QP7C261 / QP7C263 / QP7C264

QP SEMICONDUCTOR

October 9, 2007

8K x 8 Power-Switched and Reprogrammable PROM

Features

- 5V ±10% VCC, commercial, industrial and military
- Windowed Packages available for reprogrammability
- OTP (One-Time-Programmable) Packages available
- High speed
  - 20 ns (commercial)
  - 25 ns (military)
- CMOS for optimum speed/power
- Slim 300-mil or standard 600-mil packaging available
- Direct replacement for Cypress PROMs
- Direct replacement for bipolar PROMs
- EPROM technology 100% programmable
- Low power
  - 660 mW (commercial and military)
- Super Low standby power
  - 220 mW (QP7C261)
- TTL-compatible I/O

General Description

The QP7C261, QP7C263, and QP7C264 are high-performance 8192-word by 8-bit CMOS PROMs. When deselected, the QP7C261 automatically powers down into a low-power standby mode. The QP7C263 and QP7C264 do not power down when deselected.

The QP7C261 is available in a 300-mil-wide DIP package. The QP7C263 and QP7C264 are packaged in 300-mil-wide DIP and 600-mil-wide DIP packages respectively. Flatpack, Cerpack, LCC, PLCC and LLCC package options are available.

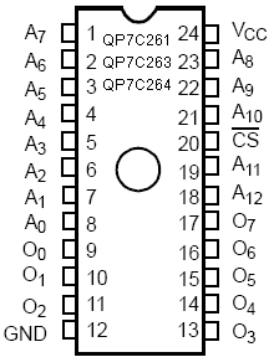
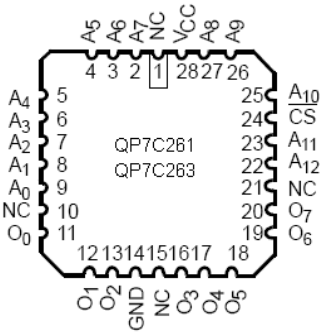
The memory cells utilize proven EPROM floating-gate technology and byte-wide intelligent programming algorithms. The QP7C261, QP7C263, and QP7C264 are plug-in replacements for Cypress PROMs and a wide variety of bipolar PROMs. When used to replace bipolar PROMs they offer the advantages of lower power, superior performance and programming yield.

The EPROM cell requires only 12.5V for the supervoltage and low current requirements allow for gang programming. The EPROM cells allow for each memory location to be tested 100%, as each location is written into, erased, and exercised prior to assembly. Each PROM is also tested for AC performance to guarantee that after customer programming the product will meet DC and AC specification limits.

A Read is accomplished by placing an active LOW signal on CS. The contents of the memory location addressed by the address lines (A0−A12) become available on the output lines (O0−O7).

The devices are available in windowed packages (Erasable when exposed to UV light) and are also available in non-windowed OTP (One-Time-Programmable) hermetic and plastic packages.

Connection Diagrams

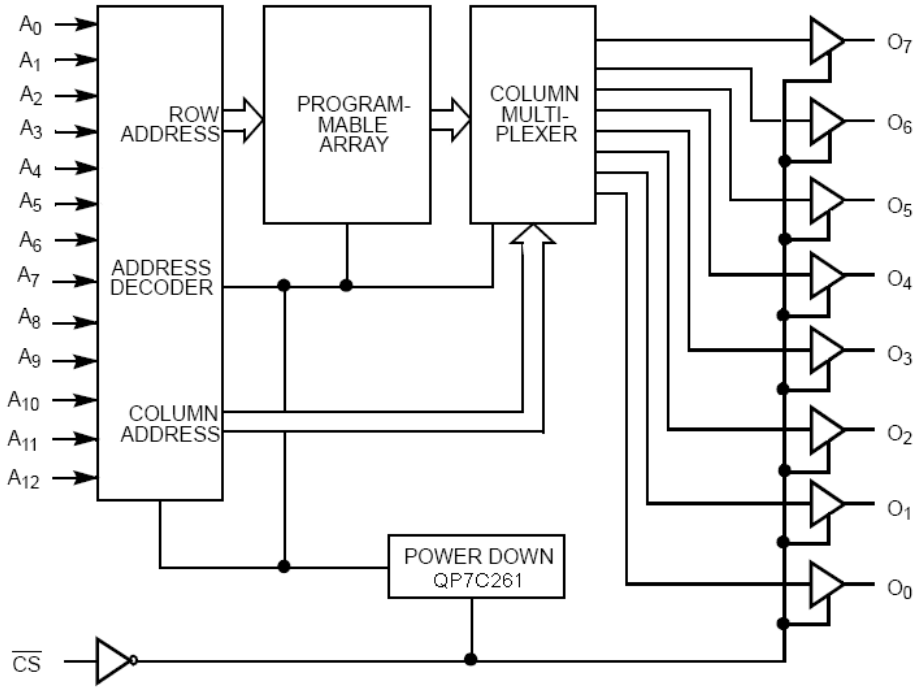
	CerDIP/PDIP/Cerpack 24 Lead	LLCC/LCC/PLCC
QP7C261 QP7C263 QP7C264 Hermetic Packages available in both Erasable (Windowed) and OTP – One-Time-Programmable (Non-Windowed) versions. Molded Plastic Packages (PDIP/PLCC) are only available as OTP (Non-Windowed).		

Block Diagram

QP7C261

QP7C263

QP7C264



Absolute Maximum Ratings

Stresses above the AMR may cause permanent damage, extended operation at AMR may degrade performance and affect reliability

Condition		Units	Notes
Supply Voltage to Ground	-0.5 to 7.0	Volts	/1
DC Voltage Applied to Outputs in High Z State	-0.5 to 7.0	Volts	/1
DC Input Voltage	-3.0V to 7.0	Volts	/1
DC Program Voltage	13.0	Volts	
UV Exposure	7258	W_{SEC}/cm^2	
Storage Temperature	-65 to +155	ºC	
Ambient Temperature with Power Applied	-55 to +125	ºC	/2
Junction Temperature	150	ºC	/3 /4

Recommended Operating Conditions

Condition		Units	Notes
Supply Voltage Range	4.5 to 5.5	Volts DC	5V ± 10%
Case Operating Range (T_c)	-0C to +70	ºC	Commercial
Case Operating Range (T_c)	-40C to +85	ºC	Industrial
Case Operating Range (T_c)	-55 to +125	ºC	Military

Notes:

Apply to Absolute Maximum, Recommended Operating Conditions and Electrical Performance Characteristics.

/1 – The Voltage on any input or I/O pin cannot exceed the power pin during power-up.

/2 – T_A is the "instant on" case temperature.

/3– Applies to all versions, but is critical for molded plastic products. Tj above listed limits can activate mold compound flame retardant.

/4 – Maximum T_J is not to be exceeded.

/5 – V_{CC} 4.5 to 5.5 Volts

/6 – For Test Purposes, not more than one output at a time should be shorted. Short circuit test duration should not exceed 30 seconds.

TABLE I – ELECTRICAL PERFORMANCE CHARACTERISTICS

Test	Symbol	Conditions /5 Case Operating Range (ºC)	Min	Max	Unit
Output Voltage High					
QP7C26x-20 & 25	V_{OH}	V_{CC}= 4.5V, I_{OH}=-2.0mA	2.4		V
QP7C26x-35, 45 & 55	V_{OH}	V_{CC}= 4.5V, I_{OH}=-4.0mA	2.4		V
Output Voltage Low					
QP7C26x-20 & 25	V_{OL}	V_{CC}= 4.5V, I_{OL}=8.0mA		0.4	V
QP7C26x-35, 45 & 55	V_{OL}	V_{CC}= 4.5V, I_{OL}=16.0mA		0.4	V
Input High Voltage	V_{IH}	Guaranteed Input logical High for all inputs	2.0	V_{CC}	V
Input Low Voltage	V_{IL}	Guaranteed Input logical Low for all inputs		0.8	V

TABLE I – ELECTRICAL PERFORMANCE CHARACTERISTICS

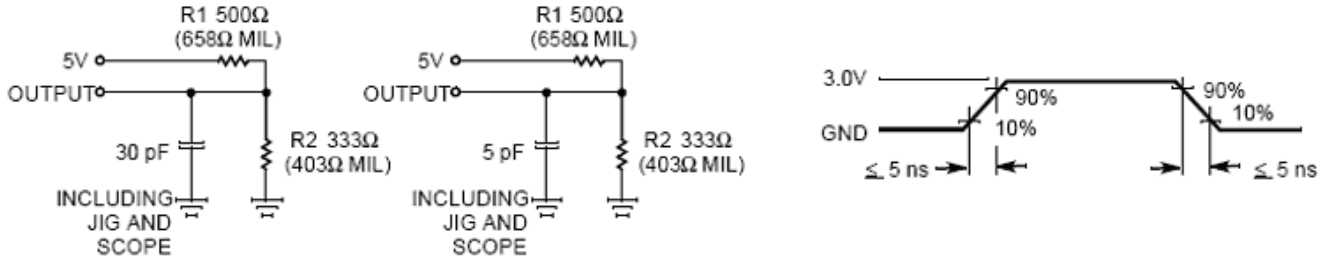
Test	Symbol	Conditions /5 Case Operating Range (ºC)	Min	Max	Unit
Input Load Current	I_{IX}	$GND \le V_{OUT} \le V_{CC}$	-10	10	µA
Output Leakage Current	I_{OZ}	$GND \le V_{IN} \le V_{CC}$ Com'l	-10	10	µA
		Output Disabled Mil	-40	40	µA
Output Short Circuit Current /6	I_{OS}	V_{CC}= 5.5V, V_{OUT}=GND	-20	-90	mA
Operating Supply Current	I_{CC}	V_{CC}= 5.5V, I_{OUT}=0 mA			
		20ns Commercial		120	mA
		25ns Commercial		120	mA
		35ns Commercial		100	mA
		45ns Commercial		100	mA
		55ns Commercial		100	mA
		25ns Military		140	mA
		35ns Military		120	mA
		45ns Military		120	mA
		55ns Military		120	mA
Standby Supply Current	I_{SB}	V_{CC}= 5.5V, I_{OUT}=0 mA			
QP7C261		20ns Commercial		40	mA
		25ns Commercial		40	mA
		35ns Commercial		30	mA
		45ns Commercial		30	mA
		55ns Commercial		30	mA
		25ns Military		40	mA
		35ns Military		30	mA
		45ns Military		30	mA
		55ns Military		30	mA
Programming Supply Voltage	V_{PP}		12	13	V
Programming Supply Current	I_{PP}			50	mA
Input High Programming Voltage	V_{IHP}		4.75		V
Input Low Programming Voltage	V_{ILP}			0.4	V
Input Capacitance	C_{IN}	T_A=25ºC, f=1MHz, V_{CC}=5.0V		10	pF
Output Capacitance	C_{OUT}	T_A=25ºC, f=1MHz, V_{CC}=5.0V		10	pF
Address to Output Valid	t_{AA}	QP7C26x-20		20	nS

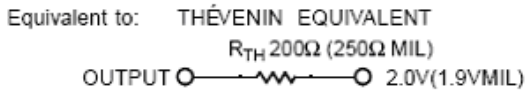
TABLE I – ELECTRICAL PERFORMANCE CHARACTERISTICS

Test	Symbol	Conditions /5 Case Operating Range (ºC)	Min	Max	Unit
		QP7C26x -25		25	nS
		QP7C26x -35		35	nS
		QP7C26x -45		45	nS
		QP7C26x -55		55	nS
Chip Select Inactive to High Z (QP7C263 and QP7C264)	T_{HZCS1}	QP7C26x -20		12	nS
		QP7C26x -25		12	nS
		QP7C26x -35		20	nS
		QP7C26x -45		30	nS
		QP7C26x -55		35	nS
Chip Select Inactive to High Z (QP7C261)	T_{HZCS2}	QP7C261-20		20	nS
		QP7C261-25		25	nS
		QP7C261-35		35	nS
		QP7C261-45		45	nS
		QP7C261-55		55	nS
Chip Select Active to Output (QP7C263 and QP7C264)	T_{ACS1}	QP7C26x -20		12	nS
		QP7C26x -25		12	nS
		QP7C26x -35		20	nS
		QP7C26x -45		30	nS
		QP7C26x -55		35	nS
Chip Select Active to Output (QP7C261)	T_{ACS2}	QP7C261-20		20	nS
		QP7C261-25		25	nS
		QP7C26135		35	nS
		QP7C261-45		45	nS
		QP7C261-55		55	nS
Chip Select Active to Power-Up (QP7C261)	T_{PU}	QP7C261-All T_{AA}	0		nS
Chip Select Inactive to Power-Down (QP7C261)	T_{PU}	QP7C261-20		20	nS
		QP7C261-25		25	nS
		QP7C26135		35	nS
		QP7C261-45		45	nS
		QP7C261-55		55	nS

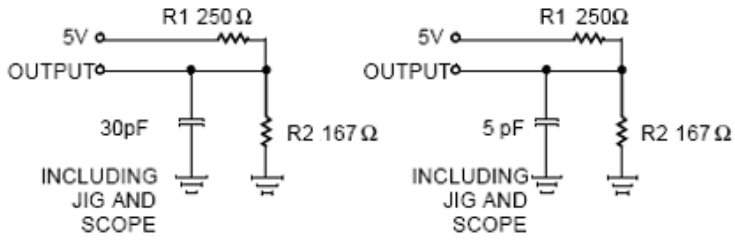
AC Test Loads

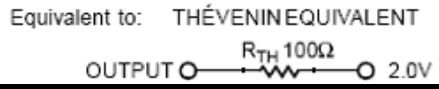
Test Load for -20 through -30 speeds



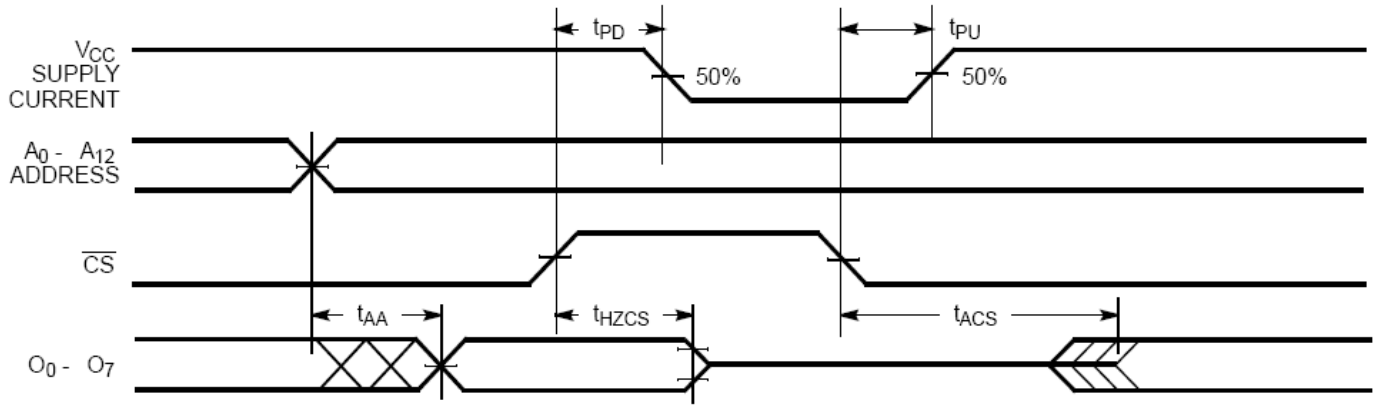


Test Load for -35 through -55 speeds





Waveforms



Operating Modes

Read

Read is the normal operating mode for programmed device. In this mode, all signals are normal TTL levels. The PROM is addressed with a 13-bit field, a chip select, (active LOW), is applied to the CS pin, and the contents of the addressed location appear on the data out pins.

Program, Program Inhibit, Program Verify

These modes are entered by placing a high voltage VPP on pin 19, with pins 18 and 20 set to VILP. In this state, pin 21 becomes a latch signal, allowing the upper 5 address bits to be latched into an onboard register, pin 22 becomes an active LOW program (PGM) signal and pin 23 becomes an active LOW verify (VFY) signal. Pins 22 and 23 should never be active LOW at the same time. The PROGRAM mode exists when PGM is LOW, and VFY is HIGH. The verify mode exists when the

reverse is true, PGM HIGH and VFY LOW and the program inhibit mode is entered with both PGM and VFY HIGH. Program inhibit is specifically provided to allow data to be placed on and removed from the data pins without conflict

Mode Selection	Pin Function /7 /8						
Read or Output Disable	A_{12}	A_{11}	A_{10}	A_9	A_8	CS_{BAR}	O_7-O_0
Program	na	V_{PP}	Latch	PGM	VFY	CS_{BAR}	D_7-D_0
Read	A_{12}	A_{11}	A_{10}	A_9	A_8	V_{IL}	O_7-O_0
Output Disable	A_{12}	A_{11}	A_{10}	A_9	A_8	V_{IH}	High Z
Program	V_{ILP}	V_{PP}	V_{ILP}	V_{ILP}	V_{IHP}	V_{ILP}	D_7-D_0
Program Inhibit	V_{ILP}	V_{PP}	V_{ILP}	V_{IHP}	V_{IHP}	V_{ILP}	High Z
Program Verify	V_{ILP}	V_{PP}	V_{ILP}	V_{IHP}	V_{ILP}	V_{ILP}	O_7-O_0
Blank Check Zeros	V_{ILP}	V_{PP}	V_{ILP}	V_{IHP}	V_{ILP}	V_{ILP}	O_7-O_0

/7 – X = "Don't Care", but not to exceed VCC +5%

/8 – Addresses A8-A12 must be latched through lines A0-A4 in programming modes

Erasure Characteristics:

Wavelengths of light less than 4000 Angstroms begin to erase these PROMs. For this reason, an opaque label should be placed over the window if the PROM is exposed to sunlight or fluorescent lighting for extended periods of time.

The recommended dose of ultraviolet light for erasure is a wavelength of 2537 Angstroms for a minimum dose (UV intensity x exposure time of 25 Wsec/cm2. For an ultraviolet lamp with a 12 mW/cm2 power rating, the exposure time would be approximately 35 minutes. These PROMs need to be within 1 inch of the lamp during erasure. Permanent damage may result if the PROM is exposed to high-intensity UV light for an extended period of time.

7258 Wsec/cm2 is the recommended maximum dosage.

Programming Information:

The QP7C261, QP7C263 and QP7C264 program using the same programming algorithm as Cypress 7C261, 7C263 and 7C264 devices. A variety of programming equipment currently supports the Cypress Algorithm. QP Semiconductor has verified that the devices program on Data I/O Unisite and on a programmer supplied by EETools.

Ordering Information

Temp Range	t_{AA} ns	Part Number	Package	Mil-Std-1835	Generic
Commercial	20	QP7C261-20JC	28-Lead PLCC		7C261
Commercial	20	QP7C261-20PC	24-Lead 300-mil Plastic DIP		7C261
Commercial	20	QP7C261-20WC	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Commercial	20	QP7C263-20JC	28-Lead PLCC		7C263
Commercial	20	QP7C263-20PC	24-Lead 300-mil Plastic DIP		7C263
Commercial	20	QP7C263-20WC	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Commercial	25	QP7C261-25JC	28-Lead PLCC		7C261
Commercial	25	QP7C261-25PC	24-Lead 300-mil Plastic DIP		7C261
Commercial	25	QP7C261-25WC	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Commercial	25	QP7C263-25JC	28-Lead PLCC		7C263
Commercial	25	QP7C263-25PC	24-Lead 300-mil Windowed CerDIP		7C263
Commercial	25	QP7C263-25WC	24-Lead 300-mil Plastic DIP	GDIP3-T24	7C263
Commercial	25	QP7C264-25PC	24-Lead 600-mil Plastic DIP		7C264
Commercial	25	QP7C264-25WC	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264

Temp Range	t_{AA} ns	Part Number	Package	Mil-Std-1835	Generic
Commercial	35	QP7C261-35JC	28-Lead PLCC		7C261
Commercial	35	QP7C261-35PC	24-Lead 300-mil Plastic DIP		7C261
Commercial	35	QP7C261-35WC	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Commercial	35	QP7C263-35JC	28-Lead PLCC		7C263
Commercial	35	QP7C263-35PC	24-Lead 300-mil Plastic DIP		7C263
Commercial	35	QP7C263-35WC	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Commercial	35	QP7C264-35PC	24-Lead 600-mil Plastic DIP		7C264
Commercial	35	QP7C264-35WC	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Commercial	45	QP7C261-45JC	28-Lead PLCC		7C261
Commercial	45	QP7C261-45PC	24-Lead 300-mil Plastic DIP		7C261
Commercial	45	QP7C261-45WC	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Commercial	45	QP7C263-45JC	28-Lead PLCC		7C263
Commercial	45	QP7C263-45PC	24-Lead 300-mil Plastic DIP		7C263
Commercial	45	QP7C263-45WC	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Commercial	45	QP7C264-45PC	24-Lead 600-mil Plastic DIP		7C264
Commercial	45	QP7C264-45WC	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Commercial	55	QP7C261-55JC	28-Lead PLCC		7C261
Commercial	55	QP7C261-55PC	24-Lead 300-mil Plastic DIP		7C261
Commercial	55	QP7C261-55WC	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Commercial	55	QP7C263-55JC	28-Lead PLCC		7C263
Commercial	55	QP7C263-55PC	24-Lead 300-mil Plastic DIP		7C263
Commercial	55	QP7C263-55WC	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Commercial	55	QP7C264-55PC	24-Lead 600-mil Plastic DIP		7C264
Commercial	55	QP7C264-55WC	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Industrial	20	QP7C261-20JI	28-Lead PLCC		7C261
Industrial	20	QP7C261-20PI	24-Lead 300-mil Plastic DIP		7C261
Industrial	20	QP7C261-20WI	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Industrial	20	QP7C263-20JI	28-Lead PLCC		7C263
Industrial	20	QP7C263-20PI	24-Lead 300-mil Plastic DIP		7C263
Industrial	20	QP7C263-20WI	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Industrial	25	QP7C261-25DI	24-Lead 300-mil CerDIP	GDIP3-T24	7C261
Industrial	25	QP7C261-25JI	28-Lead PLCC		7C261
Industrial	25	QP7C261-25KI	24-Lead Flatpack	GDFP2-F24	7C261
Industrial	25	QP7C261-25LI	28-Lead LCC	CQCC1-N28	7C261
Industrial	25	QP7C261-25PI	24-Lead 300-mil Plastic DIP		7C261
Industrial	25	QP7C261-25QI	28-Lead Windowed LCC	CQCC1-N28	7C261
Industrial	25	QP7C261-25TI	24-Lead Windowed Flatpack	GDFP2-F24	7C261
Industrial	25	QP7C261-25WI	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Industrial	25	QP7C263-25DI	24-Lead 300-mil CerDIP	GDIP3-T24	7C263
Industrial	25	QP7C263-25JI	28-Lead PLCC		7C263
Industrial	25	QP7C263-25KI	24-Lead Flatpack	GDFP2-F24	7C263
Industrial	25	QP7C263-25LI	28-Lead LCC	CQCC1-N28	7C263
Industrial	25	QP7C263-25PI	24-Lead 300-mil Windowed CerDIP		7C263
Industrial	25	QP7C263-25QI	28-Lead Windowed LCC	CQCC1-N28	7C263
Industrial	25	QP7C263-25TI	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Industrial	25	QP7C263-25WI	24-Lead 300-mil Plastic DIP	GDIP3-T24	7C263
Industrial	25	QP7C264-25DI	24-Lead 600-mil CerDIP	GDIP1-T24	7C264

Temp Range	t_{AA} ns	Part Number	Package	Mil-Std-1835	Generic
Industrial	25	QP7C264-25PI	24-Lead 600-mil Plastic DIP		7C264
Industrial	25	QP7C264-25WI	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Industrial	35	QP7C261-35DI	24-Lead 300-mil CerDIP	GDIP3-T24	7C261
Industrial	35	QP7C261-35JI	28-Lead PLCC		7C261
Industrial	35	QP7C261-35KI	24-Lead Flatpack	GDFP2-F24	7C261
Industrial	35	QP7C261-35LI	28-Lead LCC	CQCC1-N28	7C261
Industrial	35	QP7C261-35PI	24-Lead 300-mil Plastic DIP		7C261
Industrial	35	QP7C261-35QI	28-Lead Windowed LCC	CQCC1-N28	7C261
Industrial	35	QP7C261-35TI	24-Lead Windowed Flatpack	GDFP2-F24	7C261
Industrial	35	QP7C261-35WI	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Industrial	35	QP7C263-35DI	24-Lead 300-mil CerDIP	GDIP3-T24	7C263
Industrial	35	QP7C263-35JI	28-Lead PLCC		7C263
Industrial	35	QP7C263-35KI	24-Lead Flatpack	GDFP2-F24	7C263
Industrial	35	QP7C263-35LI	28-Lead LCC	CQCC1-N28	7C263
Industrial	35	QP7C263-35PI	24-Lead 300-mil Plastic DIP		7C263
Industrial	35	QP7C263-35QI	28-Lead Windowed LCC	CQCC1-N28	7C263
Industrial	35	QP7C263-35TI	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Industrial	35	QP7C263-35WI	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Industrial	35	QP7C264-35DI	24-Lead 600-mil CerDIP	GDIP1-T24	7C264
Industrial	35	QP7C264-35PI	24-Lead 600-mil Plastic DIP		7C264
Industrial	35	QP7C264-35WI	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Industrial	45	QP7C261-45DI	24-Lead 300-mil CerDIP	GDIP3-T24	7C261
Industrial	45	QP7C261-45JI	28-Lead PLCC		7C261
Industrial	45	QP7C261-45KI	24-Lead Flatpack	GDFP2-F24	7C261
Industrial	45	QP7C261-45LI	28-Lead LCC	CQCC1-N28	7C261
Industrial	45	QP7C261-45PI	24-Lead 300-mil Plastic DIP		7C261
Industrial	45	QP7C261-45QI	28-Lead Windowed LCC	CQCC1-N28	7C261
Industrial	45	QP7C261-45TI	24-Lead Windowed Flatpack	GDFP2-F24	7C261
Industrial	45	QP7C261-45WI	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Industrial	45	QP7C263-45DI	24-Lead 300-mil CerDIP	GDIP3-T24	7C263
Industrial	45	QP7C263-45JI	28-Lead PLCC		7C263
Industrial	45	QP7C263-45KI	24-Lead Flatpack	GDFP2-F24	7C263
Industrial	45	QP7C263-45LI	28-Lead LCC	CQCC1-N28	7C263
Industrial	45	QP7C263-45PI	24-Lead 300-mil Plastic DIP		7C263
Industrial	45	QP7C263-45QI	28-Lead Windowed LCC	CQCC1-N28	7C263
Industrial	45	QP7C263-45TI	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Industrial	45	QP7C263-45WI	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Industrial	45	QP7C264-45DI	24-Lead 600-mil CerDIP	GDIP1-T24	7C264
Industrial	45	QP7C264-45PI	24-Lead 600-mil Plastic DIP		7C264
Industrial	45	QP7C264-45WI	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Industrial	55	QP7C261-55DI	24-Lead 300-mil CerDIP	GDIP3-T24	7C261
Industrial	55	QP7C261-55JI	28-Lead PLCC		7C261
Industrial	55	QP7C261-55KI	24-Lead Flatpack	GDFP2-F24	7C261
Industrial	55	QP7C261-55LI	28-Lead LCC	CQCC1-N28	7C261
Industrial	55	QP7C261-55PI	24-Lead 300-mil Plastic DIP		7C261
Industrial	55	QP7C261-55QI	28-Lead Windowed LCC	CQCC1-N28	7C261
Industrial	55	QP7C261-55TI	24-Lead Windowed Flatpack	GDFP2-F24	7C261
Industrial	55	QP7C261-55WI	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Industrial	55	QP7C263-55DI	24-Lead 300-mil CerDIP	GDIP3-T24	7C263

Temp Range	t_{AA} ns	Part Number	Package	Mil-Std-1835	Generic
Industrial	55	QP7C263-55JI	28-Lead PLCC		7C263
Industrial	55	QP7C263-55KI	24-Lead Flatpack	GDFP2-F24	7C263
Industrial	55	QP7C263-55LI	28-Lead LCC	CQCC1-N28	7C263
Industrial	55	QP7C263-55PI	24-Lead 300-mil Plastic DIP		7C263
Industrial	55	QP7C263-55QI	28-Lead Windowed LCC	CQCC1-N28	7C263
Industrial	55	QP7C263-55TI	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Industrial	55	QP7C263-55WI	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Industrial	55	QP7C264-55DI	24-Lead 600-mil CerDIP	GDIP1-T24	7C264
Industrial	55	QP7C264-55PI	24-Lead 600-mil Plastic DIP		7C264
Industrial	55	QP7C264-55WI	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Military	25	5962-87515113A	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	25	5962-8751511JA	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Military	25	5962-8751511KA	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Military	25	5962-8751511LA	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Military	25	5962-87515123A	28-Lead Windowed LCC	CQCC1-N28	7C261
Military	25	5962-8751512KA	24-Lead Windowed Flatpack	GDFP2-F24	7C261
Military	25	5962-8751512LA	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Military	25	5962-9080304M3A	28-Lead LCC	CQCC1-N28	7C261
Military	25	5962-9080304MKA	24-Lead Flatpack	GDFP2-F24	7C261
Military	25	5962-9080304MLA	24-Lead 300-mil CerDIP	GDIP3-T24	7C261
Military	25	5962-9080308M3A	28-Lead LCC	CQCC1-N28	7C263
Military	25	5962-9080308MJA	24-Lead 600-mil CerDIP	GDIP1-T24	7C264
Military	25	5962-9080308MKA	24-Lead Flatpack	GDFP2-F24	7C263
Military	25	5962-9080308MLA	24-Lead 300-mil CerDIP	GDIP3-T24	7C263
Military	25	QP7C261-25DMB	24-Lead 300-mil CerDIP	GDIP3-T24	7C261
Military	25	QP7C261-25KMB	24-Lead Flatpack	GDFP2-F24	7C261
Military	25	QP7C261-25LMB	28-Lead LCC	CQCC1-N28	7C261
Military	25	QP7C261-25QMB	28-Lead Windowed LCC	CQCC1-N28	7C261
Military	25	QP7C261-25TMB	24-Lead Windowed Flatpack	GDFP2-F24	7C261
Military	25	QP7C261-25WMB	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Military	25	QP7C263-25DMB	24-Lead 300-mil CerDIP	GDIP3-T24	7C263
Military	25	QP7C263-25KMB	24-Lead Flatpack	GDFP2-F24	7C263
Military	25	QP7C263-25LMB	28-Lead LCC	CQCC1-N28	7C263
Military	25	QP7C263-25QMB	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	25	QP7C263-25TMB	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Military	25	QP7C263-25WMB	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Military	25	QP7C264-25DMB	24-Lead 600-mil CerDIP	GDIP1-T24	7C264
Military	25	QP7C264-25WMB	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Military	35	5962-87515073A	28-Lead Windowed LCC	CQCC1-N28	7C261
Military	35	5962-8751507KA	24-Lead Windowed Flatpack	GDFP2-F24	7C261
Military	35	5962-8751507LA	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Military	35	5962-87515083A	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	35	5962-8751508JA	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Military	35	5962-8751508KA	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Military	35	5962-8751508LA	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Military	35	5962-9080303M3A	28-Lead LCC	CQCC1-N28	7C261
Military	35	5962-9080303MKA	24-Lead Flatpack	GDFP2-F24	7C261
Military	35	5962-9080303MLA	24-Lead 300-mil CerDIP	GDIP3-T24	7C261
Military	35	5962-9080307M3A	28-Lead LCC	CQCC1-N28	7C263
Military	35	5962-9080307MJA	24-Lead 600-mil CerDIP	GDIP1-T24	7C264
Military	35	5962-9080307MKA	24-Lead Flatpack	GDFP2-F24	7C263

Temp Range	t_{AA} ns	Part Number	Package	Mil-Std-1835	Generic
Military	35	5962-9080307MLA	24-Lead 300-mil CerDIP	GDIP3-T24	7C263
Military	35	QP7C261-35DMB	24-Lead 300-mil CerDIP	GDIP3-T24	7C261
Military	35	QP7C261-35KMB	24-Lead Flatpack	GDFP2-F24	7C261
Military	35	QP7C261-35LMB	28-Lead LCC	CQCC1-N28	7C261
Military	35	QP7C261-35QMB	28-Lead Windowed LCC	CQCC1-N28	7C261
Military	35	QP7C261-35TMB	24-Lead Windowed Flatpack	GDFP2-F24	7C261
Military	35	QP7C261-35WMB	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Military	35	QP7C263-35DMB	24-Lead 300-mil CerDIP	GDIP3-T24	7C263
Military	35	QP7C263-35KMB	24-Lead Flatpack	GDFP2-F24	7C263
Military	35	QP7C263-35LMB	28-Lead LCC	CQCC1-N28	7C263
Military	35	QP7C263-35QMB	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	35	QP7C263-35TMB	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Military	35	QP7C263-35WMB	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Military	35	QP7C264-35DMB	24-Lead 600-mil CerDIP	GDIP1-T24	7C264
Military	35	QP7C264-35WMB	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Military	45	5962-87515013A	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	45	5962-87515013C	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	45	5962-8751501JA	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Military	45	5962-8751501KA	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Military	45	5962-8751501LA	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Military	45	5962-87515053A	28-Lead Windowed LCC	CQCC1-N28	7C261
Military	45	5962-8751505KA	24-Lead Windowed Flatpack	GDFP2-F24	7C261
Military	45	5962-8751505LA	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Military	45	5962-87515093A	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	45	5962-8751509JA	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Military	45	5962-8751509KA	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Military	45	5962-8751509LA	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Military	45	5962-9080302M3A	28-Lead LCC	CQCC1-N28	7C261
Military	45	5962-9080302MKA	24-Lead Flatpack	GDFP2-F24	7C261
Military	45	5962-9080302MLA	24-Lead 300-mil CerDIP	GDIP3-T24	7C261
Military	45	5962-9080306M3A	28-Lead LCC	CQCC1-N28	7C263
Military	45	5962-9080306MJA	24-Lead 600-mil CerDIP	GDIP1-T24	7C264
Military	45	5962-9080306MKA	24-Lead Flatpack	GDFP2-F24	7C263
Military	45	5962-9080306MLA	24-Lead 300-mil CerDIP	GDIP3-T24	7C263
Military	45	QP7C261-45DMB	24-Lead 300-mil CerDIP	GDIP3-T24	7C261
Military	45	QP7C261-45KMB	24-Lead Flatpack	GDFP2-F24	7C261
Military	45	QP7C261-45LMB	28-Lead LCC	CQCC1-N28	7C261
Military	45	QP7C261-45QMB	28-Lead Windowed LCC	CQCC1-N28	7C261
Military	45	QP7C261-45TMB	24-Lead Windowed Flatpack	GDFP2-F24	7C261
Military	45	QP7C261-45WMB	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Military	45	QP7C263-45DMB	24-Lead 300-mil CerDIP	GDIP3-T24	7C263
Military	45	QP7C263-45KMB	24-Lead Flatpack	GDFP2-F24	7C263
Military	45	QP7C263-45LMB	28-Lead LCC	CQCC1-N28	7C263
Military	45	QP7C263-45QMB	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	45	QP7C263-45TMB	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Military	45	QP7C263-45WMB	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Military	45	QP7C264-45DMB	24-Lead 600-mil CerDIP	GDIP1-T24	7C264
Military	45	QP7C264-45WMB	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Military	55	5962-87515023A	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	55	5962-87515023C	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	55	5962-8751502JA	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264

Temp Range	t_{AA} ns	Part Number	Package	Mil-Std-1835	Generic
Military	55	5962-8751502KA	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Military	55	5962-8751502LA	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Military	55	5962-87515063A	28-Lead Windowed LCC	CQCC1-N28	7C261
Military	55	5962-8751506KA	24-Lead Windowed Flatpack	GDFP2-F24	7C261
Military	55	5962-8751506LA	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Military	55	5962-87515103A	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	55	5962-8751510JA	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Military	55	5962-8751510KA	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Military	55	5962-8751510LA	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Military	55	5962-9080301M3A	28-Lead LCC	CQCC1-N28	7C261
Military	55	5962-9080301MKA	24-Lead Flatpack	GDFP2-F24	7C261
Military	55	5962-9080301MLA	24-Lead 300-mil CerDIP	GDIP3-T24	7C261
Military	55	5962-9080305M3A	28-Lead LCC	CQCC1-N28	7C263
Military	55	5962-9080305MJA	24-Lead 600-mil CerDIP	GDIP1-T24	7C264
Military	55	5962-9080305MKA	24-Lead Flatpack	GDFP2-F24	7C263
Military	55	5962-9080305MLA	24-Lead 300-mil CerDIP	GDIP3-T24	7C263
Military	55	QP7C261-55DMB	24-Lead 300-mil CerDIP	GDIP3-T24	7C261
Military	55	QP7C261-55KMB	24-Lead Flatpack	GDFP2-F24	7C261
Military	55	QP7C261-55LMB	28-Lead LCC	CQCC1-N28	7C261
Military	55	QP7C261-55QMB	28-Lead Windowed LCC	CQCC1-N28	7C261
Military	55	QP7C261-55TMB	24-Lead Windowed Flatpack	GDFP2-F24	7C261
Military	55	QP7C261-55WMB	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C261
Military	55	QP7C263-55DMB	24-Lead 300-mil CerDIP	GDIP3-T24	7C263
Military	55	QP7C263-55KMB	24-Lead Flatpack	GDFP2-F24	7C263
Military	55	QP7C263-55LMB	28-Lead LCC	CQCC1-N28	7C263
Military	55	QP7C263-55QMB	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	55	QP7C263-55TMB	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Military	55	QP7C263-55WMB	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Military	55	QP7C264-55DMB	24-Lead 600-mil CerDIP	GDIP1-T24	7C264
Military	55	QP7C264-55WMB	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Military	70	5962-87515033A	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	70	5962-87515033C	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	70	5962-8751503JA	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Military	70	5962-8751503KA	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Military	70	5962-8751503LA	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263
Military	90	5962-87515043A	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	90	5962-87515043C	28-Lead Windowed LCC	CQCC1-N28	7C263
Military	90	5962-8751504JA	24-Lead 600-mil Windowed CerDIP	GDIP1-T24	7C264
Military	90	5962-8751504KA	24-Lead Windowed Flatpack	GDFP2-F24	7C263
Military	90	5962-8751504LA	24-Lead 300-mil Windowed CerDIP	GDIP3-T24	7C263

* denotes Lead Free Lead Finish
In addition to those products listed above, QP Semiconductor supports Industrial Temperature Range, Source Control Drawing (SCD), and custom package development for this product family.

Notes:

Package outline information and specifications are defined by Mil-Std-1835 package dimension requirements.

Products manufactured by QP Semiconductor are compliant to the assembly, burn-in, test and quality conformance requirements of Test Methods 5004 & 5005 of Mil-Std-883 for Class B or Q devices as appropriate. The appropriate DSCC Detail Specifications define the electrical test requirements for each device.

The listed drawings, Mil-PRF-38535, Mil-Std-883 and Mil-Std-1835 are available online at http://www.dscc.dla.mil/

Additional information is available at our website http://www.qpsemi.com