

ANALOGUE WAVEFORM GENERATOR MODEL 25S

BILL OF MATERIALS REV 1.0

PCB1

SEMICONDUCTORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
1N457	D1, D2, D3, D4, D5	5		512-1N457
CD4013	IC2	1		595-CD4013BE
CD4017	IC1	1		595-CD4017BE
CD4030	IC12	1		595-CD4030BE
CD4040	IC3	1		595-CD4040BE
TL072	IC4, IC5	2		595-TL072CP
2N3904	Q1, Q2	2		610-2N3904

CAPACITORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
47uF	C10	1	ELECTROLYTIC 2MM LS	667-ECE-A1CKA470
100pF	C6, C11, C13	3	CERAMIC 5MM LS	581-SA102A101J
220pF	C7	1	CERAMIC 5MM LS	581-SA101A221JAR
0.01uF	C1, C2, C4, C5	4	CERAMIC SMT 0805	80-C0805Y103K1RAUTO
0.1uF	C3, C8, C9, C12	4	CERAMIC SMT 0805	GRM21BR71H104KA01L

RESISTORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
470R	R5, R6, R7, R8, R9, R12, R13, R14, R16, R35, R36	11	1% 1/4W	271-470-RC
680R	R29, R39, R54, R57, R62	6	1% 1/4W	271-680-RC
1K	R1	1	1% 1/4W	271-1K-RC
2K2		1	1% 1/4W	271-2.2K-RC
3K3	R38	1	1% 1/4W	271-3.3K-RC
4K99	R17, R18, R41, R42	4	1% 1/4W	271-4.99K-RC
10K	R2, R3, R4, R10, R11, R15, R25, R27, R28, R30, R44, R48, R49	13	1% 1/4W	271-10K-RC
15K	R32, R33, R34, R37, R53, R56	6	1% 1/4W	271-15K-RC
20K	R40	1	1% 1/4W	271-20K-RC
49K9	R51	1	1% 1/4W	271-49.9K-RC
68K	R22, R24, R45, R47	4	1% 1/4W	271-68K-RC
75K	R26	1	1% 1/4W	271-75K-RC
80K6	R58, R60	2	1% 1/4W	271-80.6K-RC
100K	R23, R46	2	1% 1/4W	271-100K-RC
120K	R59, R61	2	1% 1/4W	271-120K-RC
150K	R31, R52	2	1% 1/4W	271-150K-RC
200K	R20, R50	2	1% 1/4W	271-200K-RC
2M2	R21, R55	2	5% 1/4W	291-2.2M-RC
10M	R19, R43	2	5% 1/4W	271-10M-RC
10K-100K LIN	POT1, POT5, POT9	3	9MM PLASTIC SHAFT	https://www.thonk.co.uk/shop/ttpts/
10K-100K LOG	POT4, POT7	2	9MM	688-RK09D113F25C0A
10K-100K LIN	POT3, POT8, POT10, POT12, POT13, POT15	6	9MM	688-RK09D1130A1N
10K-100K LIN	POT2, POT6, POT11, POT14,	4	9MM CENTER DETENT	688-RK09D113000F
20K	TR1, TR2, TR4, TR5, TR6, TR8	6	SINGLE TURN	652-3362P-1-203LF
100K	TR3, TR7	2	SINGLE TURN	652-3362P-1-104LF

MISC

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
	J1, J2, J3, J4, J5, J6, J7, J8	8	TINJAX	502-41
	LED9	1	RED 3MM LED	604-WP132XID
	LED3, LED4, LED5, LED6, LED7, LED8	2	GREEN 3MM LED	604-WP132XGD
	LED1, LED2	6	ORANGE 3MM LED	604-WP132XND
	LED10	1	BICOLOR COMMON ANODE	3BC-3-CA-F
	PLD1	1	PLD 14 PIN (FEMALE)	517-929975-01-07-RK
	PLD2	1	PLD 12 PIN (FEMALE)	517-929975-01-06-RK
	PLD3	1	PLD 10 PIN (FEMALE)	517-929975-01-05-RK
		6	BANANA JACK BLACK	530-108-0903-1
		1	BANANA JACK ORANGE	530-108-0906-1
		1	BANANA JACK BLUE	530-108-0910-1
	SW2, SW3, SW4	3	TACT SWITCH GREY	611-D6R10F1LFS
	SW1	1	TACT SWITCH GREEN	611-D6R50F1LFS
		2	LARGE SKIRTED D KNOB	https://www.thonk.co.uk/shop/intelliel-style-knobs/
		4	LARGE D KNOB	https://www.thonk.co.uk/shop/intelliel-style-knobs/
		6	SMALL D KNOB	https://www.thonk.co.uk/shop/intelliel-style-knobs/
		6	SMALL GREY CAP	https://www.thonk.co.uk/shop/intelliel-style-knobs/
		6	LARGE GREY CAP	https://www.thonk.co.uk/shop/intelliel-style-knobs/

PCB2

SEMICONDUCTORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
1N457	D6, D7, D8, D9	4		512-1N457
TL072	IC6, IC7, IC8, IC13, IC14	5		595-TL072CP
DG445	IC9, IC16	2		781-DG445DJ-E3
LM301	IC10, IC12	2		926-LM301AN/NOPB
LM311	IC11, IC15	2		926-LM311N/NOPB
THAT340	Q3, Q6	2		887-340P14-U
2N3904	Q4, Q5, Q7, Q8	4		610-2N3904
J201	Q9	1		http://smallbear-electronics.mybigcommerce.com/transistor-fet-j201-national-semi/

CAPACITORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
47uF	C25, C38	2	ELECTROLYTIC 2MM LS	667-ECE-A1CKA470
470nF	C14	1	FILM 5MM LS	871-B32529C1474K189
47nF	C21	1	FILM 5MM LS	871-B32529C1473J
4.7nF	C15, C31	2	FILM 5MM LS	871-B32529C1472J
22pF	C35	1	CERAMIC 5MM LS	581-SA102A220J
100pF	C22, C37, C39	3	CERAMIC 5MM LS	581-SA102A101J
220pF	C18, C33	2	CERAMIC 5MM LS	581-SA101A221JAR
0.01uF	C19, C34	2	CERAMIC 5MM LS	581-SA105E103M
0.1uF	C16, C17, C20, C23, C24, C26, C27, C28, C29, C30, C32, C36, C40	13	CERAMIC SMT 0805	GRM21BR71H104KA01L

RESISTORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
680R	R124, R129	2	1% 1/4W	271-680-RC
1K	R63, R76, R78, R91, R93, R94, R95, R117, R127, R132	10	1% 1/4W	271-1K-RC
2K49	R89	1	1% 1/4W	271-2.49K-RC
4K7	R68	1	1% 1/4W	271-4.7K-RC
4K99	R107, R109	2	1% 1/4W	271-4.99K-RC
5K11	R74	1	1% 1/4W	271-5.11K-RC
6K19	R82	1	1% 1/4W	271-6.19K-RC
6K8	R88, R118, R119	3	1% 1/4W	271-6.8K-RC
10K	R64, R67, R70, R71, R77, R79, R97, R98, R99, R100, R103, R106, R111, R122, R133	16	1% 1/4W	271-10K-RC
15K	R84	1	1% 1/4W	271-15K-RC
20K	R83	1	1% 1/4W	271-20K-RC
22K	R69, R110, R116	3	1% 1/4W	271-22K-RC
24K	R85, R104	2	1% 1/4W	271-24K-RC
28K7	R105	1	1% 1/4W	271-28.7K-RC
30K	R121	1	1% 1/4W	271-30K-RC
33K	R90, R102, R125, R128	4	1% 1/4W	271-33K-RC
47K	R92, R123, R130	3	1% 1/4W	271-47K-RC
68K	R80, R115	2	1% 1/4W	271-68K-RC
88K7	R81	1	1% 1/4W	271-88.7K-RC
100K	R65, R66, R75, R96, R101, R108, R112, R126, R131	9	1% 1/4W	271-100K-RC
121K	R72, R113	2	1% 1/4W	271-121K-RC
330K	R73, R114	2	1% 1/4W	271-330K-RC
1M5	R87, R120	2	5% 1/4W	291-1.5M-RC
3M3	R86	1	5% 1/4W	291-3.3M-RC
11K		1	0603 SMT	71-CRCW0603-11K-E3
1K	PTC1, PTC2	2	TEMPCO	https://www.thonk.co.uk/shop/tempco-resistor-anakeohm-1-3300ppm-x3/
20K	TR9	1	SINGLE TURN	652-3362P-1-203LF

MISC

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
	PBD1	1	PLD 14 PIN (MALE)	517-929836-01-07-RK
	PBD2, PLD5	2	PLD 12 PIN (MALE)	517-929836-01-06-RK
	PBD3, PLD4	2	PLD 10 PIN (MALE)	517-929836-01-05-RK

PCB3

SEMICONDUCTORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
1N457	D10, D11, D12, D13, D14, D15, D16, D17	8		512-1N457
1N5228	Z1	1		78-1N5228B
TL071	IC17	1		595-TL071CP
TL072	IC18, IC20, IC22, IC23, IC24, IC25, IC26, IC32, IC33, IC34, IC36, IC37, IC38, IC39	14		595-TL072CP
DG445	IC19	1		781-DG445DJ-E3
LM311	IC21	1		926-LM311N/NOPB
CA3130	IC27, IC28, IC29, IC30, IC31	5		968-CA3130EZ
V2164	IC35, IC40	2		http://smallbear-electronics.mybigcommerce.com/ic-v2164d/
2N3958	Q10	1		EBAY

CAPACITORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
10uF	C42, C44, C46, C48, C50, C52, C69, C100	8	ELECTROLYTIC 2MM LS	647-UPW1V100MDD
47nF	C58	1	FILM 5MM LS	871-B32529C1473J
10pF	C54	1	CERAMIC 5MM LS	581-SA102A100JAC
47pF	C68, C77, C80, C84, C88	5	CERAMIC 5MM LS	581-SA102A470J
100pF	C60, C62, C85, C87, C90, C91, C92, C102, C104, C105, C106	11	CERAMIC 5MM LS	581-SA102A101J
470pF	C65, C71	2	CERAMIC 5MM LS	581-SA101A471JAR
330pF	C107	1	CERAMIC 5MM LS	80-C410C331J1G-TR
560pF	C86, C89, C93, C94, C101, C103, C108, C109	8	CERAMIC 5MM LS	810-FK28C0G2A561J
2000pF	C55	1	CERAMIC 5MM LS	80-C410C222K1R-TR
0.01uF	C73	1	CERAMIC 5MM LS	581-SA105E103M
0.1uF	C41, C43, C45, C47, C49, C51, C53, C57, C59, C61, C64, C66, C67, C72, C74, C75, C76, C79, C82, C83, C95, C96, C97, C98, C99, C110, C111, C112, C113, C114, C115	31	CERAMIC SMT 0805	GRM21BR71H104KA01L

RESISTORS

VALUE	DESIGNATOR	QTY	DESCRIPTION	MOUSER PART#
220R	R234, R262	2	1% 1/4W	271-220-RC
470R	R193	1	1% 1/4W	271-470-RC
499R	R220, R222, R240, R241, R246, R249, R268, R270	8	1% 1/4W	271-499-RC
1K	R137, R139, R159, R160, R248, R257	5	1% 1/4W	271-1K-RC
1K8	R166	1	1% 1/4W	271-1.8K-RC
2K	R169	1	1% 1/4W	271-2K-RC
3K3	R185	1	1% 1/4W	271-3.3K-RC
4K32	R245	1	1% 1/4W	271-4.32K-RC
4K7	R140, R143, R198, R212	4	1% 1/4W	271-4.7K-RC
6K8	R165	1	1% 1/4W	271-6.8K-RC
7K5	R242, R269	2	1% 1/4W	271-7.5K-RC
8K2	R155	1	1% 1/4W	271-8.2K-RC
10K	R138, R141, R142, R144, R149, R156, R164, R170, R171, R175, R176, R179, R186, R187, R203, R210, R211, R215, R217, R219, R258, R261	22	1% 1/4W	271-10K-RC
13K	R174	1	1% 1/4W	271-13K-RC
15K	R136, R200	2	1% 1/4W	271-15K-RC
18K	R152	1	1% 1/4W	271-18K-RC
20K	R145, R194	2	1% 1/4W	271-20K-RC
22K	R148, R154, R158	3	1% 1/4W	271-22K-RC
24K9	R191, R205, R221	3	1% 1/4W	271-24.9K-RC
30K	R206, R223, R225, R227, R228, R232, R233, R235, R236, R238, R250, R251, R252, R255, R256, R263, R264, R266	18	1% 1/4W	271-30K-RC
30K1	R197	1	1% 1/4W	271-30.1K-RC
33K	R146, R188, R213, R224, R237, R243, R265	7	1% 1/4W	271-33K-RC
43K2	R181	1	1% 1/4W	271-43.2K-RC
47K	R147, R150, R260	3	1% 1/4W	271-47K-RC
49K9	R153, R182, R184, R226, R239	5	1% 1/4W	271-49.9K-RC
54K9	R267	1	1% 1/4W	271-54.9K-RC
56K	R190	1	1% 1/4W	271-56K-RC
61K9	R229	1	1% 1/4W	271-61.9K-RC
68K	R180, R201, R204, R214, R247	5	1% 1/4W	271-68K-RC
71K5	R167	1	1% 1/4W	