

ELM742x LOW VOLTAGE, LOW POWER CMOS VOLTAGE COMPARATOR

■ GENERAL DESCRIPTION

ELM742x is a low voltage and low power CMOS comparator developed for battery-operated devices. ELM742x makes it easy to design power circuits and contributes to extend battery life on account of the single power source, low voltage supply operating range ($V_{DD} \geq +1.0V$) and also low power consumption. ELM742x introduces depletion transistors into the differential input stage, and has a wide input voltage range ($V_{SS}+0.1V \sim V_{DD}-0.2V$), and can drive the TTL and CMOS Logic IC on account of the N-ch opendrain output.

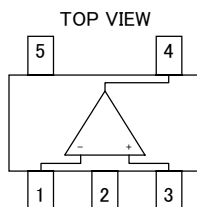
■ FEATURES

- Low voltage operation : $V_{DD} \geq +1.0V$
- Low power consumption : $I_{DD} (TYP.) = 0.6 \mu A (V_{DD} = 1.5V)$
- Wide operation voltage range : $1.0V \leq V_{DD} \leq 7.0V$
- Wide input voltage range : $V_{SS} + 0.1V \sim V_{DD} - 0.2V$
- Output stage is N-ch opendrain type
- Very small SOT-25 package

■ APPLICATION

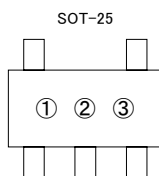
- Battery-operated devices
- Micropower signal processing
- Low voltage analog circuits

■ PIN CONFIGURATION



Pin No.	Pin Name
1	IN-
2	VDD
3	IN+
4	OUT
5	VSS

■ MARKING



No.	Mark	Contents
①	A	ELM742x
②	0~9	Lot No.
③	0~9	Lot No.

■ SELECTION GUIDE

Symbol		
x	Product Version	A : Sn/Pb package B : Pb - Free package

ELM742x

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■ MAXIMUM ABSOLUTE RATINGS

(VSS=0V)

Parameter	Symbol	Limits	Units
Supply Voltage	VDD	10	V
Input Voltage	VIN	VSS-0.3~VDD+0.3	V
Output Voltage	VOU	10	V
Output Current	IOU	30	mA
Power Dissipation	Pd	300	mW
Operating Temp. Range	Top	-20~+70	°C
Storage Temp. Range	Tstg	-40~+125	°C

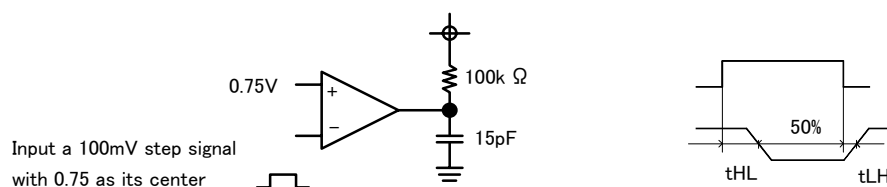
■ ELECTRICAL CHARACTERISTICS

(VSS=0V, Top=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units	Remarks
Power Supply Voltage	VDD		1.0		7.0	V	
Common Mode Input Voltage	VIC	VDD=1.0~7.0V	VSS+0.1		VDD-0.2	V	
Input Offset Voltage	VID-1	VDD=1.0~3.6V			8	mV	
	VID-2	VDD=1.0~7.0V			12	mV	
Input Current	IIN	VDD=1.0~7.0V			100	pA	
Output Current	IOUT-1	VDD=1.0V, VOL=0.4V	30	50		μA	1
	IOUT-2	VDD=1.5V, VOL=0.4V	0.6	0.8		mA	1
Current Consumption	IDD-1	VDD=1.5V, VOUT : "L"		0.6	2.0	μA	1
	IDD-2	VDD=3.6V, VOUT : "L"		4.5	8.0	μA	1
	IDD-3	VDD=7.0V, VOUT : "L"		20	35	μA	
Response Time	tHL	RL=100kΩ, CL=15pF VDD=1.5V		60		μs	2
	tLH	RL=100kΩ, CL=15pF VDD=1.5V		40		μs	2

Remarks) 1 --- Refer to Typical Operating Characteristics.

Remarks) 2 --- The relation between input and output is as follows.



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■ TYPICAL OPERATING CHARACTERISTICS

