144
	GD32F101ZKT6	56	3072K	80K	up to 112	10		2	1	2	1	5	2	3						•	2(16)	2	LQFP144

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SPI NOR Flash

GD SPI NOR Flash Features

3.0V

- **Single Power Supply Voltage**
  - Voltage range: 2.7V~3.6V
- **High Speed Clock Frequency**
  - Maximum 120MHz for fast read with 30pF load*
  - Dual I/O Data transfer up to 240Mbits/s
  - Quad I/O Data transfer up to 480Mbits/s
  - Continuous Read With 8/16/32/64-Byte Wrap
- **Flexible Memory Architecture**
  - Sector Size: 4K Bytes
  - Block Size: 32/64K Bytes

2.5V

- **Single Power Supply Voltage**
  - Voltage range: 2.3V~3.6V
- **High Speed Clock Frequency**
  - Maximum 104MHz for fast read with 30pF load**
  - Dual I/O Data transfer up to 208Mbits/s
  - Quad I/O Data transfer up to 416Mbits/s
  - Continuous Read With 8/16/32/64-Byte Wrap
- **Flexible Memory Architecture**
  - Sector Size: 4K Bytes
  - Block Size: 32/64K Bytes

1.8V

- **Single Power Supply Voltage**
  - Voltage range: 1.65V~2.0V
- **High Speed Clock Frequency**
  - 120MHz for fast read with 30pF load***
  - Dual I/O Data transfer up to 240MHZ
  - Quad I/O Data transfer up to 480Mbits/s
  - QPI Data transfer up to 480Mbits/s
  - Continuous Read With 8/16/32/64-Byte Wrap
- **Flexible Memory Architecture**
  - Sector Size: 4K Bytes
  - Block Size: 32/64K Bytes

* This feature is available on most of devices. Please refer to page 12-13.
** This Feature is available on most of devices. Please refer to Page 12-13.
*** This Feature is available on most of devices. Please refer to Page 12-13.

GD SPI NOR Flash Example

GD | 25 | Q | 64 | C | S | I | G | Y

Company Prefix
GD: GigaDevice

Product Family
25: SPI Interface Flash

Series
Q/B/M: 3V, Quad I/O
VQ/VE/VH: 2.5V, Quad I/O
LQ/LE/LB/LH: 1.8V, Quad I/O
D: 3V, Dual I/O
VD: 2.5V, Dual I/O
LD: 1.8V, Dual I/O
R: 3V, RPMC
LT: 1.8V, Octal I/O
WD: 1.65~3.6V, Dual I/O
S: 3V, Stack Die, Quad I/O, QE=1

Density
512/05: 512Kb
10: 1Mb
20/21: 2Mb
40/41: 4Mb
80: 8Mb
16: 16Mb
32: 32Mb
64: 64Mb
127: 128Mb
128: 128Mb
256: 256Mb
257: 256Mb
512M: 512Mb
1G: 1Gb

Version
A or No mark: A Version
B: B Version
C: C Version
D: D Version
E: E Version
F: F Version

Package Type
D: RDL wafer
P: DIP8 300mil
F: SOP16 300mil
S: SOP8 208mil
T: SOP8 150mil
V: VSOP8 208mil
M: VSOP8 150mil
O: TSSOP8 173mil
L: WLCSP
I: LGA8 4*4mm
9: LGA8 6*8mm
8: LGA8 3*2mm
U: USON8 3*2mm (0.55mm thickness)
E: USON8 3*2mm (0.45mm thickness)
H: USON8 3*3mm
N: USON8 3*4mm
A: USON8 4*3mm
G: Normal wafer
J: USON8 4*4mm (0.55mm thickness)
Q: USON8 4*4mm (0.45mm thickness)
W: WSON8 6*5mm
Y: WSON8 8*6mm
Z: TFBGA-24ball 6*8mm (6*4 ball array)
B: TFBGA-24ball 6*8mm (5*5 ball array)

Temperature Range
M: Mobile (-40 ℃~+85 ℃)
C: Commercial (0 ℃~+70 ℃)
I: Industrial (-40 ℃~+85 ℃)
J: Industrial (-40 ℃~+105 ℃)
E: Industrial (-40 ℃~+125 ℃)
F: Industrial+ (-40 ℃~+85 ℃)
A: Automotive (-40 ℃~+125 ℃)
2: Automotive (-40 ℃~+105 ℃)
3: Automotive (-40 ℃~+85 ℃)

Special Options
G: Pb Free + Halogen Free Green Package
P: Pb Free Only Green
N: Normal Pb Package
S: Pb Free + Halogen Free Green Package + SRP1 function
Q: Pb Free + Halogen Free Green Package + 4 Byte Address Mode
D: Pb Free + Halogen Free Green Package + DTR function
R: Pb Free + Halogen Free Green Package + RESET# function

Packing Type
T or No mark : Tube
R : Tape&Reel
Y : Tray



GD SPI NOR Flash Feature list

Flash Type	3.0V											2.5V				1.65V~3.6V	1.8V									
Family	GD25Q				GD25B		GD25R			GD25D		GD25VQ		GD25VE	GD25VD	GD25WD	GD25LQ			GD25LB			GD25LH		GD25LE	GD25LD
Part No.	xx	x1B	xxB	xxC	xxB	xxC	xxB	xxC	xxD	xxB	xxC	x1B	xxC	xxC	xxB	xxC	xx/ xxB	xxC	xxD	xx	xxC	xxD	xx/ xxB	xxC	xxC/ xxD	xxC
Single I/O (1-1-1)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Dual Output (1-1-2)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Dual I/O (1-2-2)	•	•	•	•	•	•	•	•	•			•	•	•			•	•	•	•	•	•	•	•	•	
Quad Output (1-1-4)	•	•	•	•	•	•	•	•	•			•	•	•			•	•	•	•	•	•	•	•	•	
Quad I/O (1-4-4)	•	•	•	•	•	•	•	•	•			•	•	•			•	•	•	•	•	•	•	•	•	
QPI (4-4-4)																	•	•	•	•	•	•	•	•	•	
HOLD# Pin	•	•	•	•								•	•	•			•	•	•				•	•	•	
H/W Reset (RESET Pin)				•*									•*	•*												
S/W Reset				•		•		•	•				•	•			•	•	•	•	•	•	•	•	•	
H/W Write Protection (WP# Pin)	•	•	•	•						•	•	•	•	•	•	•	•	•	•				•	•	•	•
S/W Write Protection	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Enhanced Block Protection		•	•	•	•	•	•	•	•			•	•	•			•	•	•	•	•	•	•	•	•	
Volatile & Non-volatile Status Register Bits		•		•		•		•	•			•	•	•			•	•	•	•	•	•	•	•	•	
Output Driver Strength				•		•		•	•				•	•												
Security Regisrers with OTP locks		•	•	•		•		•	•			•	•	•			•	•	•	•	•	•	•	•	•	
SFDP Register				•	•	•	•	•	•				•	•			•	•	•	•	•	•	•	•	•	

* Only available in Q64, Q127, Q256, Q512M device.

GD SPI NOR Flash Product list

Part No.	Density	Voltage	Organization	I/O Bus	Frequency (MHz)	
GD25Q512MC	512Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25Q256C*	256Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25Q256D	256Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25B256D	256Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25R256D	256Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25B256C*	256Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25Q127C	128Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25B127D	128Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25R127D	128Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25Q64C	64Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25B64C	64Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25R64C	64Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25Q32C	32Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25B32C	32Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25Q16C	16Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25B16C	16Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25Q80C	8Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25Q40C	4Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25D40C	4Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual Output	100MHz(x1) 80MHz(x2)	
GD25Q20C	2Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25D20C	2Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual Output	100MHz(x1) 80MHz(x2)	
GD25D10B	1Mb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual Output	80MHz(x1, x2)	
GD25WD40C	4Mb	1.65V~3.6V	4KB / 32KB / 64KB	Single / Dual Output	100MHz(x1) 80MHz(x2)	
GD25WD20C	2Mb	1.65V~3.6V	4KB / 32KB / 64KB	Single / Dual Output	100MHz(x1) 80MHz(x2)	
GD25VD10B	1Mb	2.3V-3.6V	4KB / 32KB / 64KB	Single / Dual Output	80MHz(x1, x2)	
GD25D05B	512Kb	2.7V-3.6V	4KB / 32KB / 64KB	Single / Dual Output	80MHz(x1, x2)	
GD25VD05B	512Kb	2.3V-3.6V	4KB / 32KB / 64KB	Single / Dual Output	80MHz(x1, x2)	
GD25VQ64C	64Mb	2.3V-3.6V	4KB / 32KB / 64Kb	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25VQ32C	32Mb	2.3V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25VQ16C	16Mb	2.3V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25VQ80C	8Mb	2.3V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25VQ40C	4Mb	2.3V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25VQ20C	2Mb	2.3V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25VE64C	64Mb	2.1V-3.6V	4KB / 32KB / 64Kb	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25VE32C	32Mb	2.1V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25VE16C	16Mb	2.1V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25VE40C	4Mb	2.1V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25VE20C	2Mb	2.1V-3.6V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25LQ256D	256Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25LE256D	256Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25LQ128D	128Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25LE128D	128Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25LB128D	128Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25LQ64C	64Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual / Quad	133MHz(x1, x2, x4)	
GD25LE64C	64Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25LB64C	64Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual / Quad	133MHz(x1, x2, x4)	
GD25LQ32D	32Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25LE32D	32Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25LB32D	32Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25LQ16*	16Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25LQ16C	16Mb	1.65V-2.1V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25LE16C	16Mb	1.65V-2.1V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25LB16*	16Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25LB16C	16Mb	1.65V-2.1V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25LH16*	16Mb	1.65V-1.95V	4KB / 32KB / 64KB	Single / Dual / Quad	120MHz(x1, x2, x4)	
GD25LH16C	16Mb	1.65V-2.1V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25LQ80B	8Mb	1.65V-2.1V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25LH80B	8Mb	1.65V-1.95V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25LQ40B	4Mb	1.65V-2.1V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25LD40C	4Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual Output	40MHz(x1, x2)	
GD25LQ20B	2Mb	1.65V-2.1V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25LD20C	2Mb	1.65V-2.0V	4KB / 32KB / 64KB	Single / Dual Output	40MHz(x1, x2)	
GD25LQ10B	1Mb	1.65V-2.1V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	
GD25LQ05B	512Kb	1.65V-2.1V	4KB / 32KB / 64KB	Single / Dual / Quad	104MHz(x1, x2, x4)	

* Not recommended for new design.

Product Series

3V	2.5V	1.8V
Q: Quad I/O, General B: Quad I/O,QE=1 D: Dual Output R: Quad I/O,QE=1, For RPMC	VQ: Quad I/O, General VD: Dual Output VE: Quad I/O, For DPD	LQ: Quad I/O, General LB: Quad I/O,QE=1 LH: Quad I/O, For HDD LD: Dual Output LE: Quad I/O, For DPD

	Packages
	SOP16 300mil WSON8 8*6mm TFBGA-24ball 6*8mm (5*5ball array) TFBGA-24ball 6*8mm (6*4ball array)
	SOP16 300mil WSON8 8*6mm TFBGA-24ball 6*8mm (5*5ball array) TFBGA-24ball 6*8mm (6*4ball array)
	SOP16 300mil WSON8 8*6mm TFBGA-24ball 6*8mm (5*5ball array)
	SOP16 300mil WSON8 8*6mm TFBGA-24ball 6*8mm (5*5ball array)
	SOP16 300mil WSON8 8*6mm TFBGA-24ball 6*8mm (5*5ball array)
	SOP16 300mil WSON8 8*6mm TFBGA-24ball 6*8mm (5*5ball array)
	SOP8 208mil SOP16 300mil VSOP8 208mil DIP8 300mil WSON8 6*5mm WSON8 8*6mm TFBGA-24ball 6*8mm (6*4ball array)
	SOP8 208mil SOP16 300mil VSOP8 208mil DIP8 300mil WSON8 6*5mm WSON8 8*6mm TFBGA-24ball 6*8mm (6*4ball array)
	SOP8 208mil SOP16 300mil VSOP8 208mil DIP8 300mil WSON8 6*5mm WSON8 8*6mm TFBGA-24ball 6*8mm (6*4ball array)
	SOP8 208mil SOP16 300mil DIP8 300mil WSON8 6*5mm USON8 4*4mm (0.45mm) TFBGA-24ball 6*8mm (6*4ball array) TFBGA-24ball 6*8mm (5*5ball array)
	SOP8 208mil DIP8 300mil WSON8 6*5mm
	SOP8 208mil
	SOP8 150mil SOP8 208mil VSOP8 208mil DIP8 300mil WSON8 6*5mm USON8 3*3mm USON8 3*4mm USON8 4*4mm (0.45mm) TFBGA-24ball 6*8mm (5*5ball array) TFBGA-24ball 6*8mm (6*4ball array)
	SOP8 208mil DIP8 300mil WSON8 6*5mm
	SOP8 150mil SOP8 208mil VSOP8 208mil DIP8 300mil WSON8 6*5mm USON8 3*2mm (0.45mm) USON8 3*4mm USON8 4*4mm (0.55mm) TFBGA-24ball 6*8mm (6*4ball array)
	SOP8 208mil WSON8 6*5mm
	SOP8 150mil SOP8 208mil DIP8 300mil TSSOP8 173mil WSON8 6*5mm USON8 3*2mm (0.45mm) USON8 3*4mm USON8 4*4mm (0.45mm)
	SOP8 150mil SOP8 208mil VSOP8 150mil TSSOP8 173mil USON8 3*2mm (0.45mm) USON8 3*4mm
	SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 3*2mm (0.45mm)
	SOP8 150mil SOP8 208mil VSOP8 150mil TSSOP8 173mil USON8 3*2mm (0.45mm) USON8 3*4mm
	SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 3*2mm (0.45mm)
	SOP8 150mil TSSOP8 173mil USON8 3*2mm (0.55mm)
	SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 3*2mm (0.45mm)
	SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 3*2mm (0.45mm)
	SOP8 150mil TSSOP8 173mil USON8 3*2mm (0.55mm)
	SOP8 150mil TSSOP8 173mil USON8 3*2mm (0.55mm)
	SOP8 150mil TSSOP8 173mil USON8 3*2mm (0.55mm)
	SOP8 208mil SOP16 300mil DIP8 300mil WSON8 6*5mm USON8 4*4mm (0.45mm) TFBGA-24ball 6*8mm (6*4ball array)
	SOP8 150mil SOP8 208mil VSOP8 208mil DIP8 300mil WSON8 6*5mm USON8 3*3mm USON8 3*4mm TFBGA-24ball 6*8mm (5*5ball array) TFBGA-24ball 6*8mm (6*4ball array)
	SOP8 150mil SOP8 208mil VSOP8 208mil DIP8 300mil WSON8 6*5mm USON8 3*2mm (0.45mm) USON8 3*2mm (0.55mm) USON8 3*4mm USON8 4*4mm (0.45mm) TFBGA-24ball 6*8mm (5*5ball array) TFBGA-24ball 6*8mm (6*4ball array)
	SOP8 150mil SOP8 208mil DIP8 300mil USON8 3*2mm (0.45mm) USON8 3*4mm
	SOP8 150mil SOP8 208mil VSOP8 150mil TSSOP8 173mil USON8 3*2mm (0.45mm)
	SOP8 150mil SOP8 208mil VSOP8 150mil TSSOP8 173mil USON8 3*2mm (0.45mm)
	SOP8 208mil SOP16 300mil DIP8 300mil WSON8 6*5mm USON8 4*4mm(0.45mm) TFBGA-24ball 6*8mm (6*4ball array)
	SOP8 150mil SOP8 208mil VSOP8 208mil DIP8 300mil WSON8 6*5mm USON8 3*3mm USON8 3*4mm TFBGA-24ball 6*8mm (5*5ball array) TFBGA-24ball 6*8mm (6*4ball array)
	SOP8 150mil SOP8 208mil VSOP8 208mil DIP8 300mil WSON8 6*5mm USON8 3*2mm (0.45mm) USON8 3*2mm (0.55mm) USON8 3*4mm USON8 4*4mm (0.45mm) TFBGA-24ball 6*8mm (5*5ball array) TFBGA-24ball 6*8mm (6*4ball array)
	SOP8 150mil SOP8 208mil VSOP8 150mil TSSOP8 173mil USON8 3*2mm (0.45mm)
	SOP8 150mil SOP8 208mil VSOP8 150mil TSSOP8 173mil USON8 3*2mm (0.45mm)
	WSON8 6*5mm WSON8 8*6mm TFBGA-24ball 6*8mm (6*4ball array)
	WSON8 6*5mm WSON8 8*6mm TFBGA-24ball 6*8mm (6*4ball array)
	SOP8 208mil VSOP8 208mil WSON8 6*5mm WSON8 8*6mm LGA8 4*4mm
	SOP8 208mil VSOP8 208mil WSON8 6*5mm WSON8 8*6mm LGA8 4*4mm WLCSP
	SOP8 208mil VSOP8 208mil WSON8 6*5mm
	SOP8 208mil VSOP8 208mil WSON8 6*5mm USON8 4*4mm (0.45mm)
	SOP8 208mil VSOP8 208mil USON8 4*4mm (0.45mm) WLCSP
	SOP8 208mil VSOP8 208mil WSON8 6*5mm
	SOP8 208mil VSOP8 208mil WSON8 6*5mm USON8 3*4mm USON8 4*4mm (0.45mm)
	SOP8 208mil VSOP8 208mil WSON8 6*5mm USON8 3*4mm USON8 4*4mm (0.45mm) WLCSP
	SOP8 208mil VSOP8 208mil WSON8 6*5mm USON8 4*4mm (0.45mm)
	SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil WSON8 6*5mm USON8 3*3mm USON8 3*4mm USON8 4*4mm (0.45mm)
	SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil WSON8 6*5mm USON8 3*3mm USON8 3*4mm USON8 4*4mm (0.45mm) LGA8 3*2mm
	SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil WSON8 6*5mm USON8 3*3mm USON8 3*4mm USON8 4*4mm (0.45mm) WLCSP LGA8 3*2mm
	SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil WSON8 6*5mm USON8 3*4mm
	SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil WSON8 6*5mm USON8 3*3mm USON8 3*4mm USON8 4*4mm (0.45mm) LGA8 3*2mm
	SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil WSON8 6*5mm USON8 3*4mm
	SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil WSON8 6*5mm USON8 3*3mm USON8 3*4mm USON8 4*4mm (0.45mm) LGA8 3*2mm
	SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil TSSOP8 173mil WSON8 6*5mm USON8 2*3mm USON8 3*4mm USON8 4*4mm (0.45mm)
	SOP8 150mil SOP8 208mil VSOP8 150mil USOP8 208mil WSON8 6*5mm USON8 3*2mm (0.55mm) USON8 3*4mm
	SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil TSSOP8 173mil WSON8 6*5mm USON8 2*3mm USON8 3*4mm USON8 4*4mm (0.45mm)
	SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 3*2mm
	SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil TSSOP8 173mil WSON8 6*5mm USON8 3*2mm (0.45mm) USON8 3*2mm (0.55mm) USON8 3*4mm
	SOP8 150mil SOP8 208mil TSSOP8 173mil DIP8 300mil USON8 3*2mm
	SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil TSSOP8 173mil WSON8 6*5mm USON8 3*2mm (0.45mm) USON8 3*2mm (0.55mm) USON8 3*4mm
	SOP8 150mil SOP8 208mil VSOP8 150mil VSOP8 208mil TSSOP8 173mil WSON8 6*5mm USON8 3*2mm (0.45mm) USON8 3*2mm (0.55mm) USON8 3*4mm



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SPI NAND Flash

GD SPI NAND Flash Features

3.0V

- **Power Supply Voltage:** 2.7V~3.6V
- **High Speed Clock Frequency**
  - 120MHz for fast read with 30PF load
  - Quad I/O Data transfer up to 480Mbits/s
- **Flexible Memory Architecture**
  1Gbit & 2Gbit:
  - 2048-Byte page for read and program, spare area128-Byte
  - (128K + 8K)-Byte per block for erase

  4Gbit & 8Gbit:
  - 4096-Byte page for read and program, spare area 256-Byte
  - (256K + 16K)-Byte per block for erase
- **Enhanced Access Performance**
  - 2K-Byte cache for fast random read for 1G & 2G
  - 4K-Byte cache for fast random read for 4G & 8G
  - Cache read and cache program
- **Advanced Feature for NAND**
  - Internal ECC option
  - Internal data move by page with ECC
  - Promised good block0 with ECC

1.8V

- **Power Supply Voltage:** 1.7V~2.0V
- **High Speed Clock Frequency**
  - 120MHz for fast read with 30PF load
  - Quad I/O Data transfer up to 480Mbits/s
- **Flexible Memory Architecture**
  1Gbit & 2Gbit:
  - 2048-Byte page for read and program, spare area 128-Byte
  - (128K + 8K)-Byte per block for erase

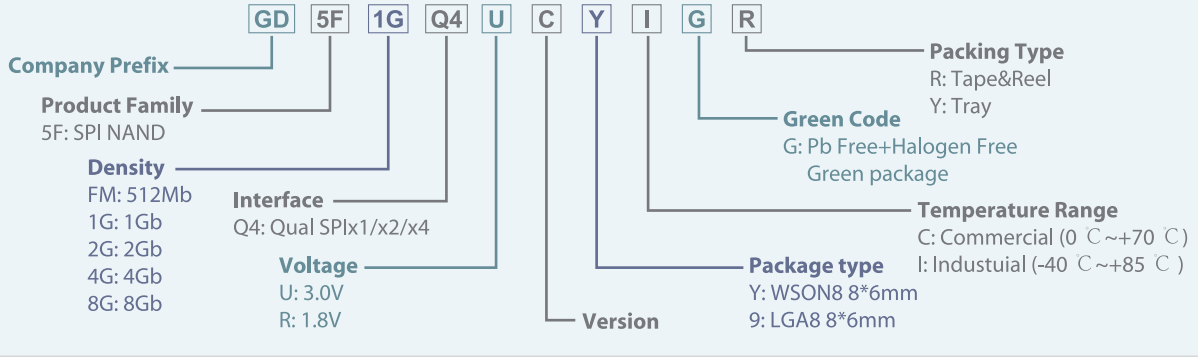
  4Gbit & 8Gbit:
  - 4096-Byte page for read and program, spare area 256-Byte
  - (256K + 16K)-Byte per block for erase
- **Enhanced Access Performance**
  - 2K-Byte cache for fast random read for 1G & 2G
  - 4K-Byte cache for fast random read for 4G & 8G
  - Cache read and cache program
- **Advanced Feature for NAND**
  - Internal ECC option
  - Internal data move by page with ECC
  - Promised good block0 with ECC

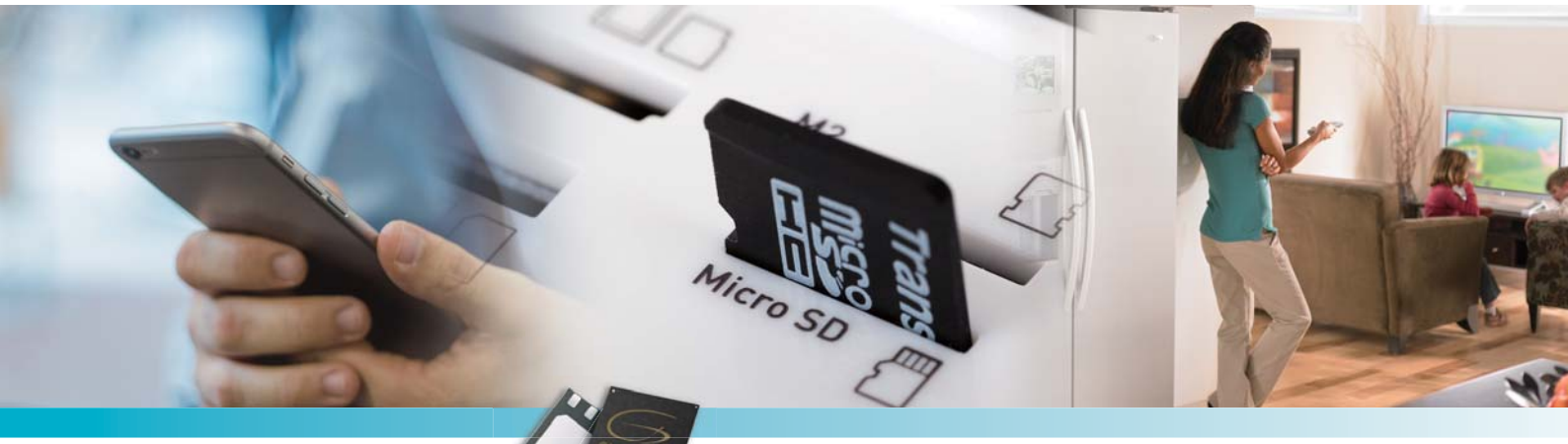
GD SPI NAND Flash Product List

Part No.	Density	Package
GD5F8GQ4U	8Gb	LGA8 8*6mm
GD5F4GQ4U	4Gb	WSON8/LGA8 8*6mm
GD5F2GQ4U	2Gb	WSON8/LGA8 8*6mm
GD5F1GQ4U	1Gb	WSON8 8*6mm

Part No.	Density	Package
GD5F8GQ4R	8Gb	LGA8 8*6mm
GD5F4GQ4R	4Gb	WSON8/LGA8 8*6mm
GD5F2GQ4R	2Gb	WSON8/LGA8 8*6mm
GD5F1GQ4R	1Gb	WSON8/LGA8 8*6mm

GD SPI NAND Flash Example

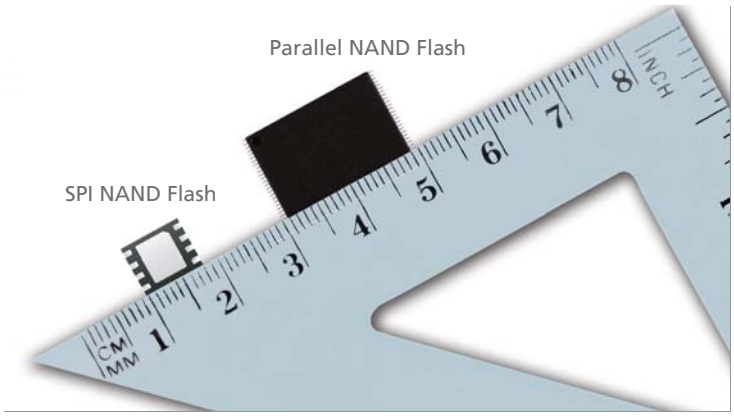






Advantages – Small Size

Reduce
Package cost



Advantages – Less Pin

8



SPI NAND Flash

27/48



Parallel NAND Flash

Reduce
Core Chip Cost ▶

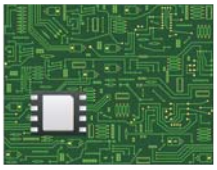
Fewer pins required by SPI NAND reduces the Core Chip pin count.

Advantages – PCB cost

Reduced pin count Core Chip and small SPI NAND Flash chip result in smaller PCB area and cost reduction.

Reduce PCB Cost ▲

SPI NAND Flash



Parallel NAND Flash

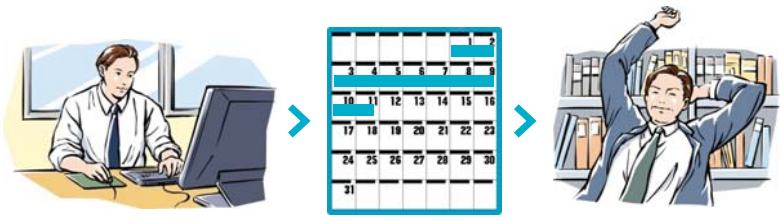


Advantages – Design

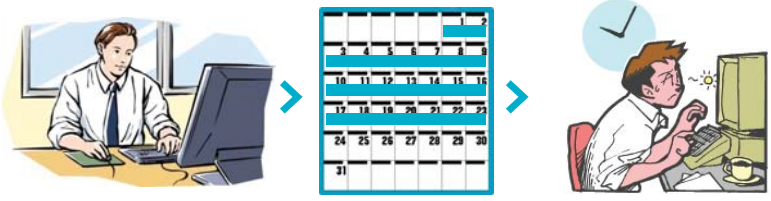
Reduce
PCB difficulty
Cut down
design cycles ▼

Less pins than Parallel NAND Flash, help make it easier for layout, reduce PCB design difficulty, Cut down design cycles of electronic products.

Design based on SPI NAND Flash



Design based on Parallel NAND Flash



Flash Package Options

Unit: mm

		SOP8 150mil	
T		Length(Normal)	4.90
		Width(Normal)	6.00
		Thickness(Max)	1.75
		Pitch(Normal)	1.27

		SOP8 208mil	
S		Length(Normal)	5.23
		Width(Normal)	7.90
		Thickness(Max)	2.16
		Pitch(Normal)	1.27

		VSOP8 150mil	
M		Length(Normal)	4.90
		Width(Normal)	6.00
		Thickness(Max)	0.90
		Pitch(Normal)	1.27

		VSOP8 208mil	
V		Length(Normal)	5.28
		Width(Normal)	7.90
		Thickness(Max)	1.00
		Pitch(Normal)	1.27

		TSSOP8 173mil	
O		Length(Normal)	2.96
		Width(Normal)	6.40
		Thickness(Max)	1.20
		Pitch(Normal)	0.65

		SOP16 300mil	
F		Length(Normal)	10.30
		Width(Normal)	10.35
		Thickness(Max)	2.75
		Pitch(Normal)	1.27

		TSOP56 14*20	
C		Length(Normal)	14.00
		Width(Normal)	20.00
		Thickness(Max)	1.20
		Pitch(Normal)	0.50

		DIP8 300mil	
P		Length(Normal)	9.32
		Width(Normal)	7.94
		Thickness(Max)	3.50
		Pitch(Normal)	2.54

		TFBGA-24ball 6*8 (6*4ball array)	
Z		Length(Normal)	6.00
		Width(Normal)	8.00
		Thickness(Max)	1.20
		Pitch(Normal)	1.00

		TFBGA-24ball 6*8 (5*5ball array)	
B		Length(Normal)	6.00
		Width(Normal)	8.00
		Thickness(Max)	1.20
		Pitch(Normal)	1.00

		LGA8 3*2	
8		Length(Normal)	3.00
		Width(Normal)	2.00
		Thickness(Max)	0.50
		Pitch(Normal)	0.50

		USON8 3*2 (0.55mm)	
U		Length(Normal)	3.00
		Width(Normal)	2.00
		Thickness(Max)	0.60
		Pitch(Normal)	0.50

		USON8 3*2 (0.45mm)	
E		Length(Normal)	3.00
		Width(Normal)	2.00
		Thickness(Max)	0.50
		Pitch(Normal)	0.50

		USON8 3*3	
H		Length(Normal)	3.00
		Width(Normal)	3.00
		Thickness(Max)	0.60
		Pitch(Normal)	0.50

		USON8 3*4	
N		Length(Normal)	3.00
		Width(Normal)	4.00
		Thickness(Max)	0.60
		Pitch(Normal)	0.80

		USON8 4*3	
A		Length(Normal)	4.00
		Width(Normal)	3.00
		Thickness(Max)	0.60
		Pitch(Normal)	0.80

		USON8 4*4 (0.55mm)	
J		Length(Normal)	4.00
		Width(Normal)	4.00
		Thickness(Max)	0.60
		Pitch(Normal)	0.80

		USON8 4*4 (0.45mm)	
Q		Length(Normal)	4.00
		Width(Normal)	4.00
		Thickness(Max)	0.50
		Pitch(Normal)	0.80

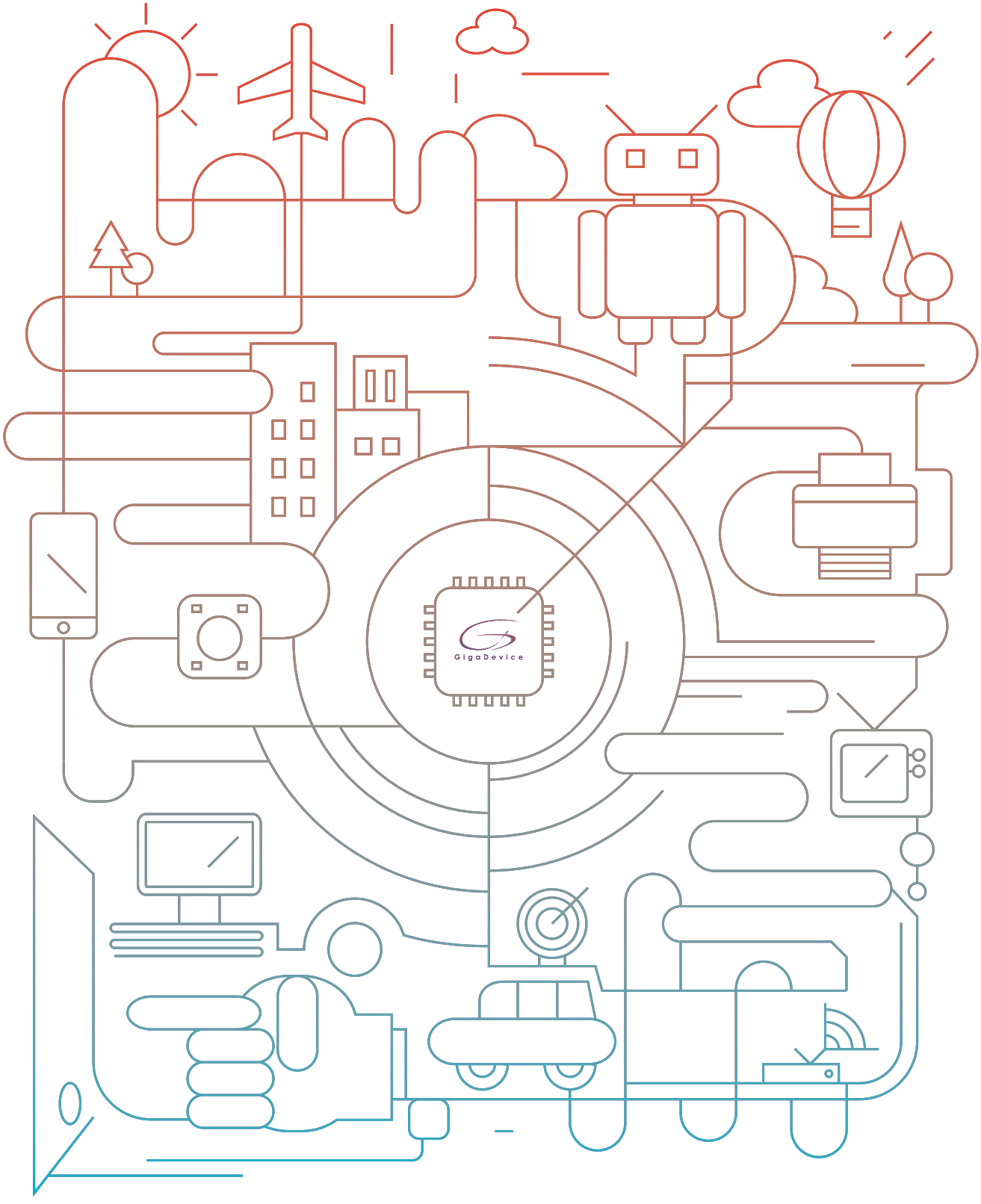
		WSON8 6*5	
W		Length(Normal)	6.00
		Width(Normal)	5.00
		Thickness(Max)	0.80
		Pitch(Normal)	1.27

		WSON8 8*6	
Y		Length(Normal)	8.00
		Width(Normal)	6.00
		Thickness(Max)	0.80
		Pitch(Normal)	1.27

		WLCSP
L		Depends on specific product

Note:

1. The values provided are the normal values for length, width and pitch, as well as the max values for thickness.
2. The pictures are for reference only, please subject to practicality.


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