

GPC1 Parts List

<u>GPC1 Part</u>	<u>Type</u>	<u>Description</u>	<u>Package</u>	<u>Source</u>	<u>Stock Number</u>
U1	P89C668HBA	Philips P89C66X Microcontroller	PLCC44	Digi-Key	568-1275-5-ND
U1 Socket	44 Pin	PLCC 44 Pin Socket	PLCC44	Mouser	151-1545
U2	LF50CV	ST 5VDC LDO Regulator	TO-220	Mouser	511-LF50CV
U2 Heat Sink	577304B00	Heat Sink	.75Lx.52Wx.375H	Mouser	532-577304B00
Screw	#4	Heat Sink Mounting Screw	4-40x0.375L	Digi-Key	H781-ND
Nut	#4	Heat Sink Mounting Nut	#4 standard	Digi-Key	H216-ND
Lock Washer	#4	Heat Sink Mounting Lock Washer	#4 internal tooth	Digi-Key	H236-ND
U3	M41T81M6E	ST Real-Time Clock/Alarm	SO-8 or DIP-8	Mouser	511-M41T81M6E
U4	PCF8591PN	Philips I2C ADC/DAC	DIP 16	Digi-Key	568-1087-5-ND
U5	74HC14	Hex Schmidt Trigger	DIP 14	Mouser	512-MM74HC14N
U6	80845CNY-B	Open Drain 4.5 Volt Brownout Detector	TO-92	Mouser	628-80845CNY
U7	ST202ECN	RS-232 Dual Channel Transceiver	DIP 16	Mouser	511-ST202ECN
U8	LM334	Constant Current Source for Q1 Base	TP-92	Digi-Key	LM334ZNS-ND
Q1	ZTX1151A	ZETEX Low Sat Power PNP Transistor	TO-92	Mouser	ZTX1151A-ND
Q2	2N3904	On/Reset Circuit NPN Transistor	TO-92	Mouser	610-2N3904
Q3	TN0604	Alarm Circuit N-Ch. 0.75 ohm MOSFET	TO-92	Mouser	689-TN0604N3
Q4	2N3904	Alarm/Interrupt Circuit NPN Transistor	TO-92	Mouser	610-2N3904
Q5	2N7000	Off Circuit N-Ch. MOSFET	TO-92	Mouser	781-2N7000
Q6	TN0604	Backlight, 0.75 ohm, N-Ch. MOSFET	TO-92	Mouser	689-TN0604N3
Q7	2N3904	Switch Interrupt Circuit NPN Transistor	TO-92	Mouser	610-2N3904
Q8	2N3904	Switch Interrupt Circuit NPN Transistor	TO-92	Mouser	610-2N3904
Q9	2N7000	Sound Control N-Ch. MOSFET	TO-92	Mouser	781-2N7000
Q10	2N3904	B2 Charge NPN Transistor	TO-92	Mouser	610-2N3904
D1	1N4001	Reverse Voltage Protect Diode	DO-41	Mouser	512-1N4001
D2	1N4001	Reverse Voltage Protect Diode	DO-41	Mouser	512-1N4001
D3	1N5817	B2 Discharge Shottky Diode	DO-41	Mouser	821-1N5817
D4	1N4148	LCD Write NAND Diode	DO-35	Mouser	78-1N4148
D5	1N4148	LCD Read NAND Diode	DO-35	Mouser	78-1N4148
D6	1N4148	Diode, Install only if Supercap used for B1	DO-35	Mouser	78-1N4148
D7	1N4148	Alarm/Interrupt Circuit Diode	DO-35	Mouser	78-1N4148
D8	1N4148	Brownout Turnoff Circuit Diode	DO-35	Mouser	78-1N4148
D9	1N4148	Brownout Reset Circuit Diode	DO-35	Mouser	78-1N4148
D10	1N4148	Reset Timing Diode	DO-35	Mouser	78-1N4148
D11	1N4148	Program Mode Sound Enable Diode	DO-35	Mouser	78-1N4148
D12	1N4148	Port Controlled Sound Enable Diode	DO-35	Mouser	78-1N4148
D13	1N4148	Sound Circuit Diode	DO-35	Mouser	78-1N4148
D14	1N5239B	B2 Charge Control, 9.1 Volt Zener Diode	DO-35	Mouser	78-1N5239B
LED1	L53GD	Green Diffused LED Power Indicator	T-1 3/4	Mouser	604-L53GD
SG1	CEM-1203(42)	Magnetic Sound Transducer	.47dia x .33high	Digi-Key	102-1153-ND
X1	FOXS120-20	Crystal 12MHz, Low Profile	HC-49S	Mouser	559-FOXS120-20
X2	NC26	Crystal 32.768KHz	.079dia x .236L	Mouser	559-NC26
B1 Holder	BH2520	Size CR2032 Coin Cell Holder	.9dia	Mouser	122-2520
B2 Holder	82K	AAA Battery Clips, 12 required	AAA size	Mouser	534-082
J1	CP-102AH	Power Jack, 2.1mm	2.1x 5.5mm PCB	Digi-Key	CP-102AH-ND
J2	DB9F	DB9F Connector, .318 Setback	DB9F	Mouser	571-7478443
J3, J4, J5	strip socket	Strip Socket, Breakable, 64 Pin	0.165 high	Mouser	575-193164
J6	DB15F	DB15F Connector, .318 Setback	DB15F	Mouser	571-7478453
LS1	NSL-5112	CdS Photoresistor Backlight Control	TO-18, 0.1 Centers	Allied	699-2010
LS1(alternative)	P9001	CdS Photoresistor Backlight Control	0.1 Centers	Digi-Key	PDV-P9001-ND
LS1(alternative)	SFH3410	Visible Range Photo-Transistor	Surface Mount	Digi-Key	475-1083-1-ND
P1	3352T	Pot 10K, LCD Contrast Control	.5 In. Dia.	Mouser	652-3352T-1-103
RN1	A347K	Resistor Network, 47K, Port 0 Pullup	10 Pin SIP	Mouser	266-47K
S1-S6	MS-0621	Tactile Switch, 6 Required	12mm	Mouser	101-0621
S1-S4 Cap	MS-0110	Switch Cap, Black, 4 Required	12mm	Mouser	101-0110
S5-S6 Cap	MS-0112	Switch Cap, Red, 2 Required	12mm	Mouser	101-0112
F1	PTC Fuse	PTC Self-Resetting Fuse, 0.5 Amp	0.29dia	Digi-Key	RXE010-ND
F2	PTC Fuse	PTC Self-Resetting Fuse, 0.1 Amp	0.31dia	Digi-Key	RXE050-ND
R1	6.8 Ohm	10ma current set	1/8w, 5%	Mouser	299-6.8
R2	47K Ohm	Q1 Base Pullup	1/8w, 5%	Mouser	299-47K
R3	100 Ohm	Power On/Off Circuit	1/8w, 5%	Mouser	299-100
R4	47K Ohm	Q9 Gate Pullup	1/8w, 5%	Mouser	299-47K
R5	100 Ohm	Power On/Reset Circuit	1/8w, 5%	Mouser	299-100
R6	47K Ohm	Q2 Base Pulldown	1/8w, 5%	Mouser	299-47K

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R7	100 Ohm	Install only if Supercap used for B1	1/8w, 5%	Mouser	299-100
R8	10K Ohm	Battery Voltage Sense, 0-25.5V Range	1/8w, 1%	Mouser	270-10K
R9	2.43K Ohm	Battery Voltage Sense, 0.1 Volt/Count	1/8w, 1%	Mouser	270-2.43K
R10	47K Ohm	Q5 Gate Pullup	1/8w, 5%	Mouser	299-47K
R11	100K Ohm	Light Sensor Pullup	1/8w, 5%	Mouser	299-100K
R12	10 Ohm	Backlight Current Limit	1/8w, 5%	Mouser	299-10
R13	10 Ohm	Install only for 4x20 LCD	1/8w, 5%	Mouser	299-10
R14	1M Ohm	Reset Timing	1/8w, 5%	Mouser	299-1M
R15	10K Ohm	Reset Timing	1/8w, 5%	Mouser	299-10K
R16	10K Ohm	Serial Port 2 TX Pullup	1/8w, 5%	Mouser	299-10K
R17	1K Ohm	Reset Current Limit	1/8w, 5%	Mouser	299-1K
R18	1M Ohm	Program Mode Delay Time	1/8w, 5%	Mouser	299-1M
R19	1K Ohm	Program Mode Current Limit	1/8w, 5%	Mouser	299-1K
R20	100K Ohm	Q7 Base Pulldown	1/8w, 5%	Mouser	299-100K
R21	47K Ohm	U5 Pin 3 Pullup	1/8w, 5%	Mouser	299-47K
R22	10K Ohm	Sound Oscillator Feedback	1/8w, 5%	Mouser	299-10K
R23	3.3K Ohm	LCD Read/Write Pullup	1/8w, 5%	Mouser	299-3.3K
R24	10K Ohm	Aux Input Termination	1/8w, 5%	Mouser	299-10K
R25	10K Ohm	Aux Input Current Limit	1/8w, 5%	Mouser	299-10K
R26	3.3K Ohm	I2C SCL Pullup	1/8w, 5%	Mouser	299-3.3K
R27	3.3K Ohm	I2C SDL Pullup	1/8w, 5%	Mouser	299-3.3K
R28	1K Ohm	B2 Charge Circuit	1/8w, 5%	Mouser	299-1K
C1	100uF	Power Input Filter	25VDC Aluminum	Mouser	647-UVR1E101MED
C2	10uF	U2 Output Damping	16VDC Aluminum	Mouser	647-UVR1C100MDD
C3	0.1uF	Reset Timing	Polyester	Digi-Key	P4675-ND
C4	1uF	Program Mode Delay Time	25VDC Tantalum	Mouser	74-199D25V1
C5	0.001uF	Aux Input Response Control	Polyester	Digi-Key	P4551-ND
C6	0.1uF	Sound Oscillator Feedback	Polyester	Digi-Key	P4675-ND
C7	100uF	Sound Output Coupling	10VDC Aluminum	Mouser	647-UVR1A101MDD
C8-C9	22pF	X1 Loading	COG 50V Ceramic	Allied	507-0201
C10-C13	0.1uF	Transceiver Charge Pump	Polyester	Digi-Key	P4675-ND
C14-C18	1uF	Power Bypass	Ceramic	Allied	881-3206
Spacer	Nylon Spacer	LCD Standoff, 4 Required	0.187dia x 0.187L	Mouser	561-KSP6
Screw	Screw	LCD Mounting Screw, 4 Required	M2.5 x 12mm	McMaster-Carr	92000A107
Nut	Nut	LCD Mounting Nut, 4 Required	M2.5	McMaster-Carr	91828A113
2x16 LCD	LCD Display	Character Module with LED backlight	80x36x12.7mm	Digi-Key	LCMS01602DSF/A
4x20 LCD	LCD Display	Character Module with LED backlight	98x60x12.7mm	Digi-Key	LCMS02004DSF
B1	CR2032	Battery, 3V Lithium RTC Backup	Coin Cell	Mouser	658-CR2032
B2	HR-4U	Ni-MH Battery, 6 required	AAA	Mouser	639-HR-4U
AC Adapter	9VDC	Unregulated Wall Transformer	500ma	Digi-Key	T419-P5P-ND

Estimated Cost for parts including board and covers less than \$100