

# ELM900x WHITE LED FLASHLIGHT DRIVER

## ■ GENERAL DESCRIPTION

ELM900x is a CMOS IC designed for driving white LEDs by one or two dry cell as a power source. ELM900x can drive two series white LED by 1.5V-3.0V input voltage. ELM900x uses an external inductor as a voltage booster. ELM900x consists of an oscillator circuit and a driving transistor. The input DC power is transformed to a 35kHz constant current pulse, when the external inductor switched on and off in 35kHz. In a standard application inductor is needed as external parts.

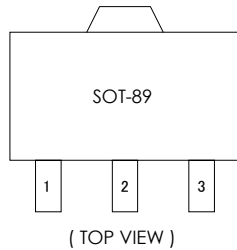
## ■ FEATURES

- Low cost and simple application circuit
- High efficiency
- Constant average power control
- Low noise 35kHz constant frequency switching
- Compact SOT-89 package

## ■ APPLICATION

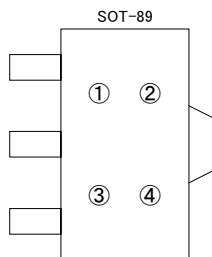
- White LED flashlight
- Laser pointer
- High VF LED driver
- LCD backlighting

## ■ PIN CONFIGURATION



Pin No.	Pin Name
1	VSS
2	VDD
3	LX

## ■ MARKING



- ①, ② : Represents the product IC code  
90
- ③ : Represents the assembly lot number  
0 ~ 9 repeated
- ④ : Represents the assembly lot number  
A ~ Z repeated ( I, O, X excepted )

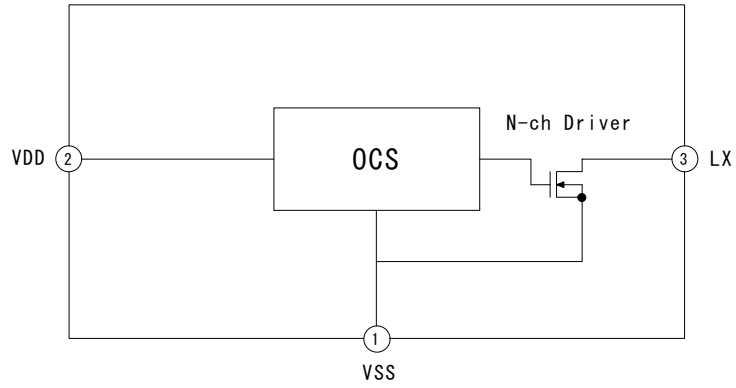
## ■ MARKING

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

**ELM900x**

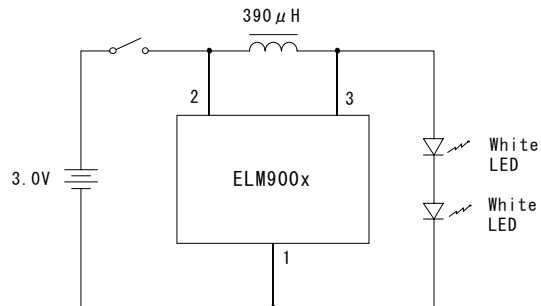
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## ■ BLOCK DIAGRAM

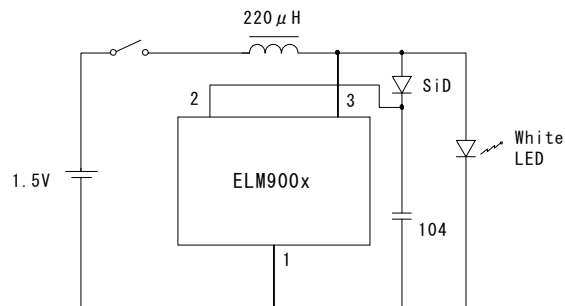


## ■ APPLICATION CIRCUIT

2 cell 2LED



1 cell 1LED



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### ■ MAXIMUM ABSOLUTE RATINGS

(VSS=0V)

Parameter	Symbol	Limits	Units
Maximum voltage VDD to VSS	VDD	12	V
Maximum voltage LX to VSS	VLX	12	V
Maximum current LX	ILX	200	mA
Continuous power dissipation	Pd	300	mW
Operating Temperature	Top	-20~+70	°C
Storage Temperature	Tstg	-40~+125	°C

### ■ ELECTRICAL CHARACTERISTICS

(Top=25°C, VSS=0V)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Supply voltage range	VDD		1.0		5.0	V
Internal current consumption	ISS	VDD=3.0V		7	14	μA
LX drive current	ILX	VDD=3.0V	90			mA
LX leakage current	ILXL	VDD=LX=6.0V			1.0	μA
Oscillation frequency	Fosc	VDD=3.0V	22	35	55	kHz
LX duty ratio	Duty	VDD=3.0V	45	55	65	%