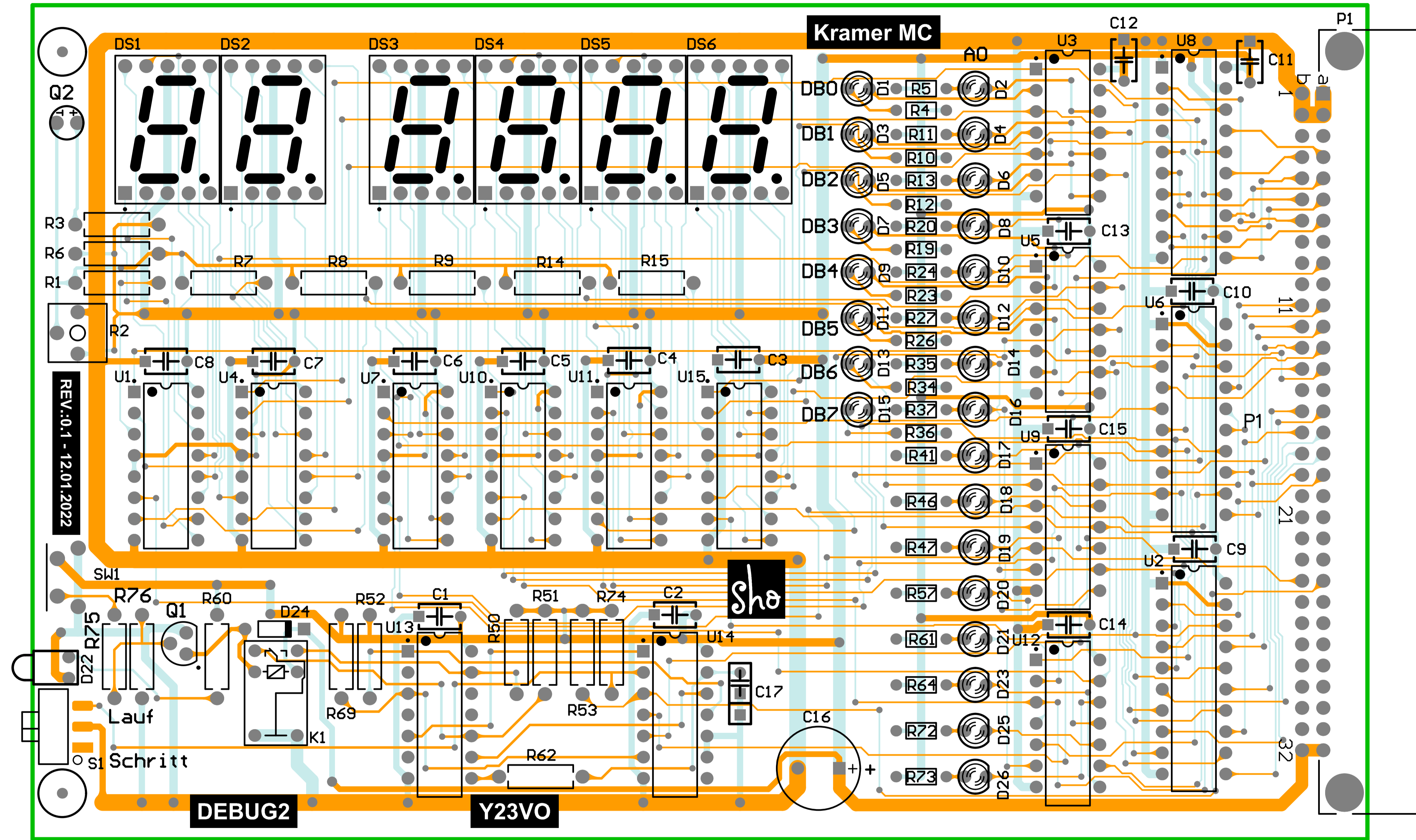


Alternative assembly for D346D:  
 Brightness control with phototransistor Q2, R3 and R6  
 Brightness control with potentiometer, only assembly R2

Variant of Kr-Debug2 D346

Title <b>Kramer MC Y23VO</b>		S.Hofmann info@shotech.de www.shotech.de	
Size: A3	Description: Debug 2	Revision: 0.0	Sho
Date: 02.10.2023	Time: 00:33:37	Sheet 1 of 1	
File: Kramer-Debug2.SchDoc			





Bearbeiter: S. Hofmann  
 Tel: 040 /  
 Fax: 040 / 76906856  
 Email: shop@shotech.de

## Bill of Materials

<b>Datum:</b>	2. Oktober 2023
<b>Zeit:</b>	0:33:46
<b>Variante:</b>	Variant of Kr-Debug2 D346
<b>Bezeichnung:</b>	Kramer MC Y23VO
<b>Revision:</b>	0.0
<b>Description:</b>	Debug 2

Quantity	Designator	Footprint	Bemerkung	Value	MFT	Order-Code	Second-source	shotech	Reichelt
15	C9, C10, C11, C12, C13, C14,	CAP_Radial_5MM	100nF/50V/±10%/X7R/RM 5.08	100nF	Vishay / BC Components	K104K15X7RF53H5	C322C104K5R5TA - shotech	1347	
1	C16	CAPPR5-10x12 - RM5	470uF/16V/20%/5000h/RM5.0, ESR 53mR, Ripple 1030mA	470µF/16V	Chang	GK1C471MG125B50CE0		1340	
1	C17	.5mmx7mm	Vs-Kond 1nF 100V X7R RM2.54	1n	KEMET	C315C102K1R5TA		2081	
8	D15	LED3MM	LED diffus grün 50mcd 60° 3mm	LED_3mm_GREEN	Everlight	204-10SYGD/S530-E2		1323	EVL 204-10SYGD
16	D16, D17, D18, D19, D20, D21,	LED3MM - spacer - yellow	LED diffus gelb 200mcd 40° 3mm	LED_3mm_YELLOW	Everlight	204-10UYD/S530-A3		1322	EVL 204-10UYD
1	D22	LED-A214B	LED diffus grün 200mcd 25° 3mm	LED-A214B	Everlight	A214B/SYG/S530-E2		2004	
1	D24	DO-35	Dioden (Allzweck, Leistung, Schaltung) Vr/75V Ior/150mA T/R	1N4148	On Semiconductors	1N4148TR		1594	
6	DS1, DS2, DS3, DS4, DS5, DS6	LEDDIP-10/13RHD	7Seg 13,2mm CA grün 2,2mcd	S516SYGWA/S530-E2	Everlight	S516SYGWA/S530-E2		2110	
2	HS1, HS2		Head Screws M2,5 x 10	Head Screws M2,5 x 10	frei			2103	
1	K1	REL-HD23	Relais 1xU 2A 5V 167R	HFD23/005-1ZS	Hongta	HFD23/005-1ZS		2063	
1	KL1		Circuit board Kramer MC Debug2	KRM-DEBUG2-Z80-PCB	frei	KRM-DEBUG2-Z80-PCB		2368	
24	LH7, LH8, LH9, LH10, LH11,		LED 3mm Abstandshalter 4mm	MAH 304	Fischer Elektronik	MAH 304		2366	
1	P1	0902164x921	Messerteiste A+B gewinkelt 64polig	A-BM64ABR	Assmann WSW	A-BM64ABR		2021	
1	Q1	SC_TO-92	N-VMOS 60V 0,5A 0,83V 5R TO92	BS170	ON Semiconductor	BS170		1171	
1	Q2	PHOTO-DDR	32 V. Ptot 50 mW. IC 2,7...5,7 mA. Gehäusefarbe klar.	SP201	DDR	SP201			
6	R1, R7, R8, R9, R14, R15	RES10-7.8X2.8	WIDERSTAND, 207, 5%	0R				2052	
1	R2	CT-6EP	50k Trimmer	50k	COPAL	CT-6EP-503			
1	R3	RES10-7.8X2.8	Metallsch. 0207 1/4W 1%	8,2k		MF25 8k2		2090	
24	R19, R20, R23, R24, R26, R27,	RES6.5-3.4X1.9	WIDERSTAND, 204, axial, 5%	470R	YAGEO	CFR-25SJT-52-470R		2069	
2	R6, R76	RES10-7.8X2.8 - 10k	WIDERSTAND, 207, axial, 1%	10k	frei	RMGK010		1233	
6	R50, R51, R52, R53, R69, R74	RES10-7.8X2.8	WIDERSTAND, 207, axial, 1%	4k7				1587	
1	R60	RES10-7.8X2.8 - 330R	WIDERSTAND, 207, axial, 1%	330R				1588	
1	R62	RES10-7.8X2.8 - 220R	WIDERSTAND, 207, axial, 1%	200R	frei	RMGE220		2015	
1	R75	RES10-7.8X2.8 - 10k	WIDERSTAND, 207, axial, 1%	10R	frei	RMGK010		2060	
1	S1	SSSS211603	Schiebeschalter 3.5mm SPDT Horizontl 2mm travel	SSSS2	Alps	SSSS211603		1067	
2	SN1, SN2		steel nuts M2,5	steel nuts M2,5	frei			1872	
1	SW1	SW-DTSA-6	Mini-Taster print stehend 1N	DTSA62K	Diptronics	DTSA62K		2013	
6	U1, U4, U7, U10, U11, U15	N016	BCD Decoder Hexa	D346D	RFT	D346D			
3	U2, U6, U8	N0020A	Puffer u. Leitungstreiber Octal Buff/Line Dvr W/3-State Opt	SN74LS244N	Texas Instruments	SN74LS244N	SN74HCT244N	1374	LS 244
4	U3, U5, U9, U12	N014	Hex Inverter Buffer / Driver with Open-Collector High-Voltage Outputs	SN74LS06N	Texas Instruments	SN74LS06N		2058	LS 06
1	U13	N014	Dual D-Type Positive-Edge-Triggered Flip-Flop with Preset and Clear	SN74LS74N	TI	SN74LS74N	DL074D	1545	LS 74
1	U14	N014	Quadruple 2-Input Positive-NAND Buffer with Open-Collector Outputs	SN74LS03N	TI	SN74LS03N	DL003D	1543	LS 03