









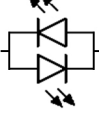


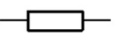
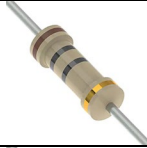

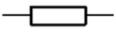

104-300 Electronics Essentials Kit Parts List

Total number of different parts: 78

Total number of pieces: 304

Notes:

- These parts are a choking hazard. Keep them away from small children and pets.
- Some parts look identical (except for the color code or part number). Be sure to put each part back in its place.
- The code shown in certain part images should also be printed on the actual part.
- Many parts come on strips of tape. Gently peel off any tape and wipe off adhesive before using each part.
- Bend leads in the middle (not against the body of the component). This helps prevent the leads from breaking.
- The **location** column shows where to place each part when using two STOREHOUSE 10 Tray Utility Boxes from Harbor Freight.

LEDs				
Symbol	Kit QTY	Image	Description	Location
	10		5mm Clear Red LED, Forward Voltage (Vf) = 2V, Current = 20mA	Box 1, Tray 6
	5		5mm Green LED, Forward Voltage (Vf) = 2.1V, Current = 20mA	Box 1, Tray 6
	5		5mm Yellow LED, Forward Voltage (Vf) = 2.1V, Current = 20mA	Box 1, Tray 6
	5		5mm Clear Blue LED, Forward Voltage (Vf) = 3.2V, Current = 20mA	Box 1, Tray 6
	5		5mm Bi-color Red/Green Two Lead LED Forward Voltage (Vf) = 2.1V Green, 1.95V Red, Current = 20mA	Box 1, Tray 6
Resistors				
All resistor tolerances are $\pm 5\%$ (gold stripe)				
 OR 	10		10 Ω ¼W 5% Carbon Film Resistor Brown, Black, Black	Box 1, Tray 7
 OR 	10		51 Ω ¼W 5% Carbon Film Resistor Green, Brown, Black	Box 1, Tray 7

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 OR 	10		100Ω ¼W 5% Carbon Film Resistor Brown, Black, Brown	Box 1, Tray 7
 OR 	10		150Ω ¼W 5% Carbon Film Resistor Brown, Green, Brown	Box 1, Tray 7
 OR 	10		270Ω ¼W 5% Carbon Film Resistor Red, Violet, Brown	Box 1, Tray 7
 OR 	10		330Ω ¼W 5% Carbon Film Resistor Orange, Orange, Brown	Box 1, Tray 8
 OR 	10		360Ω ¼W 5% Carbon Film Resistor Orange, Blue, Brown	Box 1, Tray 8
 OR 	10		470Ω ¼W 5% Carbon Film Resistor Yellow, Violet, Brown	Box 1, Tray 8
 OR 	10		1KΩ ¼W 5% Carbon Film Resistor Brown, Black, Red	Box 1, Tray 8
 OR 	10		2.2KΩ ¼W 5% Carbon Film Resistor Red, Red, Red	Box 1, Tray 8
 OR 	10		4.7KΩ ¼W 5% Carbon Film Resistor Yellow, Violet, Red	Box 1, Tray 9
 OR 	10		5.1KΩ ¼W 5% Carbon Film Resistor Green, Brown, Red	Box 1, Tray 9
 OR 	10		5.6KΩ ¼W 5% Carbon Film Resistor Green, Blue, Red	Box 1, Tray 9

104-300 Electronics Essentials Kit Parts List

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





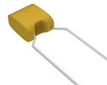
















Total number of pieces: 304

 OR 	10		10KΩ ¼W 5% Carbon Film Resistor Brown, Black, Orange	Box 1, Tray 9
 OR 	10		100KΩ ¼W 5% Carbon Film Resistor Brown, Black, Yellow	Box 1, Tray 9
 OR 	10		220KΩ ¼W 5% Carbon Film Resistor Red, Red, Yellow	Box 1, Tray 10
 OR 	10		470KΩ ¼W 5% Carbon Film Resistor Yellow, Violet, Yellow	Box 1, Tray 10
 OR 	10		1MΩ ¼W 5% Carbon Film Resistor Brown, Black, Green	Box 1, Tray 10
 OR 	10		10MΩ ¼W 5% Carbon Film Resistor Brown, Black, Blue	Box 1, Tray 10
 OR 	1		CdS Photocell Dark Resistance. ≈ .5MΩ Light Resistance = Between 16 – 33 KΩ)	Box 1, Tray 10
 OR 	1		1kΩ (code 102) Trimmer Potentiometer (Style may vary)	Box 2, Tray 6
 OR 	1		5KΩ (code 502) Trimmer Potentiometer (Style may vary)	Box 2, Tray 6
 OR 	1		10KΩ (code 103) Trimmer Potentiometer (Style may vary)	Box 2, Tray 6
 OR 	1		100kΩ (code 104) Trimmer Potentiometer (Style may vary)	Box 2, Tray 6

104-300 Electronics Essentials Kit Parts List

Total number of different parts: 78



























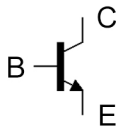

Total number of pieces: 304

 OR 	1	 504	500KΩ (code 504) Trimmer Potentiometer (Style may vary)	Box 2, Tray 6
 OR 	1		Thermistor - Negative Temperature Coefficient (NTC) 10KΩ	Box 1, Tray 10
Capacitors Package color may vary. Voltage rating printed on the electrolytic capacitors will vary, but should always be 25V or higher.				
	2	 103	0.01 μF (10,000 pF) 50V Radial Ceramic Capacitor	Box 2, Tray 7
	2	 334	0.33 μF (330,000 pF) 50V Radial Ceramic Capacitor	Box 2, Tray 7
	2	 683	0.068 μF (68000 pF) 50V Radial Ceramic Capacitor	Box 2, Tray 7
	2	 154	0.15 μF (150,000) 50V Radial Ceramic Capacitor	Box 2, Tray 7
	2	 104	0.1μF (100,000 pF) 50V Radial Ceramic Capacitor	Box 2, Tray 7
	2	 224	0.22 μF (220,000 pF) 50V Radial Ceramic Capacitor	Box 2, Tray 8
 OR 	2		0.1 μF 50V Radial Electrolytic Capacitor	Box 2, Tray 8
 OR 	2		0.47 μF 50V Radial Electrolytic Capacitor	Box 2, Tray 8

104-300 Electronics Essentials Kit Parts List

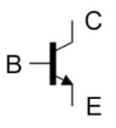

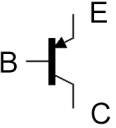

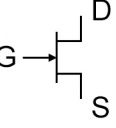



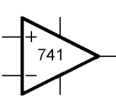
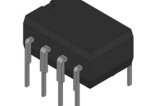
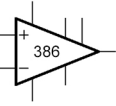
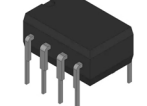
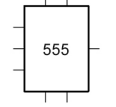
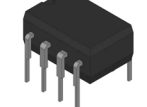
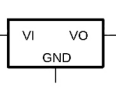

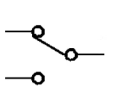

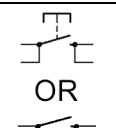


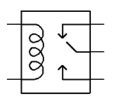

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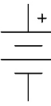






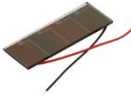


 OR 	2		1 µF 50V Radial Electrolytic Capacitor	Box 2, Tray 8
 OR 	2		10 µF 35V Radial Electrolytic Capacitor	Box 2, Tray 1
 OR 	2		22 µF 35V Radial Electrolytic Capacitor	Box 2, Tray 1
 OR 	2		47 µF 50V Radial Electrolytic Capacitor	Box 2, Tray 1
 OR 	2		100 µF 35V Radial Electrolytic Capacitor	Box 2, Tray 1
 OR 	2		220 µF 35V Radial Electrolytic Capacitor	Box 2, Tray 1
 OR 	2		470µF 35V Radial electrolytic Capacitor	Box 2, Tray 1
 OR 	2		1000 µF 25V Radial Electrolytic Capacitor	Box 2, Tray 1
Transistors, Diodes and Integrated Circuits				
	2	 1N4007	1N4007 1A Rectifier Diode , Forward Voltage (Vf)=1.1V@1A (0.7V@.02A) DC Reverse Voltage (Vr) = 1000V	Box 2, Tray 9
	2	 PN2222	PN2222 Bi-Polar Junction Transistor (BJT) NPN 40volts 1A (Can also be used in projects calling for a 2N3904 transistor)	Box 2, Tray 9

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	2	 2N3904	2N3904 Transistor NPN 40V .2A	Box 2, Tray 9
	2	 2N3906	2N3906 Transistor PNP 40V .2A	Box 2, Tray 9
	2	 J113	J113 N-CH Junction-gate-Field Effect Transistor (J-FET) (replacement for MPF102)	Box 2, Tray 9
	1		NPN Phototransistor, Wavelength sensitivity: 450 to 1080nm (Visible light is considered 400 to 700nm) Note: Be careful, this looks just like an LED	Box 2, Tray 9
	2		741 Operational Amplifier (Op-Amp) Integrated Circuit (IC)	Box 2, Tray 10
	2		386 Operational Amplifier (Op-Amp) Integrated Circuit (IC)	Box 2, Tray 10
	2		555 Timer Integrated Circuit (IC)	Box 2, Tray 10
	1	 7805	7805 5V Linear Voltage Regulator 1.5A	Box 2, Tray 10
Switches and Relays				
	1		Black Slide Switch 1P2T (SPDT), 200mA (DC), 30V	Box 1, Tray 1
 OR 	4		Tact Switch 12*12mm Through Hole SPST-NO	Box 1, Tray 1
	1		8.4 – 12 VDC Relay – SPDT (1 Form C) (PN RT214012)	Box 1, Tray 1

Total number of different parts: 78
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Lamps				
	1		Neon lamp 65VAC 90VDC	Box 2, Tray 10
Power Supplies and Battery Connectors				
	2		9V Alkaline Battery (Brand may vary) Note: Protect the contacts on these batteries by storing with the connector attached.	Box 1, Tray 3
No Symbol	2		9V Battery Connector with plug for breadboard jumpers	Box 1, Tray 3
	1		Two pack AA alkaline batteries (Brand may vary)	Box 1, Tray 3
No Symbol	1		Two AA battery holder with plug for 9V Battery Connector	Box 1, Tray 4
 OR 	1		Solar Cell (Open circuit voltage will be between 1V and 5V.) Panasonic Part numbers and their open circuit voltage: Part #1417 = 2.4V Part #1454 = 2.4V Part #1819 = 4.9V	Box 1, Tray 1
Prototyping Supplies				
No Symbol	1		400 Point Solderless plug-in breadboard	Box 2, Tray 5
No Symbol	1		830 Point Solderless Plug-in Breadboard	Box 2, Tray 5
No Symbol	1		Jumper Wires Male to Male 6" 28 AWG 20PCS	Box 2, Tray 4

104-300 Electronics Essentials Kit Parts List

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No Symbol	1		Alligator Clip test leads (Pack of 10)	Not stored in parts boxes
No Symbol	1		Jumper Kit Various colors 22AWG 70PCS (Replaced the 65 Pc. Jumper Wire Assortment as of 1-4-22)	Box 2, Tray 4
Speakers and Microphones				
	1		Electret Condenser Microphone 3V ~ 10V	Box 1, Tray 1
	1		9VDC Mechanical Buzzer with Wire Lead	Box 1, Tray 5
	1		Round 8 Ohm Speaker 2 Watt, 1" Diameter	Box 1, Tray 5
	1		Stereo Earbuds	Box 1, Tray 1
	1		Stereo Jack Connector 3.5mm	Box 1, Tray 1
Motors				
	1		Hobby Motor (6600 RPM @ 12V)	Box 2, Tray 3
Safety				
No Symbol	1		Safety Glasses, Use With or Without prescription Eyewear	Not stored in parts boxes