

Parts list for wrist watch

(Data accompanies slides from EEE163 Lecture 3)

Part #	Part name	Purpose	Description	Size	Material	Count
0	Wrist watch	Chronometer	Black plastic wrist watch with liquid crystal display Manufacturer: Casio, Product code: W-741	3x3x1 cm body + 16 cm strap Mass: 25 g,	Various	1
1	Outer case	Case	Black plastic housing for system, including 3 push buttons	25x25x0.8 mm	Thermoplastic (?)	1
1a	Push button	Programming	Metal button with retaining ring and gasket	ϕ 2x3 mm	Metal, elastomer	3
2	Strap	Attachment to arm	Black plastic strap (2-part), including 2 spring-loaded pins and buckle	8x1cm	Thermoplastic + metal	2
3	Back plate	Removable lid	Stamped metal plate	25x25x0.5 mm	Stainless steel	1
4	Screw	Secure lid	Cross-head screw	ϕ 1x4 mm	Stainless steel	4
4	Gasket	Prevent liquid ingress	Black ring shaped gasket to fit recess in outer case	ϕ 0.5x ϕ 25 mm	Elastomer	1
5	Battery	Electrical power supply	Button battery Panasonic CR2016 3V	ϕ 20x1 mm	Sealed steel case + electrolyte	1
6	Battery clip	Make contacts to chip and buttons	Intricate shaped metal sheet, including many sprung sections	25x25x5 mm	Stainless steel	1
7	Inner case (top)	Secure PCB and LCD	Intricate shaped white plastic	25x25x5 mm	Thermoplastic	1
8	Inner case (base)	Secure PCB and LCD	Intricate shaped white plastic	25x25x5 mm	Thermoplastic	1

9	Printed circuit board	Substrate for electronic components	2 layer PCB with components soldered to both sides	φ24x1 mm	Glass fibre, epoxy resin, metallization	1
9a	Chip	Electronic control unit	Silicon chip directly attached to PCB and embedded in epoxy resin. Wire bonds from chip to PCB.	3x3 mm	Silicon, silica-loaded epoxy resin, gold wire	1
9b	Oscillator	Stable frequency generator	Surface mount can containing quartz crystal piezo-electric oscillator	φ2x5 mm	Metal can containing quartz crystal	1
9c	Resistor	Current regulation, etc	Surface mount resistor	2x1x1 mm	Ceramic block with two metal bond pads	5
9d	Power transistor	Switch large current/voltage	Surface mount 'SOT23' package with three legs	3x2x2 mm	Epoxy resin, semiconductor, metal legs	2
9e	Transformer	Generation of high voltage for back light	Minute wire-wound transformer	φ4x5 mm	Plastic case, ultra fine wire, magnetic core (?)	1
9f	Capacitor	High frequency decoupling?	Surface mount package	3x2x2 mm	Ceramic block with two metal bond pads	1
9g	'Bleeper'	Audible output signal	Surface mount package containing piezo-electric transducer	φ3x4 mm	Plastic, piezo-ceramic	1
10	Liquid crystal display	Visual display	LCD unit with segmented display enabling 23:59:59 display plus date, etc	21x10x2 mm	Glass, liquid crystal, electrical contacts	1
10a	LCD cover slip	Transparent protection for LCD	Glass sheet	21x10 mm	Glass	1

10b	LCD	LCD	Sealed LCD unit	21x10 mm	Glass, liquid crystal, ITO electrical contacts	1
10c	Light	Backlight	Electroluminescent sheet with 2 contacts	21x10 mm	Plastic, metal, phosphor	1
10d	LCD connector	Electrical connections between PCB and LCD	z-axis conductive elastomer	0.5x3x20 mm	Two-part conductive/non- conductive elastomer sheet	1