

**Table 2-1. Hardware Features (100-MHz Devices)**

FEATURE		TYPE <sup>(1)</sup>	F2809	F2808	F2806	F2802	F2801	C2802	C2801
Instruction cycle (at 100 MHz)		–	10 ns	10 ns	10 ns	10 ns	10 ns	10 ns	10 ns
Single-access RAM (SARAM) (16-bit word)		–	18K (L0, L1, M0, M1, H0)	18K (L0, L1, M0, M1, H0)	10K (L0, L1, M0, M1)	6K (L0, M0, M1)	6K (L0, M0, M1)	6K (L0, M0, M1)	6K (L0, M0, M1)
3.3-V on-chip flash (16-bit word)		–	128K	64K	32K	32K	16K	–	–
On-chip ROM (16-bit word)		–	–	–	–	–	–	32K	16K
Code security for on-chip flash/SARAM/OTP blocks		–	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Boot ROM (4K x 16)		–	Yes	Yes	Yes	Yes	Yes	Yes	Yes
One-time programmable (OTP) ROM (16-bit word)		–	1K	1K	1K	1K	1K	–	–
PWM outputs		0	ePWM1/2/3/4/5/6	ePWM1/2/3/4/5/6	ePWM1/2/3/4/5/6	ePWM1/2/3	ePWM1/2/3	ePWM1/2/3	ePWM1/2/3
HRPWM channels		0	ePWM1A/2A/3A/ 4A/5A/6A	ePWM1A/2A/ 3A/4A	ePWM1A/2A/ 3A/4A	ePWM1A/2A/3A	ePWM1A/2A/3A	ePWM1A/2A/3A	ePWM1A/2A/3A
32-bit CAPTURE inputs or auxiliary PWM outputs		0	eCAP1/2/3/4	eCAP1/2/3/4	eCAP1/2/3/4	eCAP1/2	eCAP1/2	eCAP1/2	eCAP1/2
32-bit QEP channels (four inputs/channel)		0	eQEP1/2	eQEP1/2	eQEP1/2	eQEP1	eQEP1	eQEP1	eQEP1
Watchdog timer		–	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12-Bit, 16-channel ADC conversion time		1	80 ns	160 ns	160 ns	160 ns	160 ns	160 ns	160 ns
32-Bit CPU timers		–	3	3	3	3	3	3	3
Serial Peripheral Interface (SPI)		0	SPI-A/B/C/D	SPI-A/B/C/D	SPI-A/B/C/D	SPI-A/B	SPI-A/B	SPI-A/B	SPI-A/B
Serial Communications Interface (SCI)		0	SCI-A/B	SCI-A/B	SCI-A/B	SCI-A	SCI-A	SCI-A	SCI-A
Enhanced Controller Area Network (eCAN)		0	eCAN-A/B	eCAN-A/B	eCAN-A	eCAN-A	eCAN-A	eCAN-A	eCAN-A
Inter-Integrated Circuit (I2C)		0	I2C-A	I2C-A	I2C-A	I2C-A	I2C-A	I2C-A	I2C-A
Digital I/O pins (shared)		–	35	35	35	35	35	35	35
External interrupts		–	3	3	3	3	3	3	3
Supply voltage		1.8-V Core, 3.3-V I/O	–	Yes	Yes	Yes	Yes	Yes	Yes
Packaging		100-Pin PZ	–	Yes	Yes	Yes	Yes	Yes	Yes
		100-Ball GGM, ZGM	–	Yes	Yes	Yes	Yes	Yes	Yes
Temperature options		A: –40°C to 85°C	–	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)
		S: –40°C to 125°C	–	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)
		Q: –40°C to 125°C	–	(PZ)	(PZ)	(PZ)	(PZ)	(PZ)	(PZ)
Product status <sup>(2)</sup>		–	TMS	TMS	TMS	TMS	TMS	TMS	TMS

(1) A type change represents a major functional feature difference in a peripheral module. Within a peripheral type, there may be minor differences between devices that do not affect the basic functionality of the module. These device-specific differences are listed in the *TMS320x28xx, 28xxx DSP Peripheral Reference Guide* (literature number [SPRU566](#)) and in the peripheral reference guides.

(2) See [Section 5.1](#), Device and Development Support Tool Nomenclature, for descriptions of device stages.

**Table 2-2. Hardware Features (60-MHz Devices)**

FEATURE		TYPE <sup>(1)</sup>	F2802-60	F2801-60	F28016	F28015
Instruction cycle (at 60 MHz)		–	16.67 ns	16.67 ns	16.67 ns	16.67 ns
Single-access RAM (SARAM) (16-bit word)		–	6K (L0, M0, M1)	6K (L0, M0, M1)	6K (L0, M0, M1)	6K (L0, M0, M1)
3.3-V on-chip flash (16-bit word)		–	32K	16K	16K	16K
On-chip ROM (16-bit word)		–	–	–	–	–
Code security for on-chip flash/SARAM/OTP blocks		–	Yes	Yes	Yes	Yes
Boot ROM (4K x 16)		–	Yes	Yes	Yes	Yes
One-time programmable (OTP) ROM (16-bit word)		–	1K	1K	1K	1K
PWM outputs		0	ePWM1/2/3	ePWM1/2/3	ePWM1/2/3/4	ePWM1/2/3/4
HRPWM channels		0	ePWM1A/2A/3A	ePWM1A/2A/3A	ePWM1A/2A/3A/4A	ePWM1A/2A/3A/4A
32-bit CAPTURE inputs or auxiliary PWM outputs		0	eCAP1/2	eCAP1/2	eCAP1/2	eCAP1/2
32-bit QEP channels (four inputs/channel)		0	eQEP1	eQEP1	–	–
Watchdog timer		–	Yes	Yes	Yes	Yes
12-Bit ADC	No. of channels	1	16	16	16	16
	MSPS		3.75	3.75	3.75	3.75
	Conversion time		267 ns	267 ns	267 ns	267 ns
32-Bit CPU timers		–	3	3	3	3
Serial Peripheral Interface (SPI)		0	SPI-A/B	SPI-A/B	SPI-A	SPI-A
Serial Communications Interface (SCI)		0	SCI-A	SCI-A	SCI-A	SCI-A
Enhanced Controller Area Network (eCAN)		0	eCAN-A	eCAN-A	eCAN-A	–
Inter-Integrated Circuit (I2C)		0	I2C-A	I2C-A	I2C-A	I2C-A
Digital I/O pins (shared)		–	35	35	35	35
External interrupts		–	3	3	3	3
Supply voltage		–	1.8-V Core, 3.3-V I/O	1.8-V Core, 3.3-V I/O	1.8-V Core, 3.3-V I/O	1.8-V Core, 3.3-V I/O
Packaging	100-Pin PZ	–	Yes	Yes	Yes	Yes
	100-Ball GGM, ZGM	–	Yes	Yes	Yes	Yes
Temperature options	A: –40°C to 85°C	–	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)
	S: –40°C to 125°C	–	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)	(PZ, GGM, ZGM)
	Q: –40°C to 125°C	–	(PZ)	(PZ)	(PZ)	(PZ)
Product status <sup>(2)</sup>		–	TMS	TMS	TMS	TMS

(1) A type change represents a major functional feature difference in a peripheral module. Within a peripheral type, there may be minor differences between devices that do not affect the basic functionality of the module. These device-specific differences are listed in the *TMS320x28xx, 28xxx DSP Peripheral Reference Guide* (literature number [SPRU566](#)) and in the peripheral reference guides.

(2) See [Section 5.1](#), Device and Development Support Tool Nomenclature, for descriptions of device stages.