

Speed controller parts list - 115V US Version

circuit reference	Short Description	Newark Order code	Order Quantity	Full description
R18	RESISTOR 330R	58K3926	1	RESISTOR 330R 1% 0.125W 50ppm/degC METAL FILM
R21	RESISTOR 680R	58K3948	1	RESISTOR 680R 1% 0.125W 50ppm/degC METAL FILM
R5,R24	RESISTOR 1K	58K3885	2	RESISTOR 1K 1% 0.125W 50ppm/degC METAL FILM
R2,R19,R35	RESISTOR 2K7	59K8668	3	RESISTOR 2K7 1% 0.125W 50ppm/degC METAL FILM
R14,R17	RESISTOR 4K7	59K8724	2	RESISTOR 4K7 1% 0.125W 50ppm/degC METAL FILM
R6,R12	RESISTOR 7K5	59K8687	2	RESISTOR 7K5 1% 0.125W 50ppm/degC METAL FILM
R25	RESISTOR 10K	58K3886	1	RESISTOR 10K 1% 0.125W 50ppm/degC METAL FILM
R16	RESISTOR 18K	38K5433	1	RESISTOR 18K 1% 0.125W 50ppm/degC METAL FILM
R20,R26	RESISTOR 22K	58K3913	2	RESISTOR 22K 1% 0.125W 50ppm/degC METAL FILM
R22	RESISTOR 27K	58K3920	1	RESISTOR 27K 1% 0.125W 50ppm/degC METAL FILM
R27	RESISTOR 68K	58K3949	1	RESISTOR 68K 1% 0.125W 50ppm/degC METAL FILM
R34	RESISTOR 4K7 0.5W	26R4140	1	RESISTOR 4K7 0.5W 5% METAL FILM
R32, R33	RESISTOR 10K 0.5W	74M3298	2	RESISTOR 10K 0.5W 5% METAL FILM
R30, R31	RESISTOR 1R 5W	40M8826	2	RESISTOR 1R0 5% 5W WIREWOUND
R23	RESISTOR 2R 3W	41K9247	1	RESISTOR 2R 5% 3W WIREWOUND
D12	DIODE ZENER 5V6	55R1525	1	DIODE ZENER 5.6V 0.5W 5% Package=DO-35
D10,D11,D13	DIODE 1N4148	80K0993	3	DIODE 1N4148
D8,D9	DIODE MBR3100G	42K0012	2	DIODE MBR3100G If=3A Vrrm=100V SCHOTTKY Package=DO-201AD
D4, D5, D6,D7	DIODE MUR420	42K1631	4	DIODE MUR420 If=4A Vrrm=200V FAST RECOVERY Package=DO-201AD
C1,C6,C8,C11,C13	CAPACITOR 100nF 50V	97K4528	5	CAPACITOR 100nF 50V CERAMIC Dielectric=X7R Lead pitch=5.08mm
For 50Hz output, fit the following -				
C2,C15	CAPACITOR 1uF 63V	21C0479	2	CAPACITOR 1uF 63V 5% POLYESTER Lead pitch=5mm
For 60Hz output, fit the following -				
C2	CAPACITOR 0.82uF 50V	49W2266	1	CAPACITOR 0.82uF 50V 5% POLYESTER Lead pitch=5mm
C15	CAPACITOR 1uF 63V	21C0479	1	CAPACITOR 1uF 63V 5% POLYESTER Lead pitch=5mm
C14	CAPACITOR 4n7 CLASS Y2	94M8790	1	CAPACITOR 4.7nF 300V CLASS Y2 POLYPROPYLENE Width=13mm Lead pitch=10mm
C16	CAPACITOR 100nF 100V	25M8045	1	CAPACITOR 100nF 100V POLYESTER Lead pitch=7.5mm
C5,C10	CAPACITOR 1000uF 50v	74R3441	2	CAPACITOR 1000uF 50V ELECTROLYTIC Diameter=16mm Lead pitch=7.5mm Lead diameter=0.8mm AC Ripple=3.32A 105°C
C17	CAPACITOR 47uF 100V	31M6335	1	CAPACITOR 47uF 100V ELECTROLYTIC Diameter=10mm Lead pitch=5mm 105°C
C3	CAPACITOR 1uF 50V	39K2776	1	CAPACITOR 1uF 50V ELECTROLYTIC Diameter=4mm 105°C
C4,C9	CAPACITOR 10uF 25V	49W4526	2	CAPACITOR 10uF 25V ELECTROLYTIC Diameter=4mm 105°C
C18	CAPACITOR 100uF 35V	31T8019	1	CAPACITOR 100uF 35V ELECTROLYTIC Diameter=6.3mm 105°C
C7, C12	CAPACITOR 6800uF 50V	30K6796	2	CAPACITOR 6800uF 50V ELECTROLYTIC Diameter=25mm Lead pitch=10mm SNAP-IN Hole size=2mm AC Ripple=3.3A 105°C
C19,C20,C21	CAPACITOR 22uF 50V	83T7022	3	CAPACITOR 22uF 50V ELECTROLYTIC Diameter=5mm Lead pitch=2mm 105°C
U2	IC LM317T REGULATOR	82C8147	1	IC VOLTAGE REGULATOR LM317AVHT TO220
If you have an oscilloscope, fit the following parts -				
R1,R15	POTENTIOMETER 7mm 22K	62J1892	2	TRIMMER 22K LINEAR CERMET 100ppm/degC BOURNS 3362P-1-223LF
R3	POTENTIOMETER 7mm 500R	62J1901	1	TRIMMER 500R LINEAR CERMET 100ppm/degC BOURNS 3362P-1-501LF

Speed controller parts list - 115V US Version

circuit reference	Short Description	Newark Order code	Order Quantity	Full description
If you do NOT have an oscilloscope, fit the following parts -				
R15	POTENTIOMETER 7mm 22K	62J1892	1	TRIMMER 22K LINEAR CERMET 100ppm/degC BOURNS 3362P-1-223LF
R4	RESISTOR 200R	58K3910	1	RESISTOR 200R 1% 0.125W 50ppm/degC METAL FILM
If you are building a controller for 33 RPM only (no speed selection switch), fit the following parts -				
R9	POTENTIOMETER 15TURN 10K	32K7292	1	TRIMMER 10K 15TURN LINEAR CERMET 100ppm/degC BOURNS 3006P-1-103LF
D2	RED LED	14N9386	5	LED RED 3mm DIAMETER
R7	RESISTOR 15K	58K3901	10	RESISTOR 15K 1% 0.125W 50ppm/degC METAL FILM
If you are building a controller for 33 & 45 RPM (toggle switch for speed selection), fit the following parts -				
R9,R10	POTENTIOMETER 15TURN 10K	32K7292	2	TRIMMER 10K 15TURN LINEAR CERMET 100ppm/degC BOURNS 3006P-1-103LF
SW1	TOGGLE SWITCH	98K6227	1	SWITCH TOGGLE DPDT PCB HORIZ MULTICOMP 2MD1T2B2M6RE
D2,D3	RED LED	14N9386	2	LED RED 3mm DIAMETER
R7	RESISTOR 15K	58K3901	1	RESISTOR 15K 1% 0.125W 50ppm/degC METAL FILM
R8	RESISTOR 68K	58K3949	1	RESISTOR 68K 1% 0.125W 50ppm/degC METAL FILM
R28	RESISTOR 220K	58K3914	1	RESISTOR 220K 1% 0.125W 50ppm/degC METAL FILM
If you are building a controller for 33, 45 & 78 RPM (rotary switch for speed selection), fit the following parts -				
R9,R10, R13	POTENTIOMETER 15TURN 10K	32K7292	3	TRIMMER 10K 15TURN LINEAR CERMET 100ppm/degC BOURNS 3006P-1-103LF
D2, D301, D1	RED LED	14N9386	2	LED RED 3mm DIAMETER
R7	RESISTOR 20K	83F1232	1	RESISTOR 20K 1% 0.125W 50ppm/degC METAL FILM
R8, R28	RESISTOR 27K	58K3920	2	RESISTOR 27K 1% 0.125W 50ppm/degC METAL FILM
R11	RESISTOR 47K	58K3939	1	RESISTOR 47K 1% 0.125W 50ppm/degC METAL FILM
R29	RESISTOR 100K	58K3887	1	RESISTOR 100K 1% 0.125W 50ppm/degC METAL FILM
[FS1],[FS2]	FUSEHOLDER 20mm	24C7847	4	FUSEHOLDER 20mm PCB MOUNT SCHURTER 0751.0110
FS1, FS2	FUSE 2.0AT 20mm	98K4389	2	FUSE 2.0A 20mm ANTISURGE
CN1, CN2, CN3, CN4,CN5	TERMINAL BLOCK 2-WAY	07WX4921	5	TERMINAL BLOCK 2WAY Lead spacing=5mm Pin diameter=1mm Flammability=UL94V-0 Interlocking
U1	IC XR2206 FUNCTION GEN	EBAY	1	IC FUNCTION GENERATOR EXAR XR2206CP PDIP16
(U1)	IC SOCKET DIL16	78K6667	1	IC SOCKET DIL16
U3,U4	IC TDA7293V AMPLIFIER	89K1055	2	IC AUDIO AMPLIFIER ST MICROELECTRONICS TDA7293V
THE FOLLOWING PARTS ARE FITTED OFF THE PCB -				
	IEC OUTLET	06WX9538	1	OUTLET, IEC, RECEPTACLE
	FUSEHOLDER	74M3025	1	FUSEHOLDER, PANEL MOUNT, 20 x 5mm
	IEC INLET MODULE	68C1723	1	INLET, IEC, SWITCHED/FUSED
	HEATSINK	11R6932	1	HEATSINK 0.78°C/W 160 x 100 x 33.4mm
	HEATSINK COMPOUND	31C4127	1	HEATSINK COMPOUND
	HEATSHRINK SLEEVING	32M4909	1	HEATSHRINK SLEEVING 9mm 3:1 POLYOLEFIN
	INSULATING KIT	50P9590	1	INSULATING KIT, MICA, 44x30.2mm

Speed controller parts list - 115V US Version

circuit reference	Short Description	Newark Order code	Order Quantity	Full description
	FUSE 2.0AT 20mm	98K4389	2	FUSE 2.0A 20mm ANTISURGE
	FUSE, 1.0A 20mm	14P8561	1	FUSE 1.0A 20mm ANTISURGE
	CAPACITOR 1nF CLASS Y2	69K4073	2	CAPACITOR 1nF 300V CLASS Y2 CERAMIC
Digikey 237-1342-ND	SUPPLY TRANSFORMER	11R8076	1	TRANSFORMER TOROIDAL 2 x 24V 100VA SECONDARY, 2 X 115V PRIMARY TRIAD MAGNETICS VPT48-2080
Digikey 237-1340-ND	OUTPUT TRANSFORMER	11R8066	1	TRANSFORMER TOROIDAL 2 x 15V 100VA SECONDARY, 2 x 115V PRIMARY TRIAD MAGNETICS VPT30-3330