



MX172

TRIANGULAR TYPE AUTO FOCUS IC

FEATURES

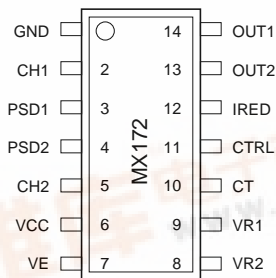
- Package : 14-pin SSOP
- Operating voltage : 2V~4V
- Operating temperature : -25°C~60°C
- Supply current : max. 10mA (without output current)
- Input current level : 1nA~5uA
- Surround light level : max. 50uA (PSD output current)
- IRED drive output : min. 20mA
- Magnet drive current : min. 200mA
- Measuring time : max. 50ms

DESCRIPTION

MX172 is designed for Triangular system auto focus cameras. It is regarded as input component for PSD (Position Sensitive Diode), and comprises of circuits that drive AF magnet as output, an infrared emission diode current control circuit, and control circuit of sequential timing.

PIN CONFIGURATION

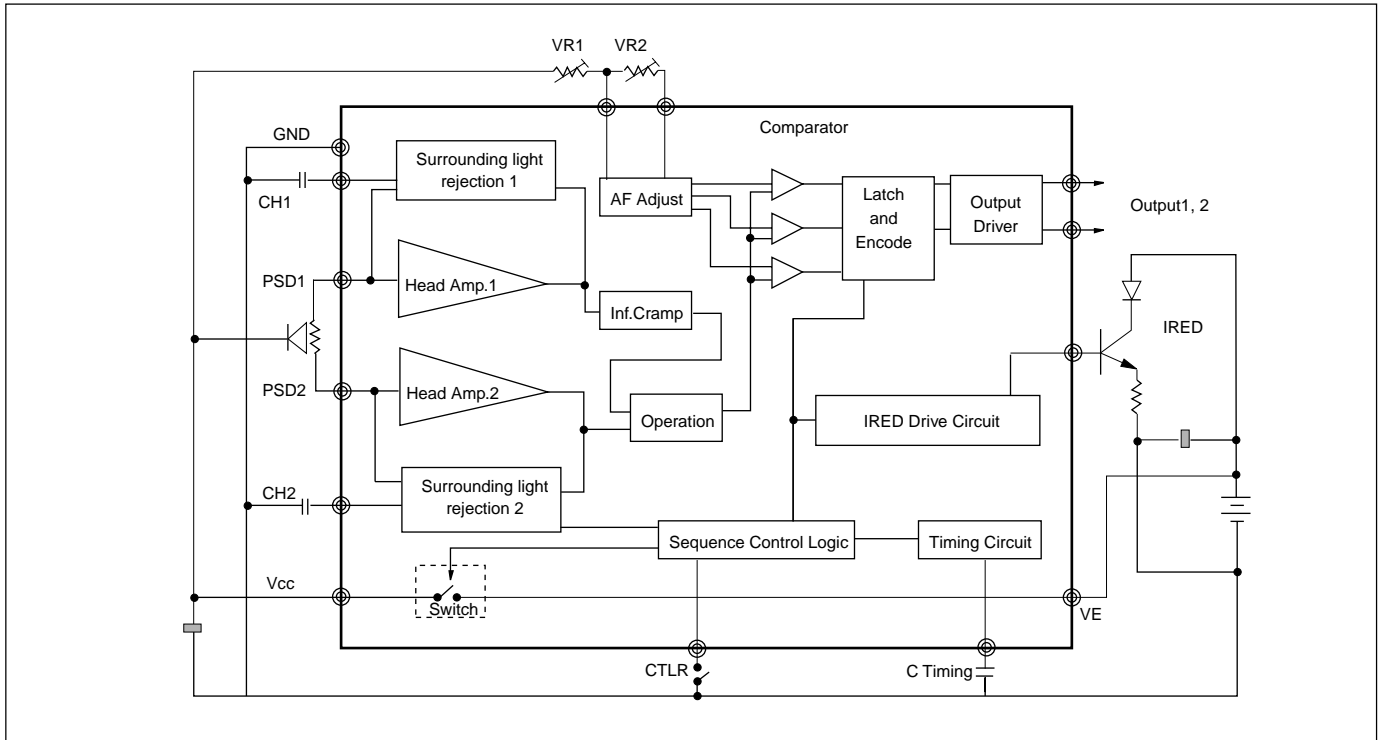
14 SSOP



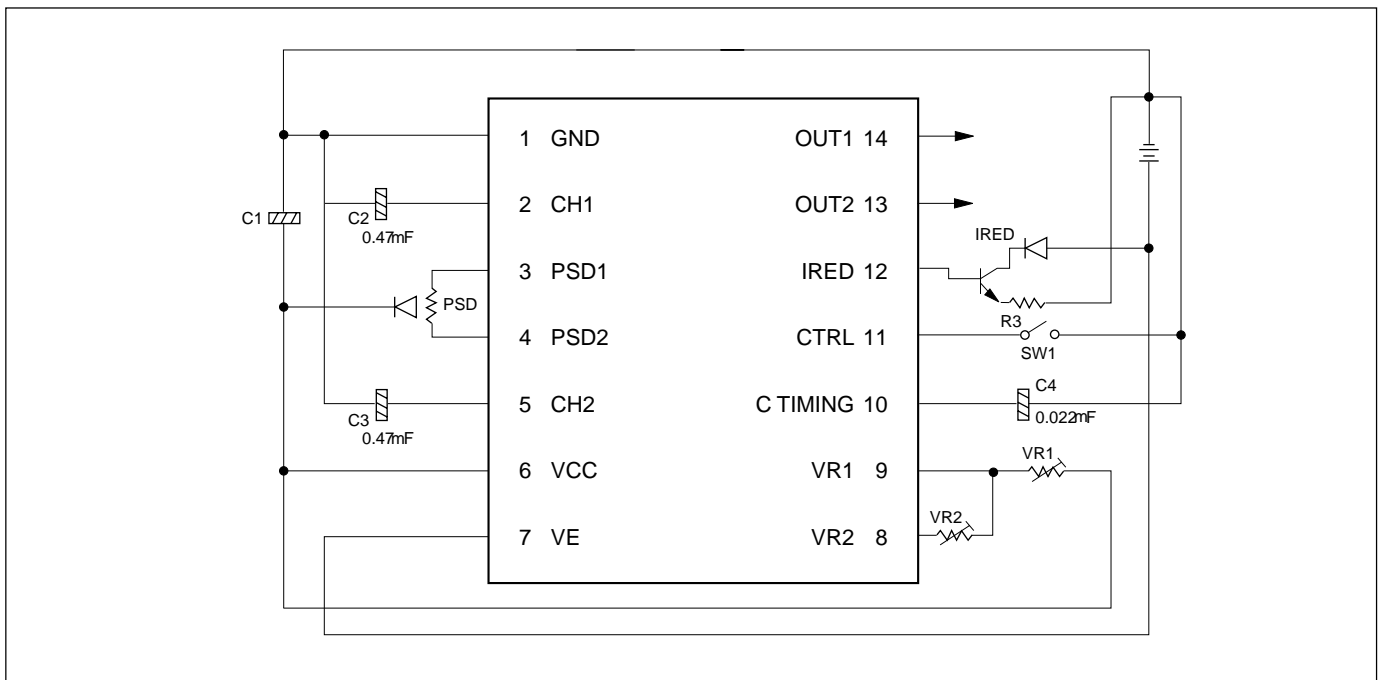
PIN FUNCTIONS

SYMBOL	PIN NAME
GND	Ground Pin
CH1	Hold Capacitor Pin 1
PSD1	PSD Input Pin 1
PSD2	PSD Input Pin 2
CH2	Hold Capacitor Pin 2
VCC	Supply Pin (Secondly)
VE	Supply Pin (Battery)
VR2	VR Pin for Adjustment 2
VR1	VR Pin for Adjustment 1
CT	Timing Capacitor
CTRL	Power Control
IRED	Output Control for IRED
OUT2	Data Output Pin 2 (MSB)
OUT1	Data Output Pin 1(LSB)

BLOCK DIAGRAM



BASIC CONNECTION DIAGRAM



**ABSOLUTE MAXIMUM RATINGS**

SYMBOL	PARAMETER	RATING	UNIT	CONDITION
VCC	Supply Voltage	-0.3~4.0	V	
PD	Power Dissipation	350	mW	TA≤25°C
PDR	Power Dissipation Ratio	-3	mW/°C	TA>25°C
VIN	Input Voltage	-0.3~VCC+0.3	V	
BVOC	Output Voltage	-0.3~7.0	V	
IOUT	Output Current	400	mA	
TOPR	Operating Temperature 1	-25~+60	°C	(NOTE)
TOPR	Operating Temperature 2	-15~+50	°C	
TSTG	Storage Temperature	-55~+150	°C	

NOTE: The operating temperature 1 range expresses the qualitative operating temperature range but it does not guarantee characteristics.

DC CHARACTERISTICS (TA = 25°C, VCC = 2.2V, 3.0V, 4.0V)**SUPPLY CURRENT**

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT	CONDITION
ICC1	Standby Current			3.0	uA	
ICC1	Quick Charge State (Charge)	2.5		7.0	mA	
ICC2	Quick Charge State (Discharge)	2.5		7.0	mA	
ICC3	Steady State (Charge)	2.0		5.0	mA	
ICC4	Steady State (Discharge)	2.0		5.0	mA	
ICC5	IREd Flashing State			8.0	mA	
ICC6	Finish State			40.0	mA	

TIMING CIRCUIT

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT	CONDITION
ICT	CT Charge Current	0.8	1.3	2.0	uA	
RCT	Discharge Resistance	5.6	7.0	8.5	K ohm	
VTH1	Threshold Voltage1	655	680	740	mV	
VTH2	Threshold Voltage2	1280	1383	1420	mV	
DVTH2/3	Deference Vth2/3	14.0	25.0	35.0	mV	
VSATPNP	VE/VCC PNP VCE (SAT)			220	mV	

**HEAD AMPLIFIER/ADJUSTMENT CIRCUIT**

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT	CONDITION
VIN	Input Voltage	620	680	740	mV	
ISDMX	Max. Surround Light	16.0			uA	
IADJ	Adj. VR Current	38.0	44.0	50.0	uA	
VCOMP1	Compare Voltage1	318	336	354	mV	Signal Ratio=3:7
VCOMP2	Compare Voltage2	530	560	590	mV	Signal Ratio=5:5

HOLD CAPACITOR CHARGE/DISCHARGE CURRENT

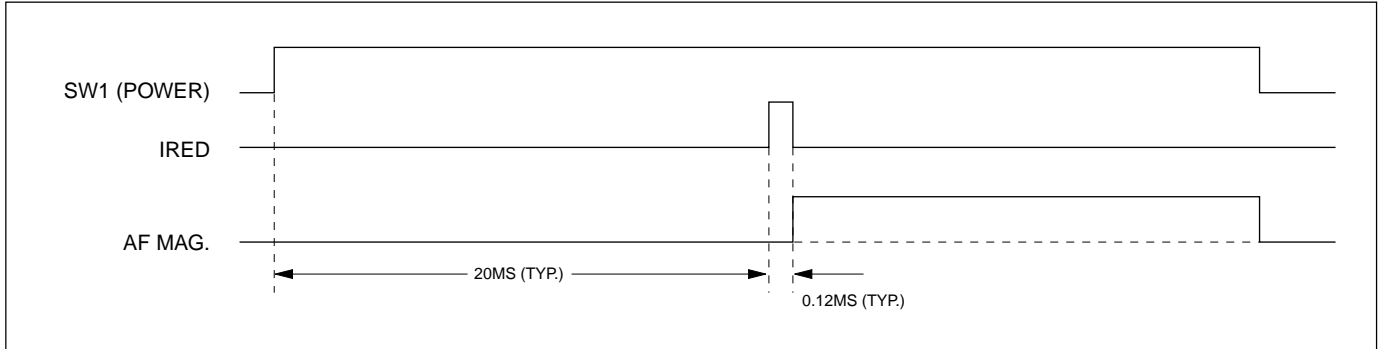
SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT	CONDITION
ICH1	Quick Charge Current	-300		-1000	uA	
ICH2	Quick Discharge Current	460		1200	uA	
ICH3	Steady Charge Current	-7	-11	-16	uA	
ICH4	Steady Discharge Current	7	11	16	uA	
ICH5	CH Input Current			100	nA	

DATA OUTPUT TERMINAL

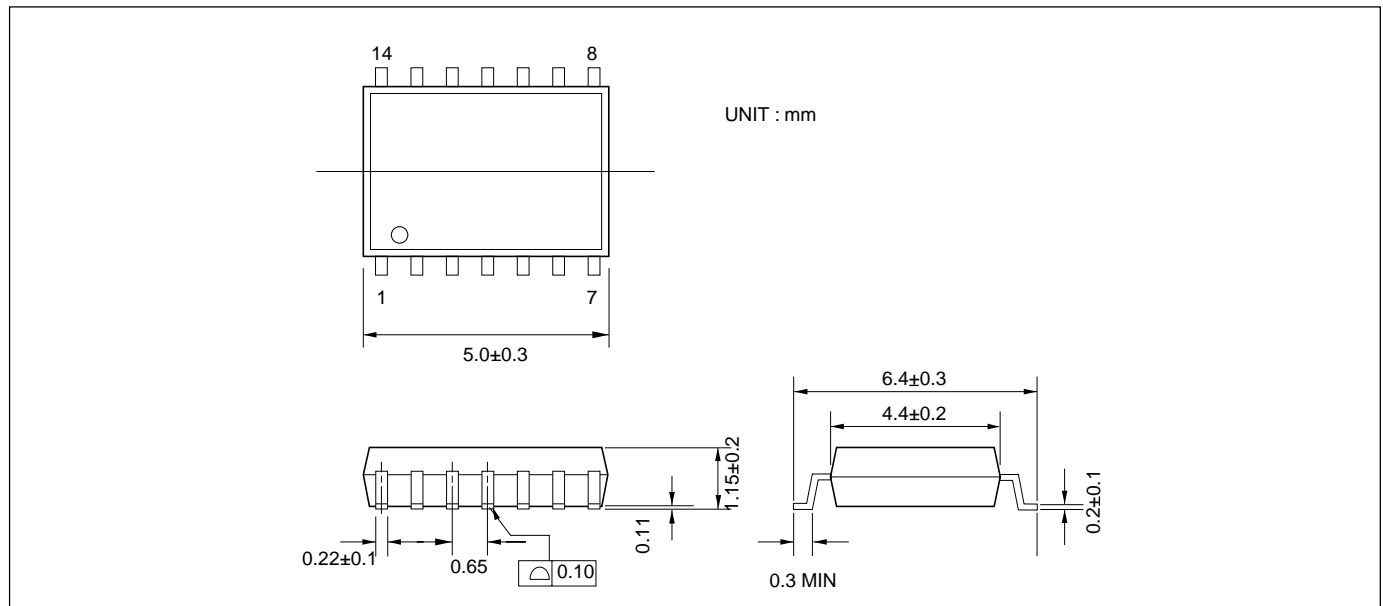
SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT	CONDITION
IOUTLK1	Output Leak Current 1			1.0	uA	VO = 10.0V
IOUTLK2	Output Leak Current 2			1.0	uA	VO=VCC
VOUSAT1	Saturation Voltage			300	mV	IO = 20mA
IOUTMX1	Max. Output Current1	20			mA	
VOUSAT2	Saturation Voltage2			300	mV	IO = 300mA
IOUTMX2	Max. Output Current2	300			mA	
VOUTMX2	Max. Voltage2	6.0	8.0	10.0	V	IO = 300mA

IRED FLASHING CONTROL CIRCUIT

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT	CONDITION
VIRED1	IRED Voltage (ON)	920	980	1030	mV	
VIRED2	IRED Voltage (OFF)			350	mV	
IIREDMX	Max. Output Current	15.0			mA	

TIMING WAVEFORM

ORDERING INFORMATION

PART NO.	PACKAGE
MX172MC	14 pin SSOP

PACKAGE INFORMATION
14 PIN PLASTIC SSOP




MX172

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