

PART	VALUE	PKG	DESCRIPTION	NOTES	EXAMPLE PART
A1C1	10uF	C1210	SMT Capacitor	AC coupling cap for audio output. Jumper for DC coupling of DAC1	12103C106KAT2A
A1C2	0.1uF	R0805	SMT Capacitor	HP cap for audio output. Tweak with A1R4 for corner freq	08055C104JAT2A
A1R1	100kΩ	R0805	SMT Resistor	AC coupling resistor with A1C1. Tweak for HP corner freq	
A1R2	3300Ω	R0805	SMT Resistor	Audio output gain network with A1R3. Tweak for audio output level	
A1R3	10kΩ	R0805	SMT Resistor	Audio output gain network with A1R2. Tweak for audio output level	
A1R4	150Ω	R0805	SMT Resistor	Audio output protection resistor	
A2C1	10uF	C1210	SMT Capacitor	AC coupling cap for audio output. Jumper for DC coupling of DAC2	12103C106KAT2A
A2C2	0.1uF	C0805	SMT Capacitor	HP cap for audio output. Tweak with A2R4 for corner freq	08055C104JAT2A
A2R1	100kΩ	R0805	SMT Resistor	AC coupling resistor with A1C1. Tweak for HP corner freq	
A2R2	3300Ω	R0805	SMT Resistor	Audio output gain network with A2R3. Tweak for audio output level	
A2R3	10kΩ	R0805	SMT Resistor	Audio output gain network with A2R2. Tweak for audio output level	
A2R4	150Ω	R0805	SMT Resistor	Audio output protection resistor	
AIN_BIAS_R1	47kΩ	R0805	SMT Resistor	Voltage divider for biasing negative input of analog input opamp	
AIN_BIAS_R2	15kΩ	R0805	SMT Resistor	Voltage divider for biasing negative input of analog input opamp	
AIN_R1A	100kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R1B	30kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R2A	100kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R2B	30kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R3A	100kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R3B	30kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R4A	100kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R4B	30kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R5A	100kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R5B	30kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R6A	100kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R6B	30kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R7A	100kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R7B	30kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R8A	100kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R8B	30kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R9A	100kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R9B	30kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R10A	100kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R10B	30kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R11A	100kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R11B	30kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R12A	100kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
AIN_R12B	30kΩ	R0805	SMT Resistor	Analog input gain setting for inverting configuration	
C1	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C2	10uF	C1210	SMT Capacitor	HP filter for noise circuit	
C3	100uF	6.6mm	SMT Electrolytic	Power rail filter capacitor	
C3V	100uF	6.6mm	SMT Electrolytic	Power rail filter capacitor	
C4	100uF	6.6mm	SMT Electrolytic	Power rail filter capacitor	
C5	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C5V	100uF	6.6mm	SMT Electrolytic	Power rail filter capacitor	
C6	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C7	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C8	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C9	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C10	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C11	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C12	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C13	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C14	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C15	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C16	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C17	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C18	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C19	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C20	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C22	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C23	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C24	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C25	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C26	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C27	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C28	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C29	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
C30	0.1uF	C0805	SMT Capacitor	Decoupling capacitor for power rail	08055C104JAT2A
CCV1	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV2	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV3	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV4	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV5	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV6	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV7	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV8	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV9	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV10	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV11	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV12	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV13	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV14	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV15	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CCV16	0.1uF	C0805	SMT Capacitor	LP filter for CV output	08055C104JAT2A
CVA1	TL074	SOIC14	Op Amp	CV output op amp	
CVA5	TL074	SOIC14	Op Amp	CV output op amp	
CVA9	TL074	SOIC14	Op Amp	CV output op amp	
CVA13	TL074	SOIC14	Op Amp	CV output op amp	
DAC1	MCP4822E	SOIC8	SPI DAC	CV output DAC	
DAC3	MCP4822E	SOIC8	SPI DAC	CV output DAC	
DAC5	MCP4822E	SOIC8	SPI DAC	CV output DAC	
DAC7	MCP4822E	SOIC8	SPI DAC	CV output DAC	
DAC9	MCP4822E	SOIC8	SPI DAC	CV output DAC	

DAC11	MCP4822E	SOIC8	SPI DAC	CV output DAC
DAC13	MCP4822E	SOIC8	SPI DAC	CV output DAC
DAC15	MCP4822E	SOIC8	SPI DAC	CV output DAC
DAC_BIAS_R1	1000Ω	R0805	SMT Resistor	Voltage divider for biasing negative input of CV output opamp
DAC_BIAS_R2	5000Ω	R0805	SMT Resistor	Voltage divider for biasing negative input of CV output opamp
IC1	TL074D	SOIC14	Op Amp	
IC2	TL074D	SOIC14	Op Amp	
IC3	TL074D	SOIC14	Op Amp	
IC6	TL074D	SOIC14	Op Amp	
L1	Ferrite	R0805	SMT Ferrite	Power suply noise filter
L2	Ferrite	R0805	SMT Ferrite	Power suply noise filter
LVC1	74245	SOIC20W	Discrete Logic	3.3V to 5V logic level converter/driver
LVC2	74245	SOIC20W	Discrete Logic	3.3V to 5V logic level converter/driver
MISO_PU	OMIT	R0805	SMT Resistor	SPI pullup resistors if needed
MOSI_PU	OMIT	R0805	SMT Resistor	SPI pullup resistors if needed
R1	10kΩ	R0805	SMT Resistor	
R2	10kΩ	R0805	SMT Resistor	
R3	10kΩ	R0805	SMT Resistor	
R4	10kΩ	R0805	SMT Resistor	
R5	10kΩ	R0805	SMT Resistor	
R6	10kΩ	R0805	SMT Resistor	
R7	10kΩ	R0805	SMT Resistor	
RCV1A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV1B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV2A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV2B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV3A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV3B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV4A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV4B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV5A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV5B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV6A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV6B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV7A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV7B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV8A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV8B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV9A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV9B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV10A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV10B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV11A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV11B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV12A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV12B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV13A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV13B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV14A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV14B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV15A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV15B	5000Ω	R0805	SMT Resistor	CV output gain network
RCV16A	1000Ω	R0805	SMT Resistor	CV output gain network
RCV16B	5000Ω	R0805	SMT Resistor	CV output gain network
RDN1	10kΩ	R0805	SMT Resistor	Analog noise circuit resistor
RDN2	10kΩ	R0805	SMT Resistor	Analog noise circuit resistor
RN1	4.7kΩ	R0805	SMT Resistor	Analog noise circuit resistor
RN2	1.5MΩ	R0805	SMT Resistor	Analog noise circuit resistor
RN3	10kΩ	R0805	SMT Resistor	Analog noise circuit resistor
RN4	4700Ω	R0805	SMT Resistor	Analog noise circuit resistor
RN5	2000Ω	R0805	SMT Resistor	Analog noise circuit resistor
RNO1	10Ω	R0805	SMT Resistor	Analog noise circuit resistor
RNO2	OMIT	R0805	SMT Resistor	Analog noise circuit resistor
SCK_PU	OMIT	R0805	SMT Resistor	SPI pullup resistors if needed
SCL_PU	3300Ω	R0805	SMT Resistor	SPI pullup resistors if needed
SDA_PU	3300Ω	R0805	SMT Resistor	SPI pullup resistors if needed
T1			NPN BJT	Analog noise circuit transistor
T2			NPN BJT	Analog noise circuit transistor
T3			NPN BJT	Analog noise circuit transistor
U\$3		SOIC8	N/P MOSFET	Reverse voltage protection
U1	PCA9685PW		LED Controller	I2S PWM LED controller
V1	744514	SOIC24R	Discrete Logic	3-to1 line decoder for running clock display