

FREQUENCY SHIFTER / BALANCED MODULATOR MODEL 285

BILL OF MATERIALS REV 2.0

PCB1

SEMICONDUCTORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
J201	Q1	1		106-J201
2N4342	Q2, Q4	2		eBay
PN3565	Q3	1		610-PN3565
TL071	IC1, IC2, IC3, IC4, IC5	5		595-TL071IP
LM301	IC6, IC7, IC8	3		926-LM301AN/NOBP
CD4011	IC9, IC10	2		595-CD4011BE
1N457	D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12	12		512-1N457

CAPACITORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
4.7uF	C1, C2, C3, C4, C5	5	TANTALUM AXIAL	74-173D475X9035WWE3
220pF	C6	1	CERAMIC 5MM LS	581-SA101A221JAR
47000pF	C8	1	CERAMIC 5MM LS	581-SA105C473KAR
0.1uF	F1, F2, F3, F4, F5, F6, F7, F8, F9, F10	10	CERAMIC 5MM LS	581-SA105E104M
15nF	C7	1	FILM 5MM LS	80-MMK5153J63J01TR16

RESISTORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
470R	R12, R46	2	1% 1/4W	271-470-RC
680R	R25, R37	2	1% 1/4W	271-680-RC
1K	R28, R32	2	1% 1/4W	271-1K-RC
2K2	R38	1	1% 1/4W	271-2.2K-RC
3K3	R14, R29, R30	3	1% 1/4W	271-3.3K-RC
6K8	R13, R16, R26	3	1% 1/4W	271-6.8K-RC
6K81	R23, R40	2	1% 1/4W	271-6.81K-RC
10K	R34, R35, R39, R41, R42, R43, R47, R48, R237, R238	10	1% 1/4W	271-10K-RC
15K	R15	1	1% 1/4W	271-15K-RC
20K	R5	1	1% 1/4W	271-20K-RC
22K	R27	1	1% 1/4W	271-22K-RC
33K	R10, R44	2	1% 1/4W	271-33K-RC
41K2	R9	1	1% 1/4W	271-41.2K-RC
43K2	R36	1	1% 1/4W	271-43.2K-RC
47K	R1, R2, R3, R4	4	1% 1/4W	271-47K-RC
49K9	R19, R21, R22	3	1% 1/4W	271-49.9K-RC
62K	R6, R20	2	1% 1/4W	271-62K-RC
330K	R8, R24, R31	3	1% 1/4W	271-330K-RC
680K	R11	1	1% 1/4W	271-680K-RC
1M	R45	1	5% 1/4W	291-1M-RC
10M	R18	1	5% 1/4W	291-10M-RC
22M	R17, R33	2	5% 1/4W	291-22M-RC
20K	TR1	1	ANGLED SINGLE TURN	652-3362X-1-203LF
100K	TR2, TR3	2	ANGLED SINGLE TURN	652-3362X-1-104LF
10-100K LIN	POT1, POT2, POT4, POT5	4	16MM ANGLED	http://smallbear-electronics.mvbiacommerce.com/aloha-sinale-aana-16mm-riiht-anale-oc-mount/
10-100K LOG	POT3	1	16MM ANGLED	http://smallbear-electronics.mvbiacommerce.com/aloha-sinale-aana-16mm-riiht-anale-oc-mount/

MISC

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
DPDT ON-ON	SW1	1	TOGGLE SWITCH	633-M202201
	TP1	1	TEST POINT	534-5122
	J1, J2, J3, J4, J5, J6, J7, J8, J9, J10, J11, J12, J13	13	TINIJAX	502-41
		2	BANANA JACK BLACK	530-108-0903-1
	PLD1	1	2x10PIN MALE HEADER	517-929836-01-10-RK
		1	FRONT PANEL	http://sidarthianinnovations.bigcartel.com/product/285-4u-silk-screened-brush-aluminum
		1	ROGAN KNOBS SET	http://www.weedywhizz.com/buchla-cases-and-parts/buchla-diy-parts/knob-sets/

PCB2

SEMICONDUCTORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
2N3906	Q5, Q6, Q7, Q8, Q9, Q10, Q17, Q18, Q19, Q20, Q21, Q27, Q28, Q29, Q30, Q31, Q32, Q39, Q40, Q41, Q42, Q43	22		610-2N3906
J201	Q11, Q12, Q13, Q14, Q15, Q16, Q22, Q23, Q24, Q25, Q26, Q33, Q34, Q35, Q36, Q37, Q38, Q44, Q45, Q46, Q47, Q48	22		106-J201
TL071	IC11, IC12, IC13, IC14	4		595-TL071IP

CAPACITORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
4.7uF	C9, C17, C24, C25, C33, C40	6	TANTALUM AXIAL	74-173D475X9035WWE3
0.1uF	F11, F12, F13, F14	4	CERAMIC 5MM LS	581-SA105E104M
220pF	C10, C26	2	FILM 5MM LS	505-FKP2220/100/2.5
470pF	C23, C39	2	FILM 5MM LS	505-FKP2470/100/2.5
1nF	C15, C16, C18, C31, C32, C34	6	FILM 5MM LS	80-MMK5102J50J01L4
4.7nF	C22, C38	2	FILM 5MM LS	80-MMK5472J50J01TR18
10nF	C14, C30	2	FILM 5MM LS	80-MMK5103J63J01TR18
47nF	C21, C37	2	FILM 5MM LS	80-MMK5473J100J01L4
100nF	C13, C29	2	FILM 5MM LS	80-MMK5104J50J01TR18
0.47uF	C20, C36	2	FILM 5MM LS	80-MMK5474K50J01L4
1uF	C11, C12, C19, C27, C28, C35	6	FILM 5MM LS	80-R82DC4100AA60J

RESISTORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
470R	R69, R78, R123, R132	4	1% 1/4W	271-470-RC
	R56, R57, R58, R59, R60, R61, R85, R86, R87, R88, R89, R110, R111, R112, R113, R114, R115, R139, R140, R141, R142, R143	22	1% 1/4W	271-2.2K-RC
2K2	R54, R75, R108, R129	4	1% 1/4W	271-4.99K-RC
4K99	R49, R50, R51, R52, R53, R62, R70, R71, R72, R73, R74, R79, R80, R81, R82, R83, R98, R99, R100, R101, R102, R103, R104, R105, R106, R107, R116, R124, R125, R126, R127, R128, R133, R134, R135, R136, R137, R152, R153, R154, R155, R156	42	1% 1/4W	271-10K-RC
10K	R67, R121	2	1% 1/4W	271-15K-RC
15K	R91, R92, R93, R94, R145, R146, R147, R148	8	1% 1/4W	271-22K-RC
22K	R64, R65, R66, R68, R118, R119, R120, R122	8	1% 1/4W	271-49.9K-RC
49K9	R55, R76, R77, R84, R90, R95, R109, R130, R131, R138, R144, R149	12	1% 1/4W	271-100K-RC
100K	R96, R97, R150, R151	4	1% 1/4W	271-330K-RC
330K	R63, R117	2	1% 1/4W	271-680K-RC
680K				
20K	TR5, TR6, TR7, TR8, TR10, TR11, TR12, TR13	8	ANGLED SINGLE TURN	652-3362X-1-203LF
100K	TR4, TR9	2	ANGLED SINGLE TURN	652-3362X-1-104LF

MISC

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
	PLD2	1	2x10PIN MALE HEADER	517-929836-01-10-RK
	PBD1	1	2x10PIN FEMALE HEADER	517-929975-01-10-RK

PCB3

SEMICONDUCTORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
MC1494	IC15, IC16, IC20	3		eBay
TL071	IC17, IC18, IC19, IC21, IC22	5		595-TL071IP
PN3566	Q49, Q50	2	PN3565 SHOULD WORK	eBay

CAPACITORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
47uF	C41, C42, C43, C44, C52, C54, C55	7	TANTALUM AXIAL	74-173D476X9010XE3
4.7uF	C47, C48	2	TANTALUM AXIAL	74-173D475X9035WWE3
22pF	C51	1	CERAMIC 5MM LS	581-SA102A220J
10pF	C49, C50	2	CERAMIC 5MM LS	581-SA102A100J
100pF	C45, C46, C53	3	CERAMIC 5MM LS	581-SA102A101J
0.1uF	F15, F16, F17, F18, F19, F20, F21, F22, F23, F24, F25	11	CERAMIC 5MM LS	581-SA105E104M

RESISTORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
47R	R233, R234	2	1% 1/4W	271-47-RC
220R	R169, R170, R209, R228	4	1% 1/4W	271-220-RC
470R	R214	1	1% 1/4W	271-470-RC
1K	R157, R158, R165, R166, R206, R207	6	1% 1/4W	271-1K-RC
3K3	R232, R235	2	1% 1/4W	271-3.3K-RC
4K7	R163, R174, R189, R215	4	1% 1/4W	271-4.7K-RC
6K8	R216, R217, R236	3	1% 1/4W	271-6.8K-RC
10K	R164, R167, R176, R186, R187, R199, R230	7	1% 1/4W	271-10K-RC
12K	R161, R172, R175, R190, R191, R192, R204, R205, R211, R218, R226, R227	12	1% 1/4W	271-12K-RC
13K	R229	1	1% 1/4W	271-13K-RC
15K	R181, R182, R185, R197, R198, R202, R221, R222, R225	9	1% 1/4W	271-15K-RC
18K	R162, R173, R212	3	1% 1/4W	271-18K-RC
22K	R188, R203	2	1% 1/4W	271-22K-RC
47K	R177, R193	2	1% 1/4W	271-47K-RC
56K	R213	1	1% 1/4W	271-56K-RC
120K	R231	1	1% 1/4W	271-120K-RC
150K	R178, R196	2	1% 1/4W	271-150K-RC
220K	R179, R180, R183, R194, R195, R200, R219, R220, R223	9	1% 1/4W	271-220K-RC
470K	R160, R171, R184, R201, R210, R224	6	1% 1/4W	271-470K-RC
1M5	R159, R168, R208	3	5% 1/4W	291-1.5M-RC
100K	TR14, TR15, TR16, TR17, TR18, TR19, TR20, TR21, TR22, TR23, TR24, TR25, TR26, TR27	14	SINGLE TURN	652-3362P-1-104LF

MISC

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
VTL5C3	TP2, TP3, TP4, TP5, TP6, TP7, TP8	7	TEST POINT	534-5122
	V1, V2	2	SINGLE VACTROL	https://www.thonk.co.uk/shop/vactrols-vtl/
	PBD2	1	2x10PIN FEMALE HEADER	517-929975-01-10-RK
		1	POWER CONNECTOR	587-306-50-010