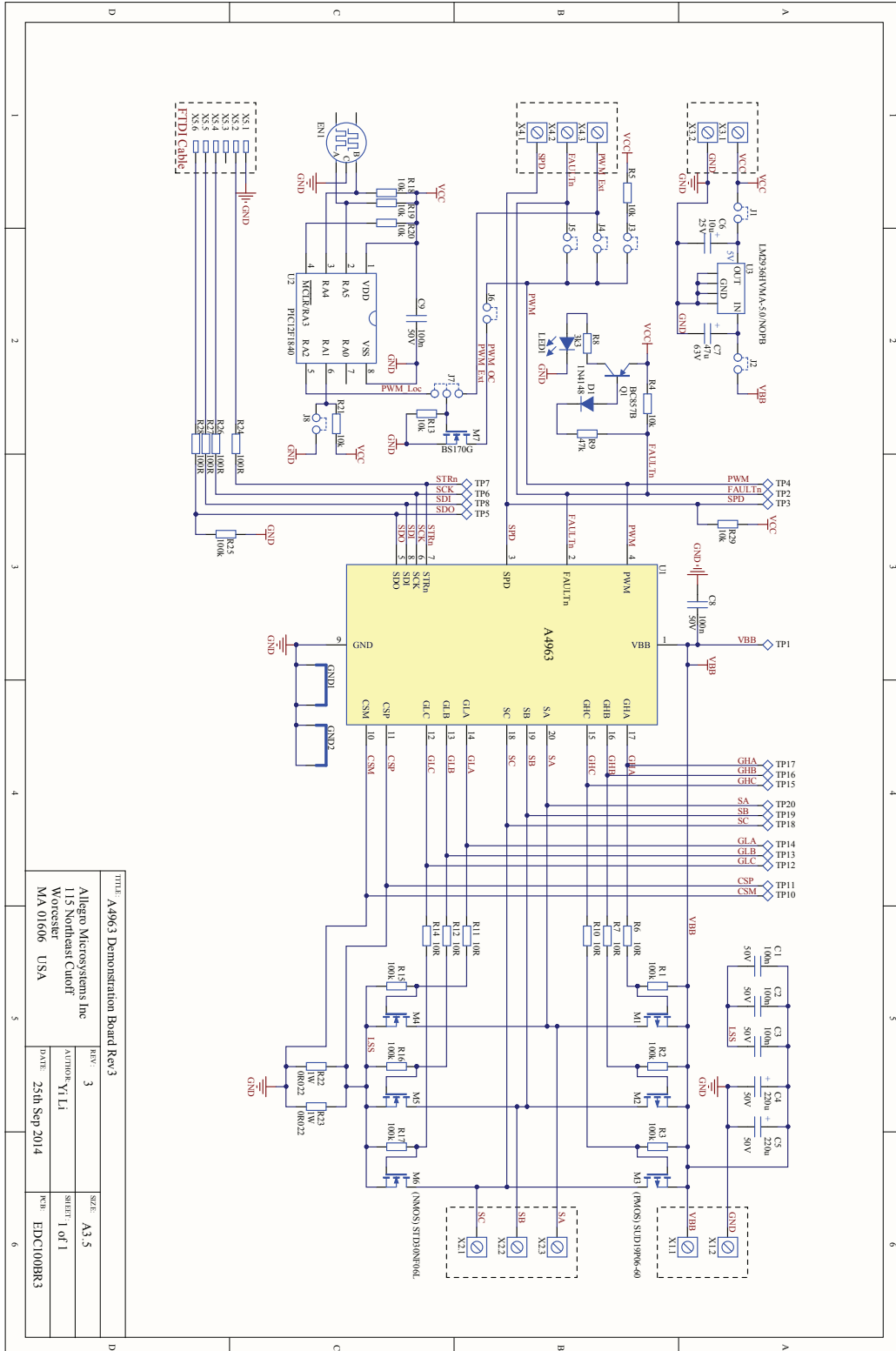


## Demo Board Schematic/Layout

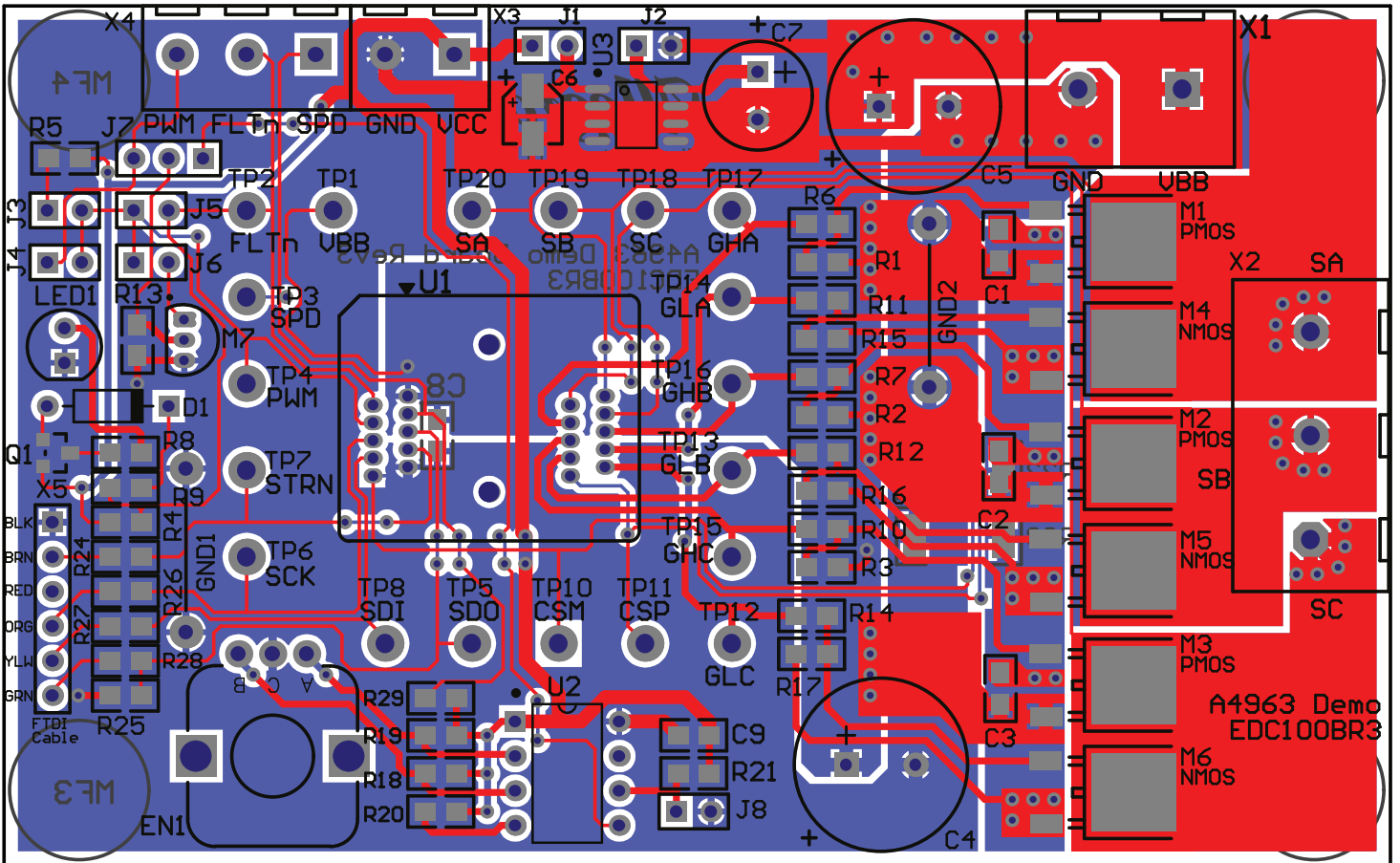
### SCHEMATIC



LAYOUT

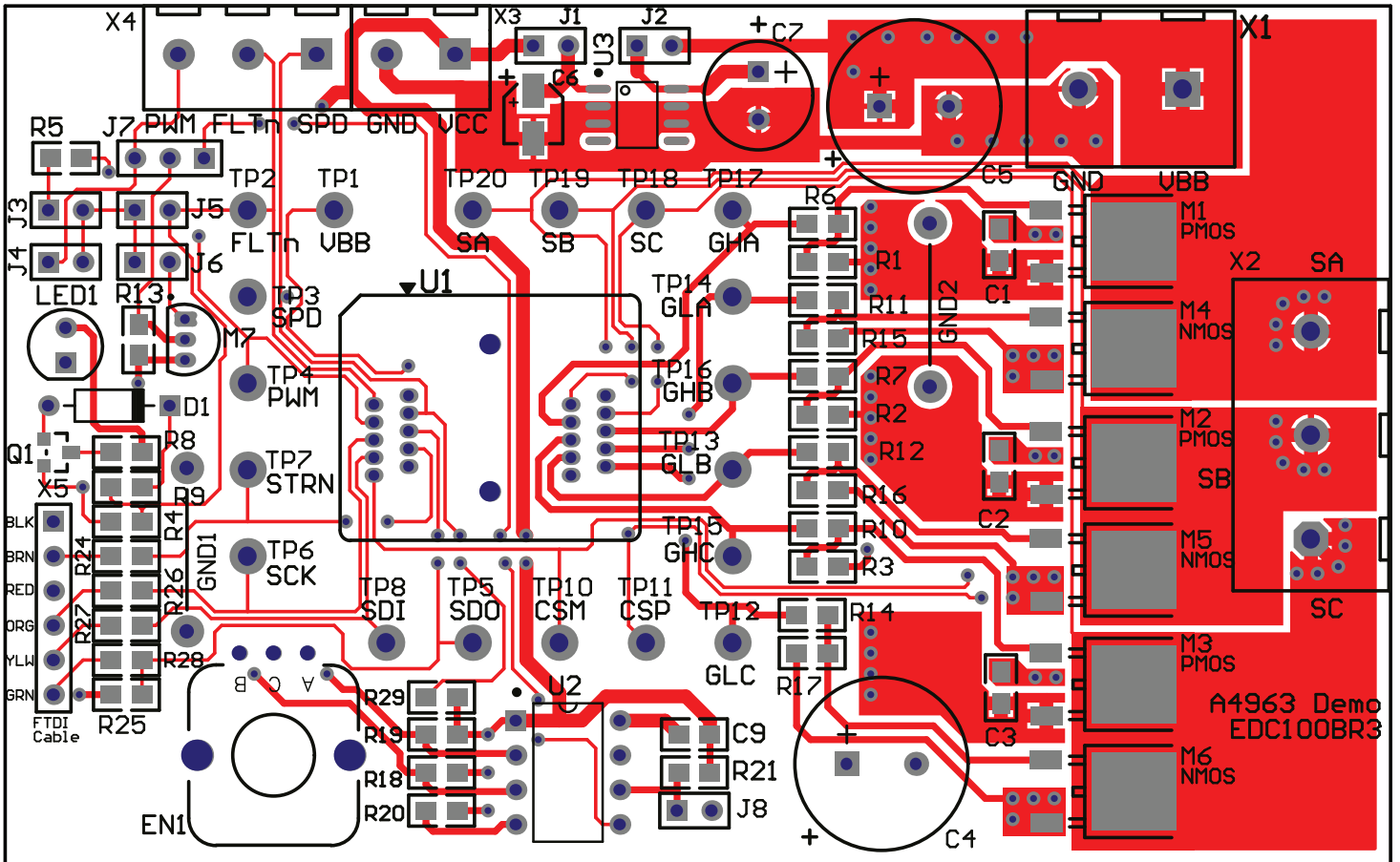
Top Layer Top Silk Top Pads

Btm Layer Btm Silk Btm Pads



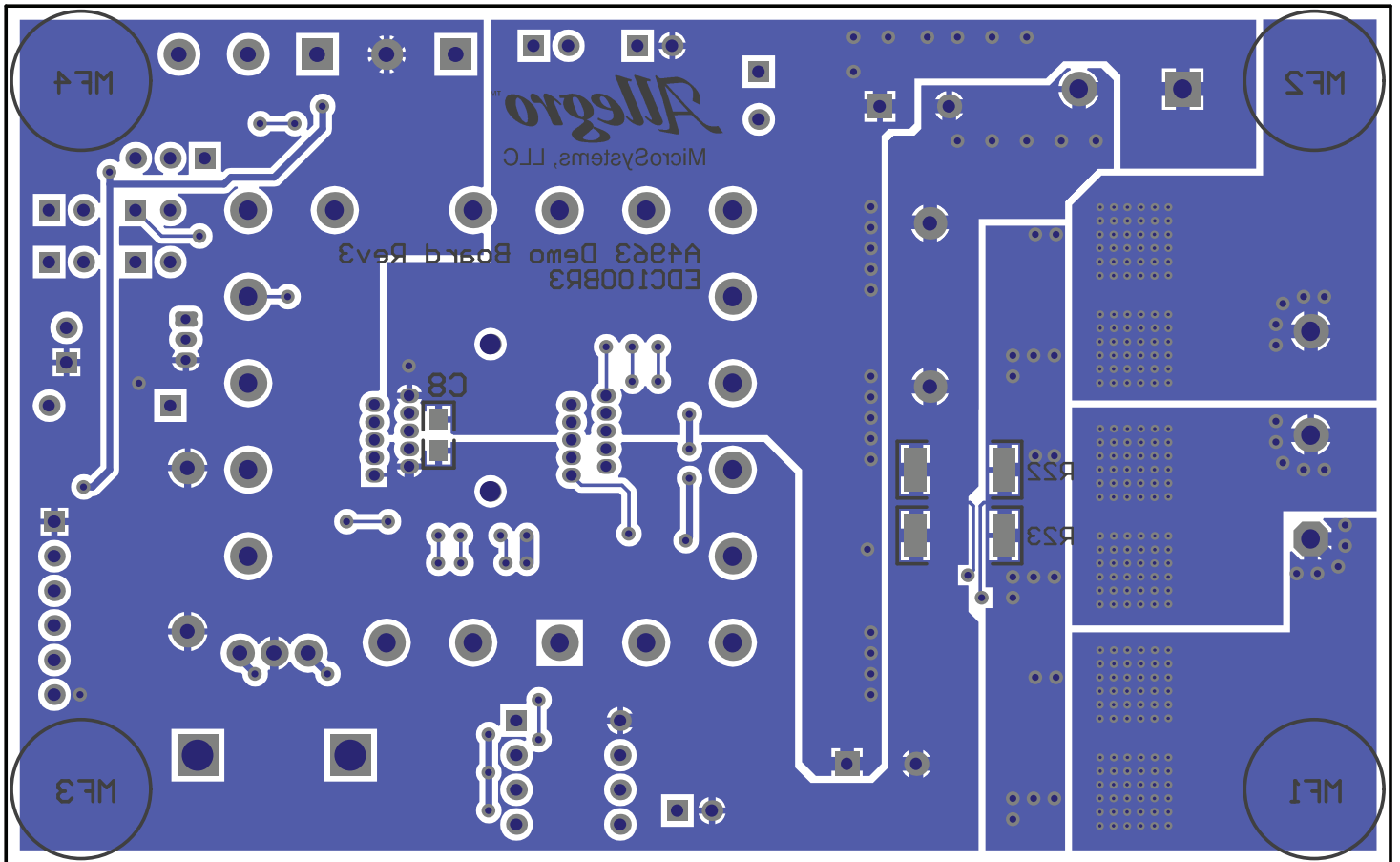
Top View Orientation Watermark

Top Layer Top Silk Top Pads

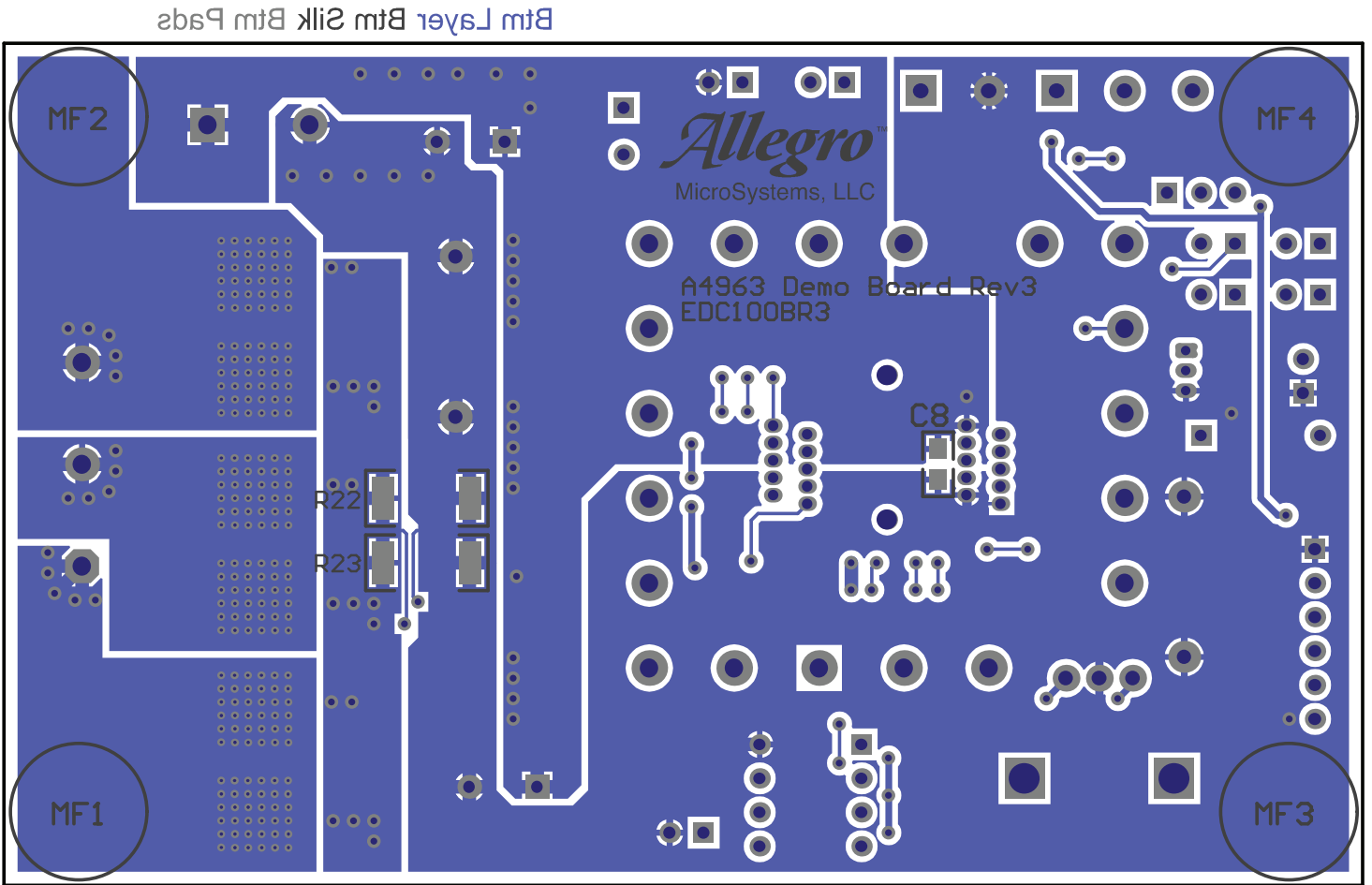


Top View Orientation Watermark

Btm Layer Btm Silk Btm Pads



Top View Orientation Watermark



Top View Orientation Watermark

## BILL OF MATERIALS

Designator	Value	Min Rating	Tol	Part Number	Footprint	Description	Qty	RS #1	Farnell #1
C1, C2, C3, C8, C9	100n	50V	X7R	\	SM : 0805	Capacitor : Ceramic Chip	5	264-4416	2070445
C4, C5	220u	50V	20%	UPM1H221MHD6	TH : 12.5mm Dia, 5mm Pitch, 15mm H	Capacitor : Alu Electrolytic Radial	2	\	8812616
C6	10u	25V	20%	EEF1E100AR	SM : Case B	Capacitor : Alu Electrolytic SMT	1	568-711	1539481
C7	47u	63V	20%	\	TH : 8mm Dia, 3.5mm Pitch	Capacitor : Alu Electrolytic Radial	1	191-7921	1848470
D1	\	\	\	1N4148	TH : DO-35	Diode : Axial, 100V, 0.2A	1	671-5477	9843680
EN1	\	\	\	EC12E1220401	TH : 6mm Shaft	Rotary Encoder : 12 det	1	623-4186	1520809
GND1, GND2	\	\	\	\	TH : 12mm Pitch, 20swg	Ground Bar : Tinned Copper Wire	2	355-063	\
J1, J2, J3, J4, J5, J6, J8	\	\	\	\	TH : SIL2, 2.54mm Pitch, 1x2	Jumper Header : Male 2-pin	7	251-8086	\
J7	\	\	\	\	TH : SIL3, 2.54mm Pitch, 1x3	Jumper Header : Male 3-pin	1	251-8092	\
LED1	\	\	\	\	TH : 5mm (T-1 3/4), 2.54mm Pitch	LED : 5mm, Red	1	228-5972	1652495
M1, M2, M3	\	\	\	SUD19P06-60	SM : TO-252 (DPAK)	Mosfet : P Channel, 19A, 60V	3	\	2101465
M4, M5, M6	\	\	\	STD30NF06L	SM : TO-252 (DPAK)	Mosfet : N Channel, 35A, 60V	3	687-5169	1752032
M7	\	\	\	BS170G	TH : TO-92 / TO-226 / SOT54	Mosfet : N Channel, 0.5A, 60V	1	544-9359	9556192
MF1, MF2, MF3, MF4	\	\	\	\	SM : 9.5-10.2mm Dia, 3.3-3.8mm H	Mount Foot : Adhesive Rubber	4	104-1721	1165068
PCB	\	\	\	EDC100BR3	FR4, 2oz Cu, 2 Layer	PCB : A4963 Demo Board	1	\	\
Q1	\	\	\	8C857B	SM : SOT23	Transistor : PNP, 65V, 0.1A	1	796-9868	1907654
R1, R2, R3, R15, R16, R17, R25	100k	0.125W	1%	\	SM : 0805	Resistor : Ceramic Chip	7	223-0691	2074335
R4, R5, R13, R18, R19, R20, R21, R29	10k	0.125W	1%	\	SM : 0805	Resistor : Ceramic Chip	8	740-8975	\
R6, R7, R10, R11, R12, R14	10R	0.125W	1%	\	SM : 0805	Resistor : Ceramic Chip	6	223-0152	9237240
R8	3k3	0.125W	1%	\	SM : 0805	Resistor : Ceramic Chip	1	223-0499	2074438
R9	47k	0.125W	1%	\	SM : 0805	Resistor : Ceramic Chip	1	223-0641	\
R22, R23	OR022	1W	1%	\	SM : 2512	Resistor : Ceramic Chip	2	294-5602	1173980
R24, R26, R27, R28	100R	0.125W	1%	\	SM : 0805	Resistor : Ceramic Chip	4	223-0297	\
TP1, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP10, TP11, TP12, TP13, TP14, TP15, TP16, TP17, TP18, TP19, TP20	\	\	\	\	TH : 1.33mm Dia Hole	Test Point : 2.1mm Loop, Red	19	262-2220	8731209
U1 (Socket)	\	\	\	OTS-20(28)-0.65-01	TH : TSSOP20 skt	Socket : Enplas (TSSOP20)	1	\	\
U1 (Device)	\	\	\	A4963	SM : eTTSOP20	Device : Allegro Motor Driver	0	\	\
U2	\	\	\	PIC12F1840	TH : DIP8	Device : Microchip 8 pin MCU.	1	743-2697	1971858
U3	\	\	\	LM2936HVMA-5.0	SM : SOIC8	Device : Voltage Regulator 5V	1	535-8843	7614240
X1	\	\	\	\	TH : 7.62mm (300mils) Pitch	Screw Terminal : 2-way	1	189-5966	\
X2	\	\	\	\	TH : 7.62mm (300mils) Pitch	Screw Terminal : 3-way	1	189-5972	\
X3	\	\	\	\	TH : 5.08mm (200mils) Pitch	Screw Terminal : 2-way	1	425-8720	\
X4	\	\	\	\	TH : 5.08mm (200mils) Pitch	Screw Terminal : 3-way	1	425-8736	\
X5	\	\	\	\	TH : 2.54mm Pitch, 1x6, SIL6	Connector : 6-way Header Unshrouded	1	360-6308	9733337
[ESDBAG_5x8]	\	\	\	\	\	ESD Bag : 127x203mm (5x8")	1	182-8815	4921185
[KNOB] [EN1]	\	\	\	\	\	Knob : 6mm D shaft (for EN1)	1	467-6106	1441165
[JMP_SHORT_R]	\	\	\	\	\	Jumper Short/Shunt Link : Red	8	251-8531	\
[SKT_DIP8] [U2]	\	\	\	\	TH : DIP8	IC Socket : DIP8 (for U2)	1	674-2479	1077344

<http://uk.RS-online.com/>  
<http://uk.FARNELL.com/>

**Revision History**

Number	Date	Description
–	September 6, 2016	Initial release

Copyright ©2016, Allegro MicroSystems, LLC

Allegro MicroSystems, LLC reserves the right to make, from time to time, such departures from the detail specifications as may be required to permit improvements in the performance, reliability, or manufacturability of its products. Before placing an order, the user is cautioned to verify that the information being relied upon is current.

Allegro's products are not to be used in any devices or systems, including but not limited to life support devices or systems, in which a failure of Allegro's product can reasonably be expected to cause bodily harm.

The information included herein is believed to be accurate and reliable. However, Allegro MicroSystems, LLC assumes no responsibility for its use; nor for any infringement of patents or other rights of third parties which may result from its use.

For the latest version of this document, visit our website:

[www.allegromicro.com](http://www.allegromicro.com)

