8-DIGIT CALCULATOR WITH MARKER

The IZ1236MR is a single chip CMOS LSI with 8-digitt arithmetic operation, with marker, LCD control, and auto power off function, designed for FEM LCD operation with a 1.5V power supply.

FUNCTIONS:

- basic arithmetical operations over eight-digit numbers;
- operations with memory;
- percentage calculation;
- square root calculation;
- calculation of reverse value of number;
- operations with constants;
- indication of additional operations.

Microcircuit.

ABSOLUTE MAXIMUM RATINGS

Symbol	Name of parameter	Extreme mode		Limiting mode		Unit
		min	max	min	max	
U_{DD}	Supply voltage	1.1	1.8	-0.3	2.1	V
U_{SB}	Supply voltage from solar battery	1.1	3.0	-0.3	3.3	V
U_{IH}	input voltage of high level	U_{DD}-0.4	U_{DD}	-	U_{DD}+0.3	V
U_{IL}	Input voltage of low level	0	0.4	-0.3	-	V
Tamb	Operating temperature range	0	55	-	-	°C
Tstg	Storage temperature	-	-	-60	125	°C

ELECTRICAL CHARACTERISTICS (T_a = 25°C, V_{DD} = +3.0V±0.2V, V_{SS}=0V)

Symbol	Name of the parameter	Mode of measurement	Standard		Unit
			min	max	
U_{OL}	Output voltage of low level on outputs P1, P2, A2-A5	U_{DD} =1.5 V I_{OL}=15 μA	-	0.15	V
U_{OL1}	Output voltage of low level on outputs a1-a8, в1-в8, c1-c8, H1-H3	U_{DD} =1.1 V	-	0.2	V
		U_{DD} =1.5 V		0.2	
		U_{DD} =1.8 V		0.2	
U_{OH1}	Output voltage of high level on outputs H1-H3	U_{DD} =1.1 V	0.9	1.3	V
		U_{DD} =1.5 V	1.3	1.7	
		U_{DD} =1.8 V	1.6	2.0	
U_{OH2}	Output voltage of high level on outputs a1-a8, в1-в8, c1-c8, H1-H3	U_{DD} =1.1 V	2.0	-	V
		U_{DD} =1.5 V	2.8		
		U_{DD} =1.8 V	3.4		
U_C	Voltage on voltage doubler	U_{DD} =1.1 V	2.0	-	V
U_{ST}	Voltage on stabilizer of solar battery	U_I =3.0 V	1.6	2.0	V
I_{IL}	Input current of low level on inputs K2-K6	U_{DD} =1.5 V U_{IL} =0 V	0.3	3.0	μA
I_{IH}	Input current of high level on inputs K2-K6	U_{DD} =1.8 V U_{IH} =1.8 V	-	1.0	μA
	Consumption current, in mode :				
Idis	- "disoperation";	U_{DD} =1.3 V	-	5.0	μA
Iopr	- "in operation ";	U_{DD} =1.1 V		7.0	
Ioff	- " switched off"	U_{DD} =1.5 V		0.1	
Td	Period of displaying information on LCD	U_{DD} =1.3 V	-	18	mc

PURPOSE OF CONTACT PADS

Number of contact pad	Symbol	Purpose
01	U_{SB}	Input of solar battery stabilizer
02	K4	Keyboard control input
03	K6	Keyboard control input
04	K5	Keyboard control input
05	P1	Keyboard strobe output
06	P2	Keyboard strobe output
07	A5	Keyboard strobe output
08	A4	Keyboard strobe output
09	A3	Keyboard strobe output
10	A2	Keyboard strobe output
11	K2	Keyboard control input
12	K3	Keyboard control input
13	TST	Test input
14	VB	Pin for capacity connection
15	VA	Pin for capacity connection
16	VC	Pin for capacity connection
17	GND	General output
18	H3	LCD general electrode control output
19	H2	LCD general electrode control output
20	c8	LCD segment control output
21	b8	LCD segment control output
22	a8	LCD segment control output
23	c7	LCD segment control output
24	b7	LCD segment control output
25	a7	LCD segment control output
26	c6	LCD segment control output
27	b6	LCD segment control output
28	a6	LCD segment control output
29	c5	LCD segment control output
30	b5	LCD segment control output
31	a5	LCD segment control output
32	c4	LCD segment control output
33	b4	LCD segment control output
34	a4	LCD segment control output
35	c3	LCD segment control output
36	b3	LCD segment control output
37	a3	LCD segment control output
38	c2	LCD segment control output
39	b2	LCD segment control output
40	a2	LCD segment control output
41	c1	LCD segment control output
42	b1	LCD segment control output
43	a1	LCD segment control output
44	H1	LCD general electrode control output
45	U_{DD}	Power pin from voltage source
46	U_{OP}	Solar battery stabilizer output

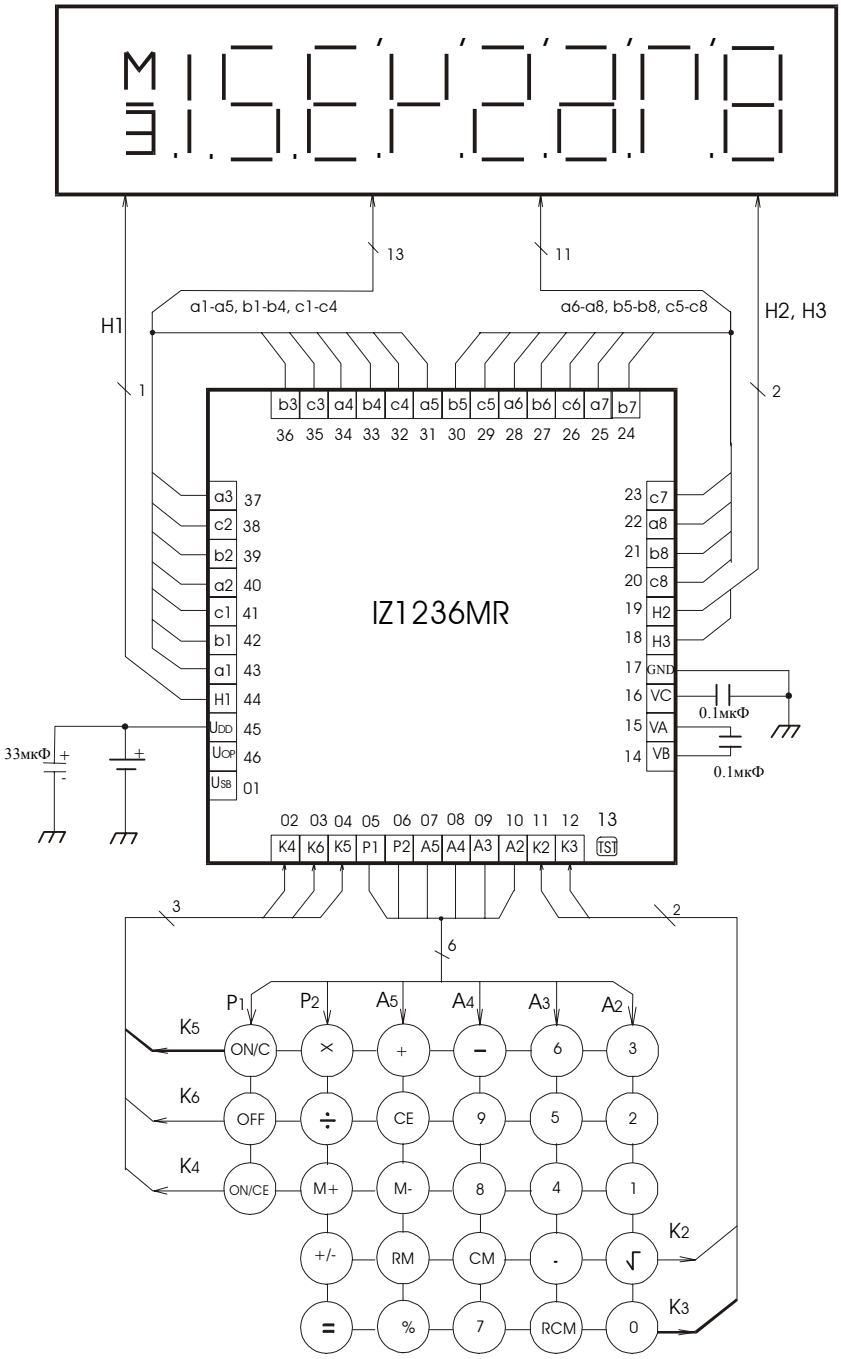
Note - LCD -liquid crystal display

COORDINATES OF CONTACT PADS

Number of contact pad	Symbol	Coordinates	
		X (mm)	Y (mm)
01	U_{SB}	0.083	0.319
02	K4	0.103	0.103
03	K6	0.251	0.083
04	K5	0.396	0.083
05	P1	0.541	0.083
06	P2	0.683	0.083
07	A5	0.817	0.083
08	A4	0.948	0.083
09	A3	1.079	0.083
10	A2	1.210	0.083
11	K2	1.341	0.083
12	K3	1.472	0.083
13	TST	1.680	0.101
14	VB	1.783	0.265
15	VA	1.783	0.396
16	VC	1.783	0.649
17	GND	1.783	0.857
18	H3	1.783	1.041
19	H2	1.783	1.172
20	c8	1.783	1.303
21	b8	1.783	1.434
22	a8	1.783	1.565
23	c7	1.783	1.696

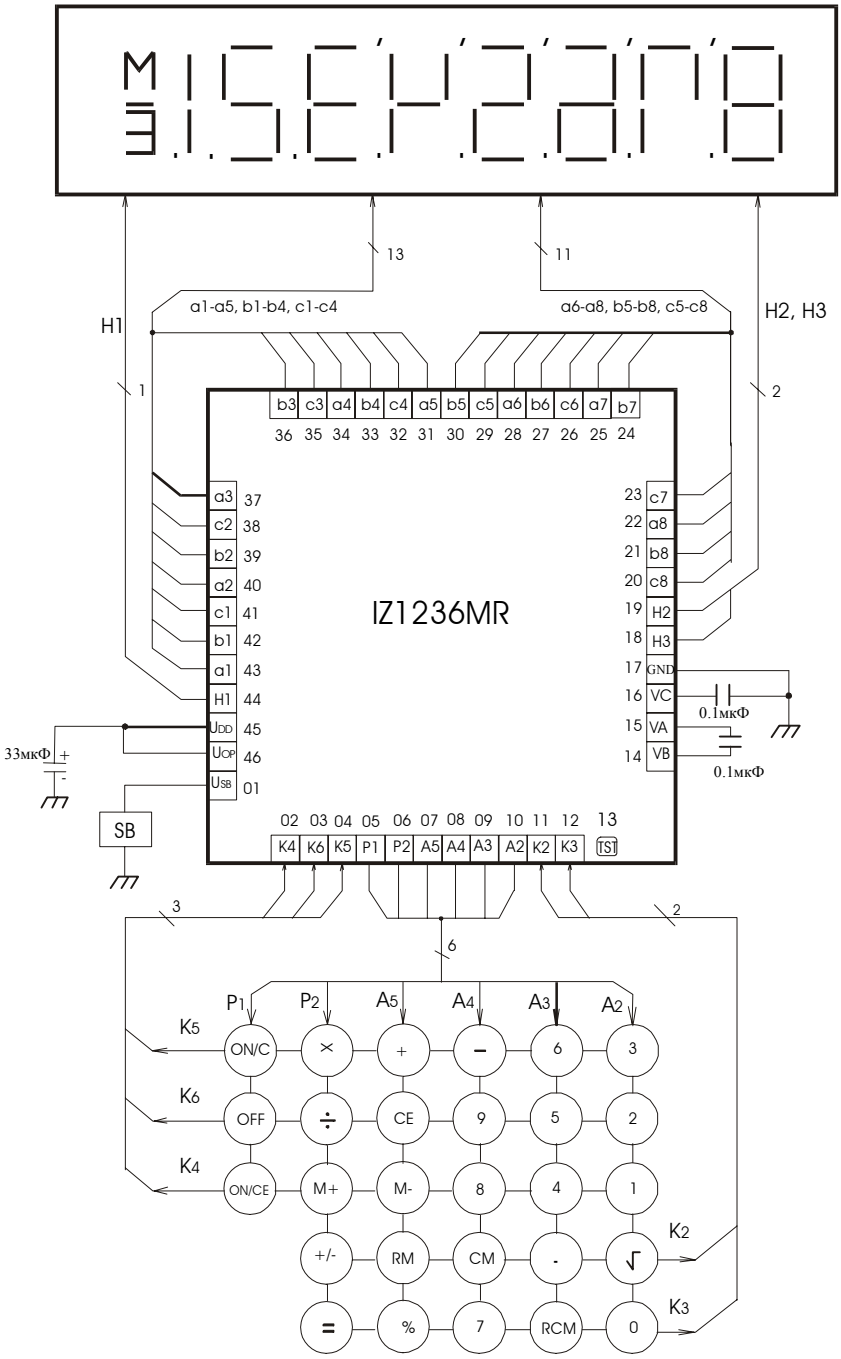
Number of contact pad	Symbol	Coordinates	
		X (mm)	Y (mm)
24	b7	1.685	1.827
25	a7	1.554	1.827
26	c6	1.423	1.827
27	b6	1.292	1.827
28	a6	1.161	1.827
29	c5	1.030	1.827
30	b5	0.899	1.827
31	a5	0.768	1.827
32	c4	0.637	1.827
33	b4	0.506	1.827
34	a4	0.375	1.827
35	c3	0.244	1.827
36	b3	0.113	1.827
37	a3	0.083	1.630
38	c2	0.083	1.488
39	b2	0.083	1.357
40	a2	0.083	1.226
41	c1	0.083	1.095
42	b1	0.083	0.964
43	a1	0.083	0.833
44	H1	0.083	0.702
45	U_{DD}	0.083	0.571
46	U_{OP}	0.083	0.440

APPLICATION SCHEME WITH THE USE OF CHEMICAL POWER SUPPLY ELEMENT



INTEGRAL

APPLICATION SCHEME WITH THE USE OF SOLAR BATTERY



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