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 (VDD≧+1.0V) and also low power consumption.
ELM742x introduces depletion transistors into the differential input stage, and has a wide input voltage range (VSS+0.1V ～ VDD−0.2V), and can drive the TTL and CMOS Logic IC on account of the N-ch opendrain output.

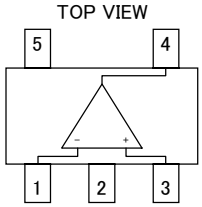
■ FEATURES

・Low voltage operation	: VDD ≧ +1.0V
・Low power consumption	: IDD (TYP.) = 0.6 μ A (VDD = 1.5V)
・Wide operation voltage range	: 1.0V ≦ VDD ≦ 7.0V
・Wide input voltage range	: VSS + 0.1V ～ VDD−0.2V
・Output stage is N-ch opendrain type	
・Very small SOT-25 package	

■ APPLICATION

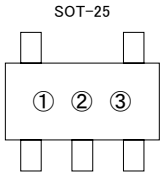
・ Battery−operated devices
・Micropower signal processing
・Low voltage analog circuits

■ 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

■ MAXIMUM ABSOLUTE RATINGS

(VSS=0V)

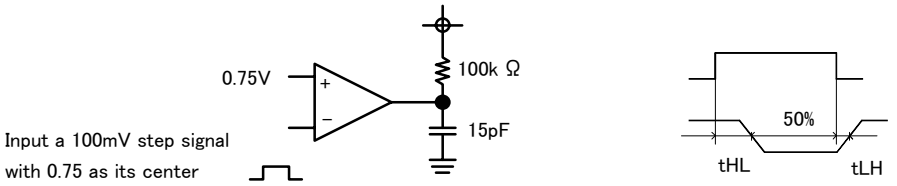
Parameter	Symbol	Limits	Units
Supply Voltage	VDD	10	V
Input Voltage	VIN	VSS-0.3～VDD+0.3	V
Output Voltage	VOUT	10	V
Output Current	IOUT	30	mA
Power Dissipation	Pd	300	mW
Operating Temp. Range	Top	-20～+70	℃
Storage Temp. Range	Tstg	-40～+125	℃

■ ELECTRICAL CHARACTERISTICS

(VSS=0V, Top=25℃, 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.



■ TYPICAL OPERATING CHARACTERISTICS

