

MITSUBISHI STANDARD LINEAR IC

M6270X,M6271X, M6272X,M6273X,M6274XML/SL

VOLTAGE DETECTING, SYSTEM RESETTNG IC SERIES

GENERAL DESCRIPTION

The M627XXML/SL is a voltage threshold detector designed for detection of a supply voltage and generation of a system reset pulse for almost all logic circuits such as microprocessor.

It also has extensive applications including battery checking, level detecting and waveform shaping circuits.

FEATURES

- Detecting Voltage M627X2,M627X3 2.87V
M627X4,M627X5 2.58V
M627X6,M627X7 2.39V
M627X8,M627X9 1.72V
- Hysterisis Voltage 80mV
- Delay Time M6270X 0sec
M6271X 200 μ sec
M6272X 50msec
M6273X 100msec
M6274X 200msec
- Few external parts
- Low threshold operating voltage (Supply voltage to keep low-state at low supply voltage) ...0.65V(TYP.) at $R_L=22k\Omega$
- Wide supply voltage range 1.5V to 7.0V
- Sudden change in power supply has minimal effect on the ICs
- Extra small 3-pin package (3-pin FLAT)
- Built-in long delay time

APPLICATION

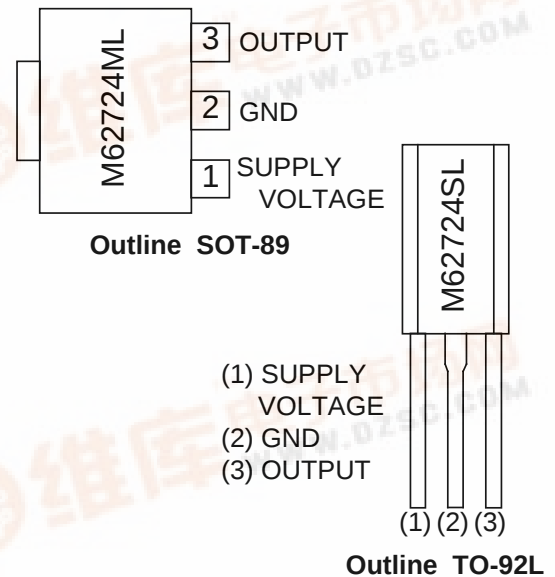
- Reset pulse generation for almost all logic circuits
- Battery checking, level detecting, waveform shaping circuits
- Delayed waveform generator
- Switching circuit to a back-up power supply
- DC/DC converter
- Over voltage protection circuit

RECOMMENDED OPERATING CONDITION

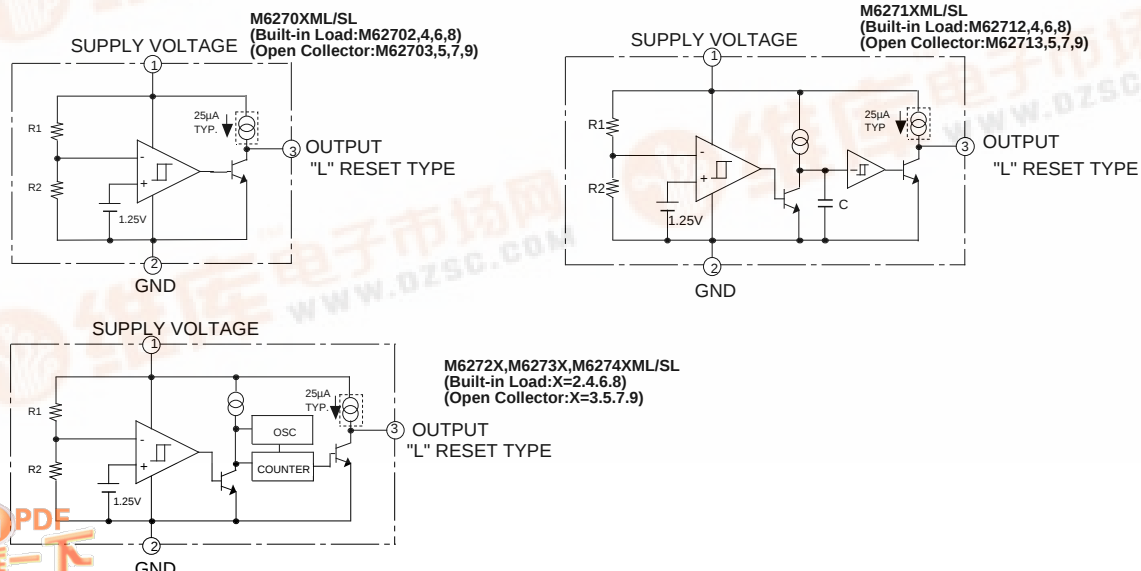
- Supply voltage range 1.5V to 7.0V

This product is on during the development, and there is a case rescheduling it future technical standard.

PIN CONFIGURATION (TOP VIEW) ex. M62724



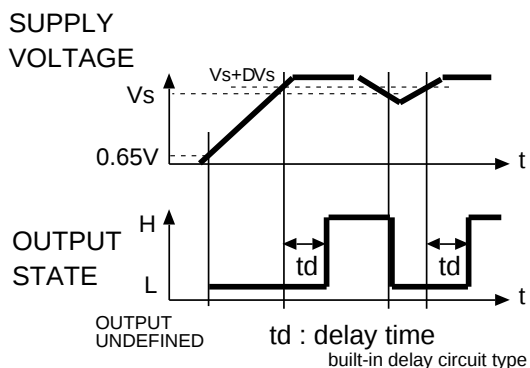
BLOCK DIAGRAM



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FUNCTION DIAGRAM



OUTPUT FORM

Built-in Load	Open Collector
M627X2	M627X3
M627X4	M627X5
M627X6	M627X7
M627X8	M627X9

ABSOLUTE MAXIMUM RATINGS (Ta=25°C Unless otherwise noted)

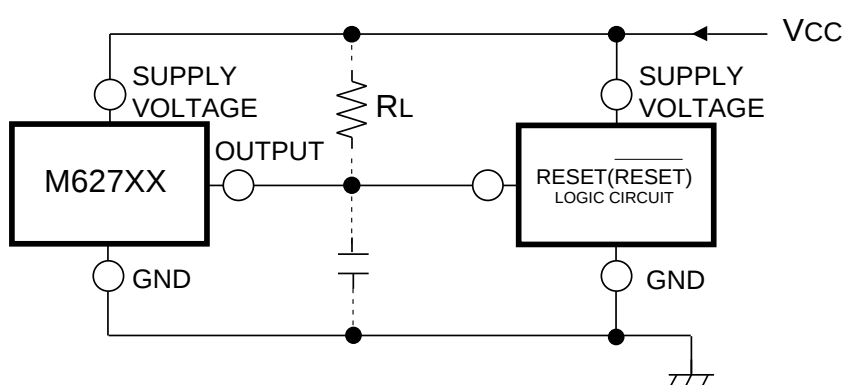
Symbol	Parameter	Test condition		Ratings	Unit
I _{CC}	Supply Voltage			7	V
I _{sink}	Output Sink Current			6	mA
V _O	Output Voltage	Output with constant current load		V _{CC}	V
P _d	Power Dissipation	3pin SIP		700	mW
		3pin FLAT		500	
K _θ	Thermal Derating	Ta≥25°C	3PIN SIP	7	mW/°C
			3PIN FLAT	5	
T _{opr}	Operating Temperature			-30 to +85	°C
T _{stg}	Storage Temperature			-40 to +125	°C

ELECTRICAL CHARACTERISTICS (Ta=25°C, Unless otherwise noted)

Symbol	Parameter	Test condition		Limits			Unit	
				MIN	TYP	MAX		
Vs	Detecting Voltage		M627X2,3	2.74	2.87	3.00	V	
			M627X4,5	2.46	2.58	2.70		
			M627X6,7	2.28	2.39	2.50		
			M627X8,9	1.64	1.72	1.80		
DVs	Hysterisis Voltage			50	80	110	mV	
Vs/DT	Detecting Voltage Temperature Coefficient				0.01		%/°C	
Icc	Circuit Current	NO OSC &COUNTER	M6270X		100	200	340	μA
			M6271X		120	220	400	
		Built-in OSC & COUNTER X=2,3,4	Vcc=3.3V	M627X2	250	395	560	
				M627X3	225	370	535	
			Vcc=3.0V	M627X4	230	375	540	
				M627X5	205	350	515	
			Vcc=2.7V	M627X6	200	345	510	
				M627X7	175	320	485	
			Vcc=2.0V	M627X8	130	275	440	
M627X9	105	250		415				
tPd	Delay Time	Response Time		M6270X		3	μs	
		Ta=-30~+85°C	M6271X	80	200	500	ms	
			M6272X	30	50	70		
			M6273X	60	100	140		
			M6274X	120	200	280		
		Vsat	Output Saturation Voltage	Vcc=2V,Isink=4mA / M627X8,9:Vcc=1.6V			0.2	0.4
VOPL	Threshold Operating Voltage	Minimum supply voltage for operation	RL=2.2kW,Vsat±0.4V		0.7	0.8	V	
			RL=100kWVsat±0.4V		0.6	0.7		
Ioc	Output Load Current	Built-in Load type	Vo=1/2*Vcc	-40	-25	-17	μA	
VOH	Output HIGH Voltage	Built-in Load type		Vcc-0.2	Vcc-0.06		V	
IOH	Output Leak Current	Open Collector type				30	nA	
			Ta=-30~+85°C				1	μA

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Example of application circuit
Reset Circuit of M627XX Series



Note 1.

The logic circuit preferably should not have a pull-down resistor, but if one is present, add load resistor RL to overcome the pull-down resistor.