M54HCxxx
M54HCTxxx

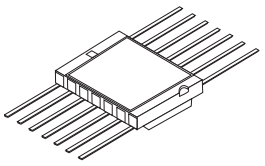
Rad-hard high speed 2 to 6 V CMOS logic series

Features

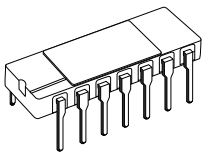
- 2 to 6 V operating voltage
- Low power DC dissipation: 1 µA max at 25°C
- High speed t_{PD} = 8 ns typ at 25°C
- Symmetrical outputs characteristics
- High noise immunity: 28% of min V_{CC}
- Hermetic packages
- Rad-hard 50 krad (Si)
- SEL immune up to 110 MeV/mg/cm²
- ESCC qualified
- Same die and electrical specification for engineering and flight models
- The complete specification of each type is available from the ESCC web site: https://escies.org using its ESCC part number. ST guarantees full compliance of qualified parts with these ESCC specifications

Description

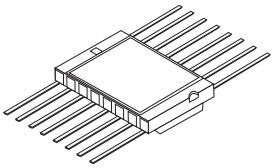
The M54HCxxx and M54HCTxxx series are composed of over 90 types of high speed CMOS functions specifically designed to meet the radiation requirements of the aerospace industry. It includes a large set of gates, Flip-Flops, Multiplexers, Counters, Bus interface and several other functions. The radiation hardness, the single event latch-up (SEL) immunity and the housing in hermetic packages of all types of both series make them ideally suited for use in the most difficult environmental conditions.



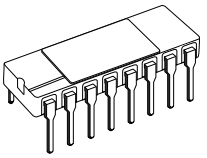
Flat-14



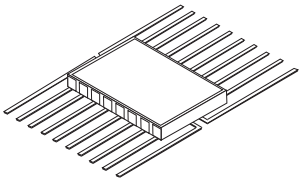
DIL-14



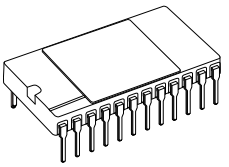
Flat-16



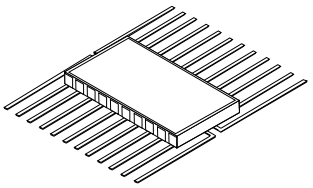
DIL-16



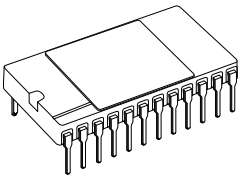
Flat-20



DIL-20



Flat-24



DIL-24

The upper metallic lid is not electrically connected to any pins, nor to the IC die inside the package.

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1 M54HC and M54HCT families overview

Table 1. Device summary

Part number	Description	Radiation level	Agency qualification	EPPL	ESCC specification	Package	Vcc		Vin range	Other features	Temp. range
							Min	Max			
M54HC00	Rad-hard quad 2-input NAND gate	50 krad (Si)	ESCC	Y	9201/105	Flat-14 - DIL-14	2.0	6.0	0 to Vcc		-55 °C to 125 °C
M54HC02	Rad-hard quad 2-input NOR gate			Y	9201/113	Flat-14 - DIL-14	2.0	6.0			
M54HC03	Rad-hard quad 2-input NAND open drain			Y	9201/114	Flat-14 - DIL-14	2.0	6.0			
M54HC04	Rad-hard Hex inverter			Y	9401/033	Flat-14 - DIL-14	2.0	6.0			
M54HCU04	Rad-hard Hex inverter single stage	-		-	9401/055	Flat-14 - DIL-14	4.5	5.5		Unbuffered output	
M54HC08	Rad-hard quad 2-input AND gate	50 krad (Si)		Y	9201/106	Flat-14 - DIL-14	2.0	6.0			
M54HC10	Rad-hard triple 3-input NAND gate			Y	9201/107	Flat-14 - DIL-14	2.0	6.0			
M54HC11	Rad-hard triple 3-input AND gate			Y	9201/117	Flat-14 - DIL-14	2.0	6.0			
M54HC14	Rad-hard Hex Schmitt inverter			Y	9409/007	Flat-14 - DIL-14	2.0	6.0			
M54HC20	Rad-hard dual 4-input NAND gate			Y	9201/118	Flat-14 - DIL-14	2.0	6.0			
M54HC21	Rad-hard dual 4-input AND gate			Y	9201/108	Flat-14 - DIL-14	2.0	6.0			
M54HC27	Rad-hard triple 3-input NOR gate			Y	9201/109	Flat-14 - DIL-14	2.0	6.0			

Table 1. Device summary (continued)

Part number	Description	Radiation level	Agency qualification	EPPL	ESCC specification	Package	Vcc		Vin range	Other features	Temp. range
							Min	Max			
M54HC30	Rad-hard 8-input NAND gate	50 krad (Si)	ESCC	-	9201/110	Flat-14 - DIL-14	2.0	6.0	0 to Vcc		-55 °C to 125 °C
M54HC32	Rad-hard quad 2-input OR gate			Y	9201/111	Flat-14 - DIL-14	2.0	6.0			
M54HC73	Rad-hard dual J-K flip-flop with clear			-	9203/071	Flat-14 - DIL-14	2.0	6.0		Negative-edge	
M54HC74	Rad-hard dual D-Type Flip-Flop with preset & clear			Y	9203/050	Flat-14 - DIL-14	2.0	6.0		Positive-edge	
M54HCT74	Rad-hard dual D-Type Flip-Flop with preset & clear			Y	9203/070	Flat-14 - DIL-14	4.5	5.5		Positive-edge TTL compatible	
M54HC75	Rad-hard 4-bit D-type latch			-	9203/065	Flat-16 - DIL-16	2.0	6.0			
M54HC85	Rad-hard 4-bit magnitude comparator			Y	9209/004	Flat-16 - DIL-16	2.0	6.0			
M54HC86	Rad-hard quad exclusive OR gate			Y	9201/119	Flat-14 - DIL-14	2.0	6.0		Pinout 1	
M54HC109	Rad-hard dual J-K Flip-Flop with preset & clear			Y	9306/048	Flat-16 - DIL-16	2.0	6.0		Positive-edge	
M54HC123	Rad-hard dual retrigg. monostable multivibrator with clear			-	9207/006	Flat-16 - DIL-16	2.0	6.0			
M54HC125	Rad-hard quad bus buffer 3-state			Y	9401/039	Flat-14	2.0	6.0		Inverted enables	
M54HC132	Rad-hard quad 2-input Schmitt NAND gate			Y	9201/120	Flat-14 - DIL-14	2.0	6.0			
M54HC137	Rad-hard 3-to-8 line decoder latch inverter			-	9205/013	Flat-16 - DIL-16	2.0	6.0			

Table 1. Device summary (continued)

Part number	Description	Radiation level	Agency qualification	EPPL	ESCC specification	Package	Vcc		Vin range	Other features	Temp. range
							Min	Max			
M54HC138	Rad-hard 3-to-8 line decoder inverter	50 krad (Si)	ESCC	Y	9408/046	Flat-16 - DIL-16	2.0	6.0	0 to Vcc		-55 °C to 125 °C
M54HC139	Rad-hard dual 2-to-4 line decoder/demultiplexer			Y	9205/017	Flat-16 - DIL-16	2.0	6.0			
M54HC148	Rad-hard 8-to-3 line priority encoder			-	9410/017	Flat-16 - DIL-16	2.0	6.0			
M54HC151	Rad-hard 8-channel multiplexer			Y	9408/054	Flat-16 - DIL-16	2.0	6.0			
M54HC153	Rad-hard dual 4-channel multiplexer			-	9408/038	Flat-16 - DIL-16	2.0	6.0			
M54HC154	Rad-hard 4-to-16 line decoder/demultiplexer			Y	9205/023	Flat-24 - DIL-24	2.0	6.0			
M54HC157	Rad-hard quad 2-channel multiplexer			Y	9408/057	Flat-16 - DIL-16	2.0	6.0			
M54HC158	Rad-hard quad 2-channel multiplexer Inverter			Y	9408/059	Flat-16 - DIL-16	2.0	6.0			
M54HC160	Rad-hard synchronous decade counter with async. clear			-	9205/062	DIL-16	2.0	6.0			
M54HC161	Rad-hard synchronous binary counter with async. clear			Y	9204/059	Flat-16 - DIL-16	2.0	6.0			
M54HC163	Rad-hard synchronous binary counter with sync. clear			Y	9204/073	Flat-16 - DIL-16	2.0	6.0			
M54HC164	Rad-hard 8-bit SIPO shift register			Y	9306/041	Flat-14 - DIL-14	2.0	6.0			
M54HC165	Rad-hard 8-bit PISO shift register			Y	9306/042	Flat-16 - DIL-16	2.0	6.0			
M54HC166	Rad-hard 8-bit PISO shift register with clear			Y	9306/043	Flat-16 - DIL-16	2.0	6.0			

Table 1. Device summary (continued)

Part number	Description	Radiation level	Agency qualification	EPPL	ESCC specification	Package	Vcc		Vin range	Other features	Temp. range
							Min	Max			
M54HC174	Rad-hard Hex D-Type Flip-Flop with clear	50 krad (Si)	ESCC	Y	9306/052	Flat-16 - DIL-16	2.0	6.0	0 to Vcc		-55 °C to 125 °C
M54HC175	Rad-Hard Quad D-Type Flip-Flop With Clear			Y	9203/052	Flat-16 - DIL-16	2.0	6.0			
M54HC191	Rad-Hard 4-bit synchronous binary up/down counter			Y	9204/066	Flat-16 - DIL-16	2.0	6.0			
M54HC193	Rad-hard synchronous up/down binary counter			Y	9204/065	Flat-16 - DIL-16	2.0	6.0			
M54HC194	Rad-hard 4-bit PIPO shit register			-	9306/047	Flat-16 - DIL-16	2.0	6.0		4 Shift Modes	
M54HC237	Rad-hard 3-to-8 line decoder latch			Y	9205/021	Flat-16 - DIL-16	2.0	6.0			
M54HC238	Rad-hard 3-to-8 line decoder			Y	9205/016	Flat-16 - DIL-16	2.0	6.0			
M54HC240	Rad-hard octal bus buffer 3-state inverter			Y	9401/034	Flat-20 - DIL-20	2.0	6.0		Independent enables TTL compatible	
M54HCT240	Rad-hard octal bus buffer 3-state inverter			Y	9401/045	Flat-20 - DIL-20	4.5	5.5			
M54HC241	Rad-hard octal bus buffer 3-state			-	9401/035	Flat-20 - DIL-20	2.0	6.0		Complementary enables	
M54HC244	Rad-hard octal bus buffer 3-state			Y	9401/048	Flat-20 - DIL-20	2.0	6.0		Inverted enables	
M54HCT244	Rad-hard octal bus buffer 3-state			Y	9402/009	Flat-20 - DIL-20	4.5	5.5		Inverted enables TTL compatible	

Table 1. Device summary (continued)

Part number	Description	Radiation level	Agency qualification	EPPL	ESCC specification	Package	Vcc		Vin range	Other features	Temp. range
							Min	Max			
M54HC245	Rad-hard octal bus transceiver 3-state	50 krad (Si)	ESCC	Y	9405/013	Flat-20 - DIL-20	2.0	6.0	0 to Vcc		-55 °C to 125 °C
M54HCT245	Rad-hard octal bus transceiver 3-state			Y	9405/014	Flat-20 - DIL-20	4.5	5.5		TTL compatible	
M54HC251	Rad-hard 8-channel multiplexer 3-state			-	9408/048	Flat-16 - DIL-16	2.0	6.0			
M54HC253	Rad-hard dual 4-channel multiplexer 3-state			-	9408/058	Flat-16 - DIL-16	2.0	6.0			
M54HC257	Rad-hard quad 2-channel multiplexer 3-state			Y	9408/047	Flat-16	2.0	6.0			
M54HC259	Rad-hard 8-bit adressable latch			-	9203/073	Flat-16 - DIL-16	2.0	6.0			
M54HC273	Rad-hard octal d-type flip-flop with clear			Y	9203/053	Flat-20 - DIL-20	2.0	6.0			
M54HC283	Rad-hard 4-bit binary full adder			Y	9202/075	Flat-16 - DIL-16	2.0	6.0			
M54HC365	Rad-hard Hex bus buffer 3-state			-	9401/052	Flat-16 - DIL-16	2.0	6.0			
M54HC367	Rad-hard Hex bus buffer 3-state			-	9401/044	Flat-16 - DIL-16	2.0	6.0		Independent enables	
M54HC373	Rad-hard octal D-Type latch 3-state			Y	9203/059	Flat-20 - DIL-20	2.0	6.0			
M54HCT373	Rad-hard octal D-Type latch 3-state			Y	9203/064	Flat-20 - DIL-20	4.5	5.5		TTL compatible	
M54HC374	Rad-hard octal D-Type Flip-Flop 3-state			Y	9203/060	Flat-20 - DIL-20	2.0	6.0			
M54HCT374	Rad-hard octal D-Type Flip-Flop 3-state			Y	9203/066	Flat-20 - DIL-20	4.5	5.5		TTL compatible	

Table 1. Device summary (continued)

Part number	Description	Radiation level	Agency qualification	EPPL	ESCC specification	Package	Vcc		Vin range	Other features	Temp. range
							Min	Max			
M54HC390	Rad-hard dual decade counter	50 krad (Si)	ESCC	-	9204/078	Flat-16 - DIL-16	2.0	6.0	0 to Vcc		-55 °C to 125 °C
M54HC393	Rad-hard dual binary counter			-	9204/074	Flat-14 - DIL-14	2.0	6.0			
M54HC540	Rad-hard octal bus buffer 3-state inverter			Y	9401/049	Flat-20 - DIL-20	2.0	6.0			
M54HC541	Rad-hard octal bus buffer 3-state			Y	9401/047	Flat-20 - DIL-20	2.0	6.0		Non Inverted Enables	
M54HC573	Rad-hard octal D-Type latch 3-state			Y	9202/072	Flat-20 - DIL-20	2.0	6.0		Through Chip Pinout	
M54HC574	Rad-hard octal D-Type Flip-Flop 3-state			Y	9203/054	Flat-20 - DIL-20	2.0	6.0		Through Chip Pinout	
M54HC590	Rad-hard 8 bit binary counter register 3-state			Y	9204/071	Flat-16 - DIL-16	2.0	6.0			
M54HC595	Rad-hard 8 bit shift register output latch 3-state			Y	9306/051	Flat-16 - DIL-16	2.0	6.0			
M54HC597	Rad-hard 8 bit latch/shift register			Y	9306/054	Flat-16 - DIL-16	2.0	6.0			
M54HC688	Rad-hard 8 bit equality comparator			Y	9209/005	Flat-20 - DIL-20	2.0	6.0			
M54HC4002	Rad-hard dual 4-input NOR gate			-	9201/130	Flat-14 - DIL-14	2.0	6.0			
M54HC4020	Rad-hard 14-stage binary counter			-	9204/070	Flat-16 - DIL-16	2.0	6.0			
M54HC4040	Rad-hard 12-stage binary counter			Y	9204/069	Flat-16 - DIL-16	2.0	6.0			
M54HC4049	Rad-hard hex buffer/converter inverter			Y	9401/037	Flat-16 - DIL-16	2.0	6.0			

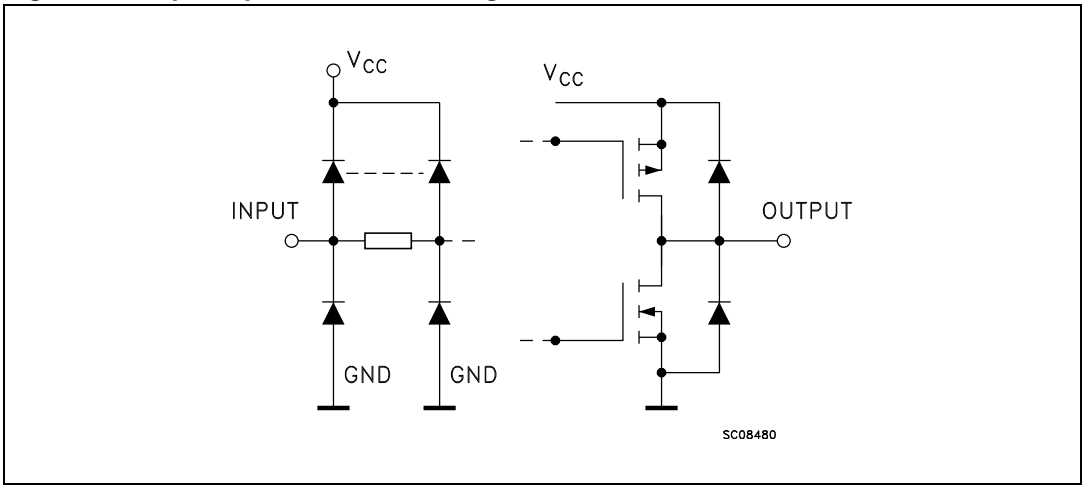
Table 1. Device summary (continued)

Part number	Description	Radiation level	Agency qualification	EPPL	ESCC specification	Package	Vcc		Vin range	Other features	Temp. range
							Min	Max			
M54HC4050	Rad-hard hex buffer/converter	50 krad (Si)	ESCC	Y	9401/038	Flat-16 - DIL-16	2.0	6.0	0 to Vcc		-55 °C to 125 °C
M54HC4051	Rad-hard single 8-channel analog mux/demux			-	9408/064	Flat-16 - DIL-16	2.0	6.0			
M54HC4053	Rad-hard triple 2-channel analog mux/demux			-	9408/065	Flat-16 - DIL-16	2.0	6.0			
M54HC4060	Rad-hard 14-stage binary counter/oscillator			-	9204/076	Flat-16 - DIL-16	2.0	6.0			
M54HC4066	Rad-hard quad bilateral switch			-	9408/052	Flat-14 - DIL-14	2.0	6.0			
M54HC4072	Rad-hard dual 4-input OR gate			-	9201/124	Flat-14 - DIL-14	2.0	6.0			
M54HC4075	Rad-hard triple 3-input OR gate			-	9201/129	Flat-14 - DIL-14	2.0	6.0			
M54HC4078	Rad-hard 8-input NOR/OR gate			-	9201/123	Flat-14 - DIL-14	2.0	6.0			
M54HC4094	Rad-hard 8-bit SIPO shit register 3-state			-	9306/050	Flat-16 - DIL-16	2.0	6.0			
M54HC4514	Rad-hard 4-to-16 line decoder latch			-	9205/019	Flat-24 - DIL-24	2.0	6.0			

Note: Contact ST sales office for information about the specific conditions for other 54AC or 54ACT part number, product in die form and QML-Q versions

2 Input equivalent circuit diagram

Figure 1. Input equivalent circuit diagram



3 Maximum rating

3.1 Absolute maximum ratings

3.1.1 M54HC series

Table 2. Absolute maximum ratings - M54HC series

Symbol	Parameter	Value	Unit
V_{CC}	Supply voltage	-0.5 to +7	V
V_I	DC input voltage	-0.5 to VCC +0.5	V
V_O	DC output voltage	-0.5 to VCC +0.5	V
I_{IK}	DC input diode current	± 20	mA
I_{OK}	DC output diode current	± 20	mA
I_O	DC output current	± 25	mA
I_{CC} or I_{GND}	DC V_{CC} or ground current	± 50	mA
P_D	Power dissipation	300	mW
T_{stg}	Storage temperature	-65 to +150	°C
T_L	Lead temperature (10 sec)	265	°C

Note: All voltage values are referred to V_{SS} pin voltage.

3.1.2 M54HCT series

Table 3. Absolute maximum ratings - M54HCT series

Symbol	Parameter	Value	Unit
V_{CC}	Supply voltage	-0.5 to +7	V
V_I	DC input voltage	-0.5 to V_{CC} +0.5	V
V_O	DC output voltage	-0.5 to V_{CC} +0.5	V
I_{IK}	DC input diode current	± 20	mA
I_{OK}	DC output diode current	± 20	mA
I_O	DC output current	± 35	mA
I_{CC} or I_{GND}	DC V_{CC} or ground current	± 70	mA
P_D	Power dissipation	420	mW
T_{stg}	Storage temperature	-65 to +150	°C
T_L	Lead temperature (10 sec)	265	°C

Note: All voltage values are referred to V_{SS} pin voltage.

3.2 Recommended operating conditions

3.2.1 M54HC series

Table 4. Recommended operating conditions

Symbol	Parameter	Value	Unit
V_{CC}	Supply voltage	2 to 6	V
V_I	Input voltage	0 to V_{CC}	V
V_O	Output voltage	0 to V_{CC}	V
T_{op}	Operating temperature	-55 to 125	°C

3.2.2 M54HCT series

Table 5. Recommended operating conditions

Symbol	Parameter	Value	Unit
V_{CC}	Supply voltage	4.5 to 5.5	V
V_I	Input voltage	0 to VCC	V
V_O	Output voltage	0 to VCC	V
T_{op}	Operating temperature	-55 to 125	°C
t_r,t_f	Input rise and fall time (VCC = 4.5 to 5.5V)	0 to 500	ns

4 Radiation data

Each wafer lot is qualified at 50 krad (Si) total dose as per ESCC 22900 specification at 210 rad/hour.

The HC/HCT series is characterized under heavy Ion on 4 functions representative of the whole series and qualified as per the results of this characterization.

Detailed results are provided in the table below:

Table 6. Radiation data

Function	Result
Gate: 54HC08	SEL and SEU free for LET [111 MeV/mg/cm²
Multiplexer 54HC157	SEL and SEU free for LET[111 MeV/mg/cm²
Flip-flop 54HC273	SEL free for LET [111 MeV/mg/cm²
	SEU: LET_{th} = 16MeV/mg/cm², $\sigma sat = 1.7x10^{-4}$ cm²
Counter 54HC4040	SEL free for LET [111 MeV/mg/cm²
	SEU: LET_{th} = 34MeV/mg/cm², $\sigma sat = 4.2x10^{-4}$ cm²
Analog Mux/Demux 54HC4053	SEL free for LET [111 MeV/mg/cm²
	SEU: LET_{th} = 7MeV/mg/cm², $\sigma sat = 2.4x10^{-4}$ cm²”

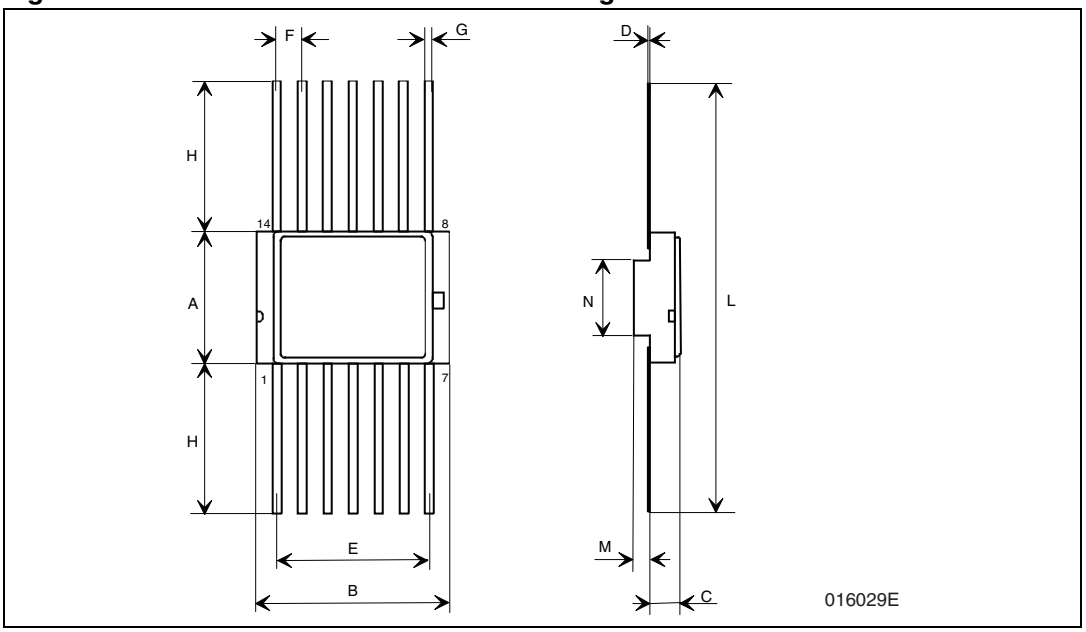
5 Package mechanical data

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK® specifications, grade definitions and product status are available at: www.st.com. ECOPACK is an ST trademark.

Table 7. Ceramic Flat-14 mechanical data

Dim.	mm.		
	Min.	Typ.	Max.
A	6.75	6.91	7.06
B	9.76	9.95	10.14
C	1.49		1.95
D	0.10	0.127	0.15
E	7.50	7.62	7.75
F		1.27	
G	0.38	0.43	0.48
H		6.0	
L	18.75	en	22.0
M		0.38	
N		4.31	

Figure 2. Ceramic Flat-14 mechanical drawings

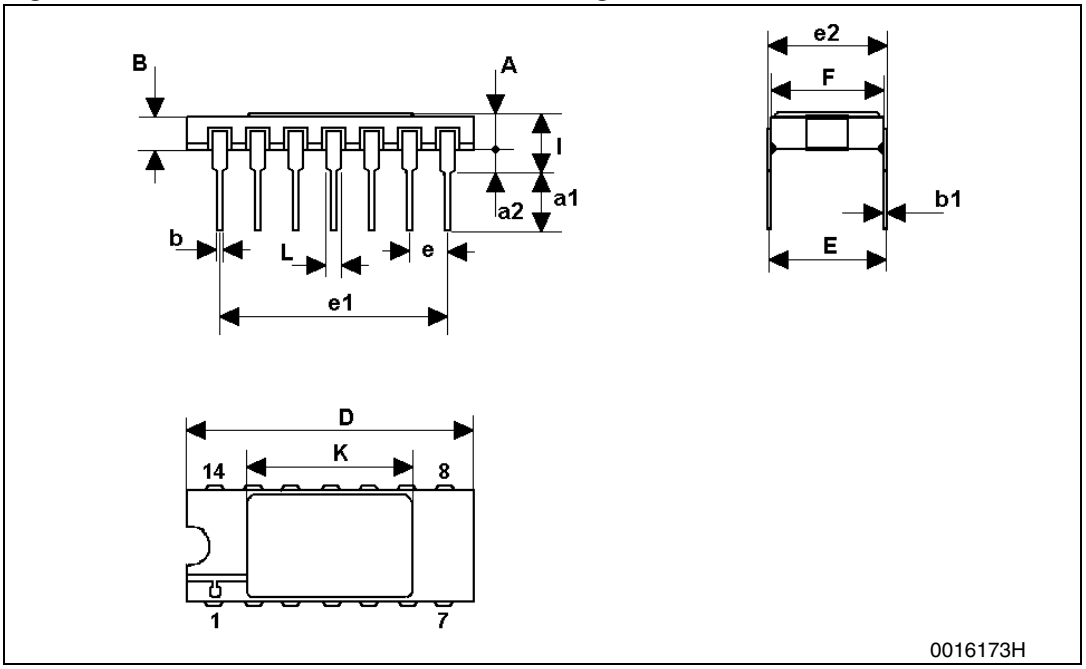


Note: The upper metallic lid is not electrically connected to any pins, nor to the IC die inside the package. Connecting unused pins or metal lid to ground or to the power supply will not affect the electrical characteristics.

Table 8. Ceramic DIL-14 mechanical data

Dim.	mm.		
	Min.	Typ	Max.
A	2.1		2.54
a1	3.00		3.70
a2	0.63	0.88	1.14
B	1.82	2.03	2.39
b	0.40	0.45	0.50
b1	0.20	0.254	0.30
D	18.79	19.00	19.20
E	7.36	7.62	7.87
e		2.54	
e1	15.11	15.24	15.37
e2	7.62	7.87	8.12
F	7.11		7.75
I			3.70
K	10.90		12.1 n
L	1.14	1.27	1.5

Figure 3. Ceramic DIL-14 mechanical drawings

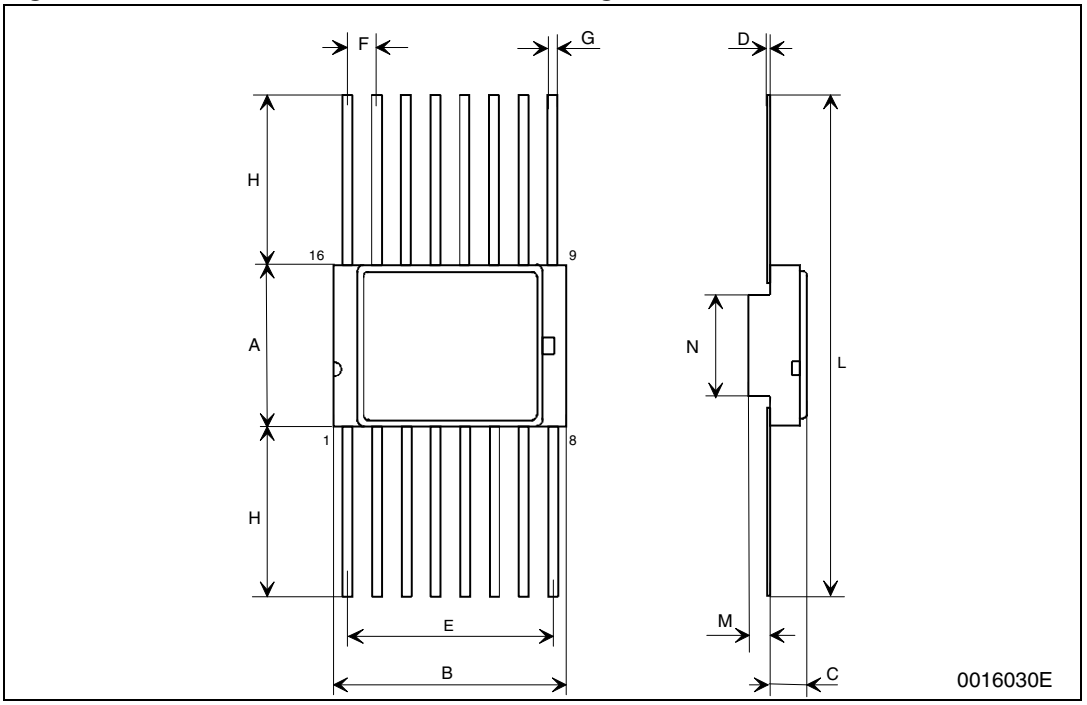


Note: The upper metallic lid is not electrically connected to any pins, nor to the IC die inside the package. Connecting unused pins or metal lid to ground or to the power supply will not affect the electrical characteristics.

Table 9. Ceramic Flat-16 mechanical data

Dim.	Mm.		
	Min.	Typ.	Max.
A	6.75	6.91	7.06
B	9.76	9.94	10.14
C	1.49		1.95
D	0.102	0.127	0.152
E	8.76	8.89	9.01
F		1.27	
G	0.38	0.43	0.48
H	6.0		
L	18.75	en	22.0
M	0.33	0.38	0.43
N		4.31	

Figure 4. Ceramic Flat-16 mechanical drawings

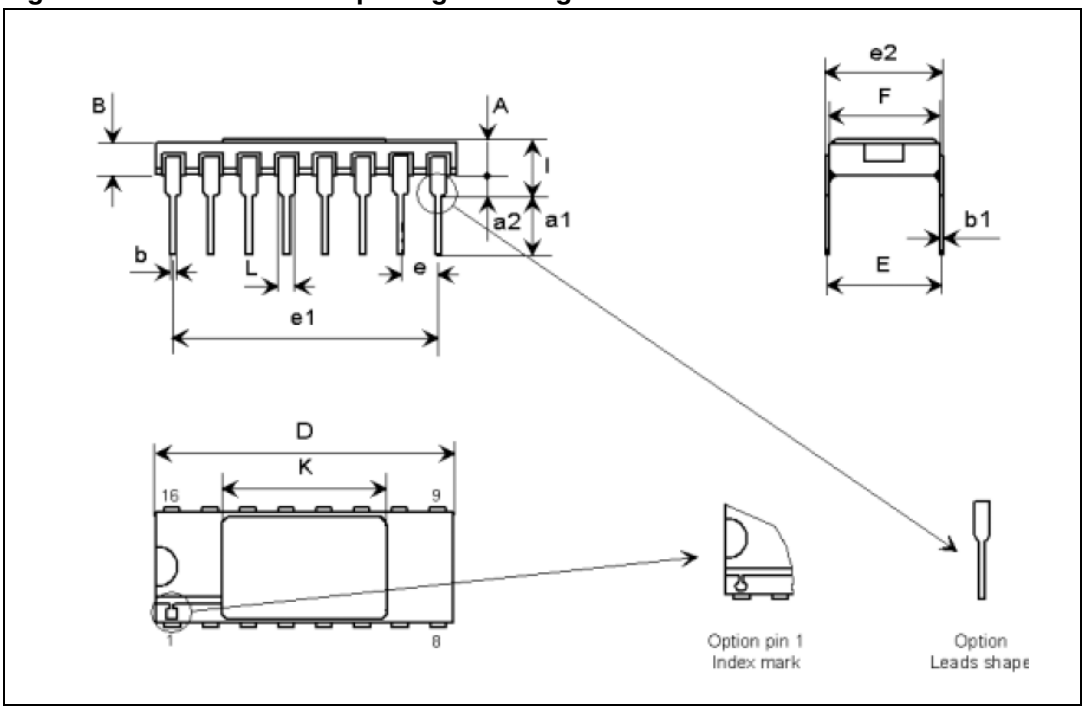


Note: The upper metallic lid is not electrically connected to any pins, nor to the IC die inside the package. Connecting unused pins or metal lid to ground or to the power supply will not affect the electrical characteristics.

Table 10. Ceramic DIL-16 package dimensions

Dim.	mm.		
	Min.	Typ.	Max.
A	2.10		2.71
a1	3.00		3.70
a2	0.63	0.88	1.14
B	1.82		2.39
b	0.40	0.45	0.50
b1	0.20	0.254	0.30
D	20.06	20.32	20.58
E	7.36	7.62	7.87
e		2.54	
e1	17.65	17.78	17.90
e2	7.62	7.87	8.12
F	7.29	7.49	7.70
I			3.83
K	10.90		12.10
L	1.14		1.50

Figure 5. Ceramic DIL-16 package drawings

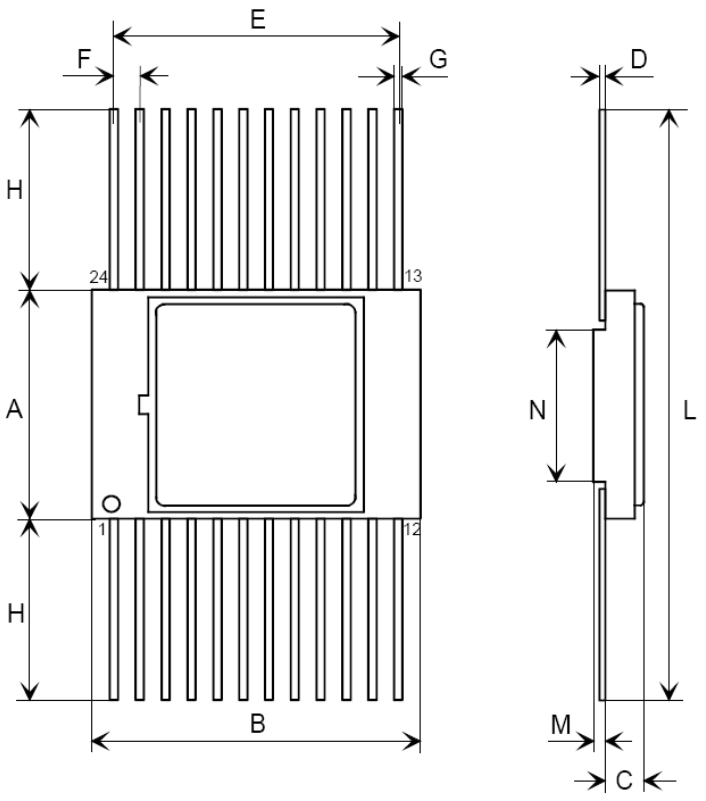


Note: The upper metallic lid is not electrically connected to any pins, nor to the IC die inside the package. Connecting unused pins or metal lid to ground or to the power supply will not affect the electrical characteristics.

Table 11. Ceramic Flat-24 package dimensions

Dim.	mm.		
	Min.	Typ.	Max.
A	10.70	11.00	11.30
B	15.30	15.49	15.70
C	1.45		1.90
D	0.23	0.254	0.30
E	13.84	13.97	14.10
F	1.22	1.27	1.32
G	0.45	0.508	0.55
H	7.25		8.25
L	25.00		28.00
M	0.45	0.508	0.55
N		7.01	

Figure 6. Ceramic Flat-24 package drawings

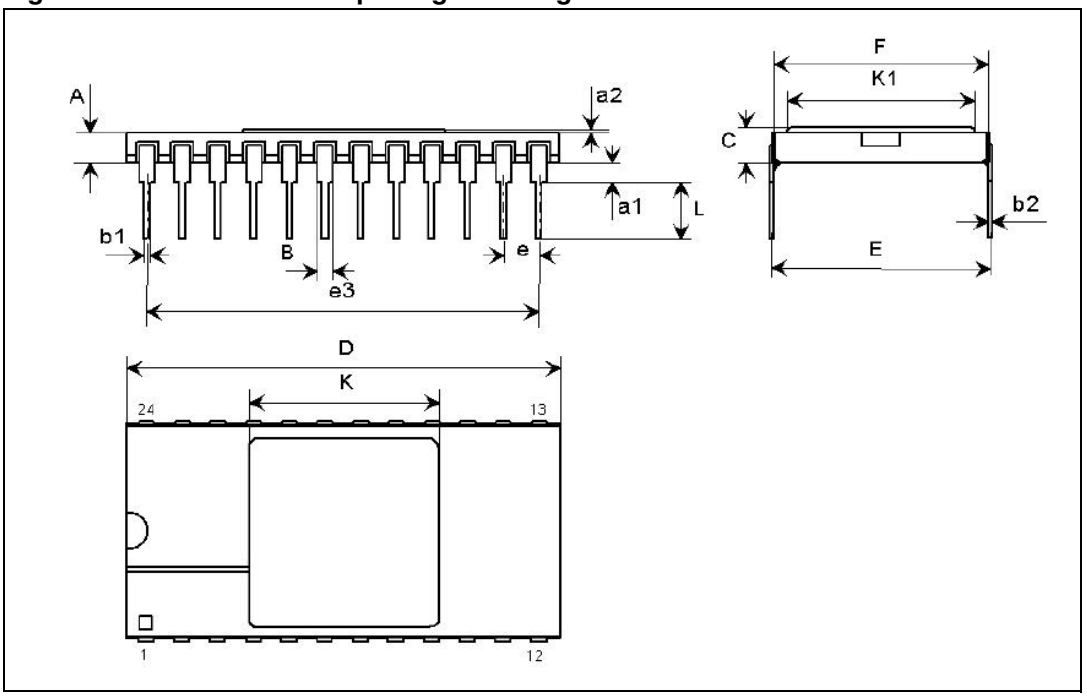


Note: The upper metallic lid is not electrically connected to any pins, nor to the IC die inside the package. Connecting unused pins or metal lid to ground or to the power supply will not affect the electrical characteristics.

Table 12. Ceramic DIL-24 package dimensions

Dim.	mm.		
	Min.	Typ.	Max.
A	2.159	1.931	2.387
a1	1.270	1.016	1.524
a2	.307	.274	.340
B	1.270		
b1	0.457	0.407	0.507
b2	.254	0.229	0.304
C	2.466	2.205	2.727
D	30.48	30.17	30.78
E	15.24	14.98	15.49
e	2.540	2.410	2.670
e3	27.94	27.81	28.06
F	15.11	14.85	15.36
K	12.80	12.60	13.00
K1	12.80	12.60	13.00
L	3.300	3.000	3.800

Figure 7. Ceramic DIL-24 package drawings



Note: The upper metallic lid is not electrically connected to any pins, nor to the IC die inside the package. Connecting unused pins or metal lid to ground or to the power supply will not affect the electrical characteristics.

6 Order codes

Table 13. Ordering information

Order codes	ESCC detailed specification	Quality Level	Comment	Package	Lead finish	Marking	Mass (g)	EPPL	Packing
M54HC00K	9201/105/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920110501F or 02F	0.70	Y	Strip pack
M54HC00D	9201/105/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920110503F or 04F	2.20	-	Strip pack
M54HC02K	9201/113/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920111301F or 02F	0.70	Y	Strip pack
M54HC02D	9201/113/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920111303F or 04F	2.20	-	Strip pack
M54HC03K	9201/114/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920111401F or 02F	0.70	Y	Strip pack
M54HC03D	9201/114/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920111403F or 04F	2.20	-	Strip pack
M54HC04K	9401/033/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	940103301F or 02F	0.70	Y	Strip pack
M54HC04D	9401/033/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	940103303F or 04F	2.20	-	Strip pack
M54HCU04K	9401/055/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	940105501F or 02F	0.70	-	Strip pack
M54HCU04D	9401/055/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	940105503F or 04F	2.20	-	Strip pack
M54HC08K	9201/106/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920110601F or 02F	0.70	Y	Strip pack
M54HC08D	9201/106/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920110603F or 04F	2.20	-	Strip pack
M54HC10K	9201/107/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920110701F or 02F	0.70	Y	Strip pack
M54HC10D	9201/107/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920110703F or 04F	2.20	-	Strip pack
M54HC11K	9201/117/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920111701F or 02F	0.70	Y	Strip pack
M54HC11D	9201/117/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920111703F or 04F	2.20	-	Strip pack
M54HC14K	9409/007/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	940900701F or 02F	0.70	Y	Strip pack
M54HC14D	9409/007/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	940900703F or 04F	2.20	-	Strip pack
M54HC20K	9201/118/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920111801F or 02F	0.70	Y	Strip pack
M54HC20D	9201/118/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920111803F or 04F	2.20	-	Strip pack
M54HC21K	9201/108/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920110801F or 02F	0.70	Y	Strip pack
M54HC21D	9201/108/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920110803F or 04F	2.20	-	Strip pack

Table 13. Ordering information (continued)

Order codes	ESCC detailed specification	Quality Level	Comment	Package	Lead finish	Marking	Mass (g)	EPPL	Packing
M54HC27K	9201/109/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920110901F or 02F	0.70	Y	Strip pack
M54HC27D	9201/109/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920110903F or 04F	2.20	-	Strip pack
M54HC30K	9201/110/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920111001F or 02F	0.70	-	Strip pack
M54HC30D	9201/110/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920111003F or 04F	2.20	-	Strip pack
M54HC32K	9201/111/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920111101F or 02F	0.70	Y	Strip pack
M54HC32D	9201/111/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920111103F or 04F	2.20	-	Strip pack
M54HC73K	9203/071/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920307101F or 02F	0.70	-	Strip pack
M54HC73D	9203/071/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920307103F or 04F	2.20	-	Strip pack
M54HC74K	9203/050/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920305001F or 02F	0.70	Y	Strip pack
M54HC74D	9203/050/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920305003F or 04F	2.20	-	Strip pack
M54HCT74K	9203/070/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920307001F or 02F	0.70	Y	Strip pack
M54HCT74D	9203/070/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920307003F or 04F	2.20	-	Strip pack
M54HC75K	9203/065/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920306501F or 02F	0.70	-	Strip pack
M54HC75D	9203/065/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920306510F or 11F	2.20	-	Strip pack
M54HC85K	9209/004/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920900401F or 02F	0.70	Y	Strip pack
M54HC85D	9209/004/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920900410F or 11F	2.20	-	Strip pack
M54HC86K	9201/119/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920111901F or 02F	0.70	Y	Strip pack
M54HC86D	9201/119/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920111903F or 04F	2.20	-	Strip pack
M54HC109K	9306/048/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	930604801F or 02F	0.70	Y	Strip pack
M54HC109D	9306/048/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	930604810F or 11F	2.20	-	Strip pack
M54HC123K	9207/006/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920700601F or 02F	0.70	-	Strip pack
M54HC123D	9207/006/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920700610F or 11F	2.20	-	Strip pack
M54HC125K	9401/039/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	940103901F or 02F	0.70	Y	Strip pack
M54HC132K	9201/120/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920112001F or 02F	0.70	Y	Strip pack
M54HC132D	9201/120/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920112003F or 04F	2.20	-	Strip pack

Table 13. Ordering information (continued)

Order codes	ESCC detailed specification	Quality Level	Comment	Package	Lead finish	Marking	Mass (g)	EPPL	Packing
M54HC137K	9205/013/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920501301F or 02F	0.70	-	Strip pack
M54HC137D	9205/013/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920501310F or 11F	2.20	-	Strip pack
M54HC138K	9408/046/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940804601F or 02F	0.70	Y	Strip pack
M54HC138D	9408/046/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	940804610F or 11F	2.20	-	Strip pack
M54HC139K	9205/017/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920501701F or 02F	0.70	Y	Strip pack
M54HC139D	9205/017/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920501710F or 11F	2.20	-	Strip pack
M54HC148K	9410/017/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	9410-01701F or 02F	0.70	-	Strip pack
M54HC148D	9410/017/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	9410-01710F or 11F	2.20	-	Strip pack
M54HC151K	9408/054/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940805401F or 02F	0.70	Y	Strip pack
M54HC151D	9408/054/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	940805410F or 11F	2.20	-	Strip pack
M54HC153K	9408/038/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940803801F or 02F	0.70	-	Strip pack
M54HC153D	9408/038/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	940803810F or 11F	2.20	-	Strip pack
M54HC154K	9205/023/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-24	Gold or solder dip	920502301F or 02F	1.70	Y	Strip pack
M54HC154D	9205/023/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-24	Gold or solder dip	920502303F or 04F	5.20	-	Strip pack
M54HC157K	9408/057/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940805701F or 02F	0.70	Y	Strip pack
M54HC157D	9408/057/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	940805710F or 11F	2.20	-	Strip pack
M54HC158K	9408/059/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940805901F or 02F	0.70	Y	Strip pack
M54HC158D	9408/059/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	940805910F or 11F	2.20	-	Strip pack
M54HC160D	9204/062/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920406210F or 11F	2.20	-	Strip pack
M54HC161K	9204/059/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920405901F or 02F	0.70	Y	Strip pack
M54HC161D	9204/059/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920405910F or 11F	2.20	-	Strip pack
M54HC163K	9204/073/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920407301F or 02F	0.70	Y	Strip pack
M54HC163D	9204/073/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920407310F or 11F	2.20	-	Strip pack
M54HC164K	9306/041/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	930604101F or 02F	0.70	Y	Strip pack
M54HC164D	9306/041/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	930604103F or 04F	2.20	-	Strip pack

Table 13. Ordering information (continued)

Order codes	ESCC detailed specification	Quality Level	Comment	Package	Lead finish	Marking	Mass (g)	EPPL	Packing
M54HC165K	9306/042/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	930604201F or 02F	0.70	Y	Strip pack
M54HC165D	9306/042/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	930604210F or 11F	2.20	-	Strip pack
M54HC166K	9306/043/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	930604301F or 02F	0.70	Y	Strip pack
M54HC166D	9306/043/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	930604310F or 11F	2.20	-	Strip pack
M54HC174K	9306/052/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	930605201F or 02F	0.70	Y	Strip pack
M54HC174D	9306/052/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	930605210F or 11F	2.20	-	Strip pack
M54HC175K	9203/052/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920305201F or 02F	0.70	Y	Strip pack
M54HC175D	9203/052/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920305210F or 11F	2.20	-	Strip pack
M54HC191K	9204/066/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920406601F or 02F	0.70	Y	Strip pack
M54HC191D	9204/066/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920406610F or 11F	2.20	-	Strip pack
M54HC193K	9204/065/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920406501F or 02F	0.70	Y	Strip pack
M54HC193D	9204/065/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920406510F or 11F	2.20	-	Strip pack
M54HC194K	9306/047/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	930604701F or 02F	0.70	-	Strip pack
M54HC194D	9306/047/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	930604710F or 11F	2.20	-	Strip pack
M54HC237K	9205/021/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920502101F or 02F	0.70	Y	Strip pack
M54HC237D	9205/021/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920502110F or 11F	2.20	-	Strip pack
M54HC238K	9205/016/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920501601F or 02F	0.70	-	Strip pack
M54HC238D	9205/016/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920501610F or 11F	2.20	-	Strip pack
M54HC240K	9401/034/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	940103401F or 02F	0.90	Y	Strip pack
M54HC240D	9401/034/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	940103403F or 04F	3.20	-	Strip pack
M54HCT240K	9401/045/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	940104501F or 02F	0.90	Y	Strip pack
M54HCT240D	9401/045/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	940104503F or 04F	3.20	-	Strip pack
M54HC241K	9401/035/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	940103501F or 02F	0.90	-	Strip pack
M54HC241D	9401/035/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	940103503F or 04F	3.20	-	Strip pack
M54HC244K	9401/048/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	940104801F or 02F	0.90	Y	Strip pack

Table 13. Ordering information (continued)

Order codes	ESCC detailed specification	Quality Level	Comment	Package	Lead finish	Marking	Mass (g)	EPPL	Packing
M54HC244D	9401/048/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	940104803F or 04F	3.20	-	Strip pack
M54HCT244K	9402/009/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	940200901F or 02F	0.90	Y	Strip pack
M54HCT244D	9402/009/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	9402-00903F or 04F	3.20	-	Strip pack
M54HC245K	9405/013/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	940501301F or 02F	0.90	Y	Strip pack
M54HC245D	9405/013/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	9405-01303F or 04F	3.20	-	Strip pack
M54HCT245K	9405/014/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	940501401F or 02F	0.90	Y	Strip pack
M54HCT245D	9405/014/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	9405-01403F or 04F	3.20	-	Strip pack
M54HC251K	9408/048/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940804801F or 02F	0.70	-	Strip pack
M54HC251D	9408/048/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	940804810F or 11F	2.20	-	Strip pack
M54HC253K	9408/058/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940805801F or 02F	0.70	-	Strip pack
M54HC253D	9408/058/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	940805810F or 11F	2.20	-	Strip pack
M54HC257K	9408/047/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940804701F or 02F	0.70	Y	Strip pack
M54HC259K	9203/073/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920307301F or 02F	0.70	-	Strip pack
M54HC259D	9203/073/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920307310F or 11F	2.20	-	Strip pack
M54HC273K	9203/053/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	920305301F or 02F	0.90	Y	Strip pack
M54HC273D	9203/053/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	920305303F or 04F	3.20	-	Strip pack
M54HC283K	9202/075/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920207501F or 02F	0.70	Y	Strip pack
M54HC283D	9202/075/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920207510F or 11F	2.20	-	Strip pack
M54HC365K	9401/052/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940105201F or 02F	0.70	-	Strip pack
M54HC365D	9401/052/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	940105210F or 11F	2.20	-	Strip pack
M54HC367K	9401/044/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940104401F or 02F	0.70	-	Strip pack
M54HC367D	9401/044/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	940104410F or 11F	2.20	-	Strip pack
M54HC373K	9203/059/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	920305901F or 02F	0.90	Y	Strip pack
M54HC373D	9203/059/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	920305903F or 04F	3.20	-	Strip pack
M54HCT373K	9203/064/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	920306401F or 02F	0.90	Y	Strip pack

Table 13. Ordering information (continued)

Order codes	ESCC detailed specification	Quality Level	Comment	Package	Lead finish	Marking	Mass (g)	EPPL	Packing
M54HCT373D	9203/064/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	920306403F or 04F	3.20	-	Strip pack
M54HC374K	9203/060/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	920306001F or 02F	0.90	Y	Strip pack
M54HC374D	9203/060/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	920306003F or 04F	3.20	-	Strip pack
M54HCT374K	9203/066/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	920306601F or 02F	0.90	Y	Strip pack
M54HCT374D	9203/066/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	920306603F or 04F	3.20	-	Strip pack
M54HC390K	9204/078/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920407801F or 02F	0.70	-	Strip pack
M54HC390D	9204/078/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920407810F or 11F	2.20	-	Strip pack
M54HC393K	9204/074/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920407401F or 02F	0.70	-	Strip pack
M54HC393D	9204/074/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920407403F or 04F	2.20	-	Strip pack
M54HC540K	9401/049/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	940104901F or 02F	0.90	Y	Strip pack
M54HC540D	9401/049/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	940104903F or 04F	3.20	-	Strip pack
M54HC541K	9401/047/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	940104701F or 02F	0.90	Y	Strip pack
M54HC541D	9401/047/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	940104703F or 04F	3.20	-	Strip pack
M54HC573K	9202/072/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	920207201F or 02F	0.90	Y	Strip pack
M54HC573D	9202/072/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	920207203F or 04F	3.20	-	Strip pack
M54HC574K	9203/054/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	920305401F or 02F	0.90	Y	Strip pack
M54HC574D	9203/054/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	920305403F or 04F	3.20	-	Strip pack
M54HC590K	9204/071/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920407101F or 02F	0.70	Y	Strip pack
M54HC590D	9204/071/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920407110F or 11F	2.20	-	Strip pack
M54HC595K	9306/051/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	930605101F or 02F	0.70	Y	Strip pack
M54HC595D	9306/051/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	930605110F or 11F	2.20	-	Strip pack
M54HC597K	9306/054/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	930605401F or 02F	0.70	Y	Strip pack
M54HC597D	9306/054/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	930605410F or 11F	2.20	-	Strip pack
M54HC688K	9209/005/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-20	Gold or solder dip	920900501F or 02F	0.90	Y	Strip pack
M54HC688D	9209/005/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-20	Gold or solder dip	920900503F or 04F	3.20	-	Strip pack

Table 13. Ordering information (continued)

Order codes	ESCC detailed specification	Quality Level	Comment	Package	Lead finish	Marking	Mass (g)	EPPL	Packing
M54HC4002K	9201/130/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920113001F or 02F	0.70	-	Strip pack
M54HC4002D	9201/130/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920113003F or 04F	2.20	-	Strip pack
M54HC4020K	9204/070/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920407001F or 02F	0.70	-	Strip pack
M54HC4020D	9204/070/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920407010F or 11F	2.20	-	Strip pack
M54HC4040K	9204/069/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920406901F or 02F	0.70	Y	Strip pack
M54HC4040D	9204/069/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920406910F or 11F	2.20	-	Strip pack
M54HC4049K	9401/037/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940103701F or 02F	0.70	Y	Strip pack
M54HC4049D	9401/037/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	940103710F or 11F	2.20	-	Strip pack
M54HC4050K	9401/038/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940103801F or 02F	0.70	Y	Strip pack
M54HC4050D	9401/038/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	940103810F or 11F	2.20	-	Strip pack
M54HC4051K	9408/064/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940806401F or 02F	0.70	-	Strip pack
M54HC4051D	9408/064/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	940806410F or 11F	2.20	-	Strip pack
M54HC4053K	9408/065/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	940806501F or 02F	0.70	-	Strip pack
M54HC4053D	9408/065/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	940806510F or 11F	2.20	-	Strip pack
M54HC4060K	9204/076/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	920407601F or 02F	0.70	-	Strip pack
M54HC4060D	9204/076/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	920407610F or 11F	2.20	-	Strip pack
M54HC4066K	9408/052/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	940805201F or 02F	0.70	-	Strip pack
M54HC4066D	9408/052/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	940805203F or 04F	2.20	-	Strip pack
M54HC4072K	9201/124/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920112401F or 02F	0.70	-	Strip pack
M54HC4072D	9201/124/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920112403F or 04F	2.20	-	Strip pack
M54HC4075K	9201/129/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920112901F or 02F	0.70	-	Strip pack
M54HC4075D	9201/129/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920112903F or 04F	2.20	-	Strip pack
M54HC4078K	9201/123/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-14	Gold or solder dip	920112301F or 02F	0.70	-	Strip pack
M54HC4078D	9201/123/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-14	Gold or solder dip	920112303F or 04F	2.20	-	Strip pack
M54HC4094K	9306/050/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-16	Gold or solder dip	930605001F or 02F	0.70	-	Strip pack

Table 13. Ordering information (continued)

Order codes	ESCC detailed specification	Quality Level	Comment	Package	Lead finish	Marking	Mass (g)	EPPL	Packing
M54HC4094D	9306/050/10F or 11F	ESCC flight	Specify ESCC variant number in PO	DIL-16	Gold or solder dip	930605010F or 11F	2.20	-	Strip pack
M54HC4514K	9205/019/01F or 02F	ESCC flight	Specify ESCC variant number in PO	Flat-24	Gold or solder dip	920501901F or 02F	1.70	-	Strip pack
M54HC4514D	9205/019/03F or 04F	ESCC flight	Specify ESCC variant number in PO	DIL-24	Gold or solder dip	920501903F or 04F	5.20	-	Strip pack

Note: Contact ST sales office for information about the specific conditions for other 54AC or 54ACT part number, product in die form and QML-Q versions

7 Revision history

Table 14. Document revision history

Date	Revision	Changes
14-Apr-2010	1	First release
10-Aug-2011	2	Added *Note: on page 14*, *Note: on page 15*, *Note: on page 16*, *Note: on page 17*, *Note: on page 18*, *Note: on page 19* and in the "Pin connections" diagram on the coverpage.

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