

MITSUBISHI STANDARD LINEAR IC
**M6270X,M6271X,
M6272X,M6273X,M6274XML/SL**

VOLTAGE DETECTING, SYSTEM RESETTNG IC SERIES

GENERAL DESCRIPTION

The M627XML/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 $R_L=22k$
- 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

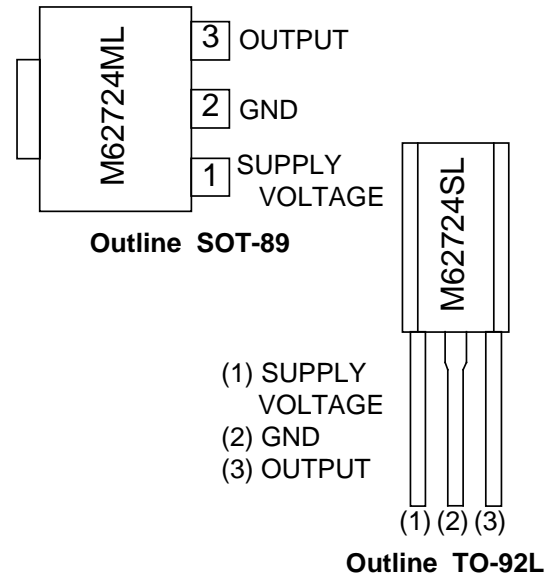
- Reset pulse generation for almost all logic circuits
- Battery checking, level detecting, waveform shaping circuits
- Delayed waveform generator
- Switching circuit to a back-up power supply
- DC/DC converter
- Over voltage protection circuit

RECOMMENDED OPERATING CONDITION

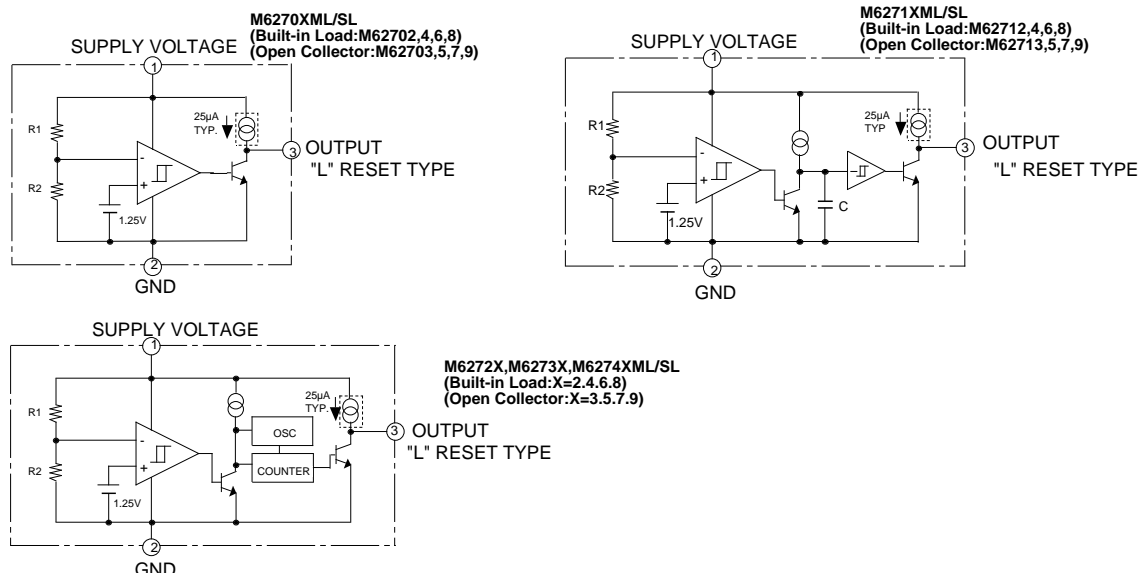
- Supply voltage range 1.5V to 7.0V

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

PIN CONFIGURATION (TOP VIEW) ex. M62724



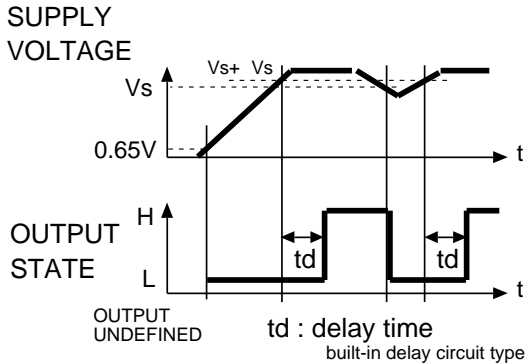
BLOCK DIAGRAM



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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)

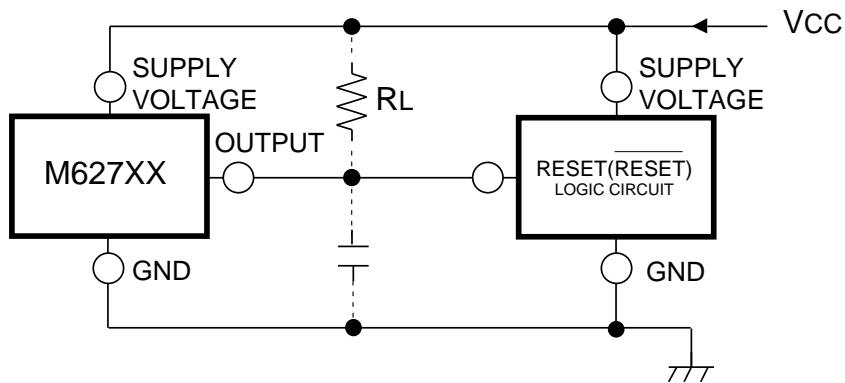
Symbol	Parameter	Test condition		Ratings	Unit
I _{CC}	Supply Voltage			7	V
I _{sink}	Output Sink Current			6	mA
V _O	Output Voltage	Output with constant current load		V _{CC}	V
P _d	Power Dissipation	3pin SIP		700	mW
		3pin FLAT		500	
K _θ	Thermal Derating	Ta 25°C	3PIN SIP	7	mW/°C
			3PIN FLAT	5	
T _{opr}	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		
Vs	Hysterisis Voltage			50	80	110	mV	
Vs/ T	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		
			M6272X	30	50	70		ms
			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=2.2k ,Vsat 0.4V		0.7	0.8	V	
			RL=100k Vsat 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.

⚠ Mitsubishi Electric Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give due consideration to safety when making your circuit design, in order to prevent fires from spreading, redundancy, malfunction or other mishap.