

PRELIMINARY
 Notice: This is not a final specification.
 Some parametric limits are subject to change.

MITSUBISHI Dig./Ana.INTERFACE

M62714ML,SL

VOLTAGE DETECTING, SYSTEM RESETTNG IC SERIES

GENERAL DESCRIPTION

The M62703ML/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 microcontroller.

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

FEATURES

- Few external components
- Low operating threshold voltage (Supply voltage to keep a output low in a low supply operation)

...0.65V(typ) at $R_L = 22k\Omega$

- Wide supply voltage range 2V to 7V
- High immunity to a sudden supply voltage change
- Wide application range
- Extra small 3-pin package (3-pin FLAT)

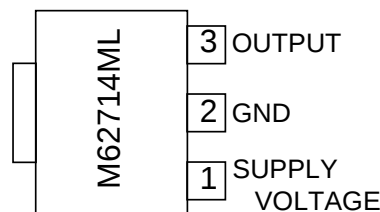
APPLICATION

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

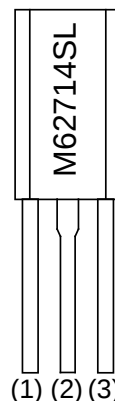
RECOMMENDED OPERATING CONDITION

- Supply voltage range 2V to 7V

PIN CONFIGURATION (TOP VIEW)

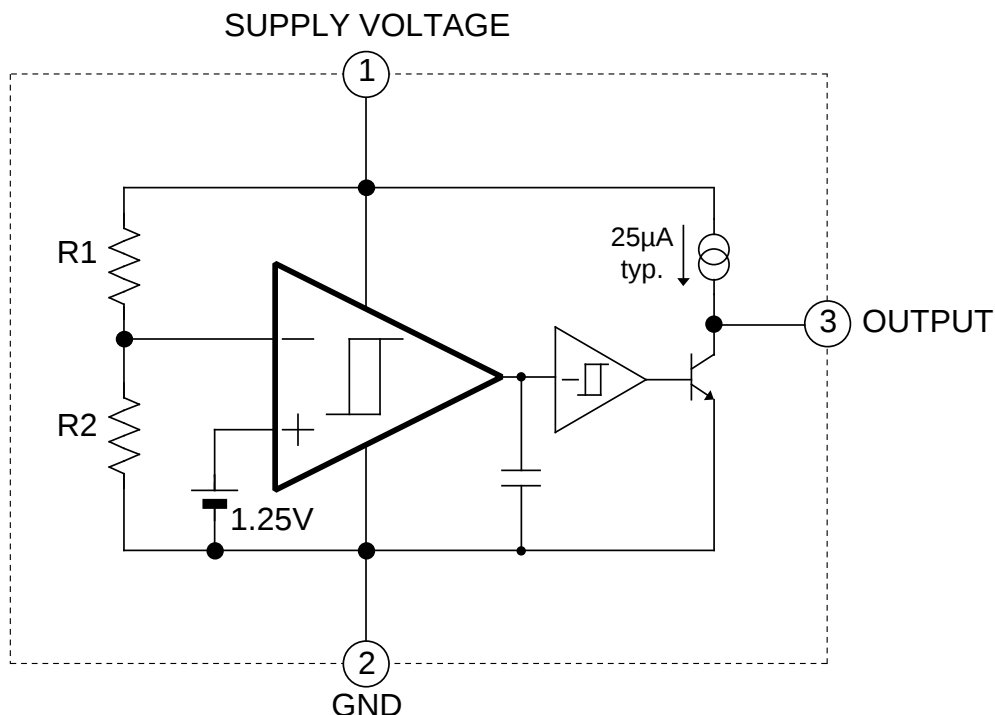


Outline SOT-89



Outline TO-92L

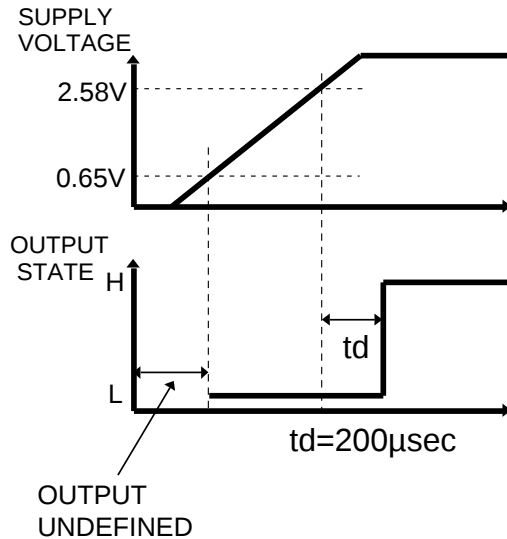
BLOCK DIAGRAM



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FUNCTION DIAGRAM



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 SIL		700	mW
		3pin FLAT		500	
K _θ	Thermal Derating	Ta ≥ 25°C	3PIN SIL	7	mW/°C
			3PIN FLAT	5	
T _{opr}	Operating Temperature			-30 to +85	°C
T _{stg}	Storage Temperature			-40 to +125	°C

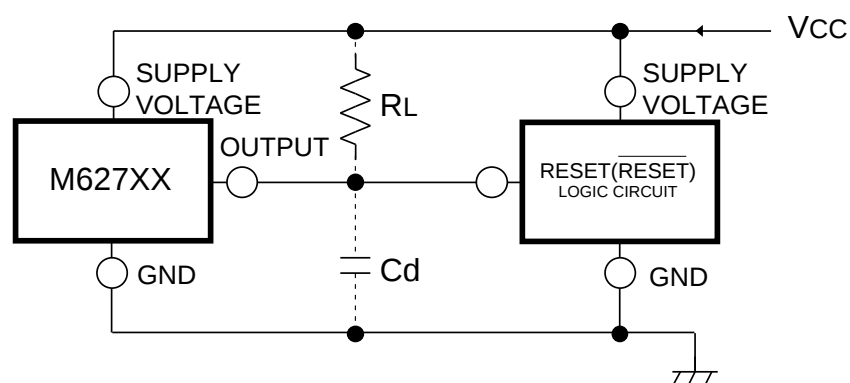
ELECTRICAL CHARACTERISTICS (Ta=25°C, Unless otherwise noted)

Symbol	Parameter	Test condition	Limits			Unit
			MIN	TYP	MAX	
V _s	Detecting Voltage		2.46	2.58	2.70	V
ΔV _s	Hysteresis Voltage		50	80	110	mV
V _s /ΔT	Detecting Voltage Temperature Coefficient		—	0.01	—	%/°C
I _{cc}	Circuit Current	V _{cc} =3V	—	230	400	μA
V _{sat}	Output Saturation Voltage	V _{cc} =2V, I _{sink} =4mA	—	0.2	0.4	V
V _{oPL}	Threshold Operating Voltage	Minimum supply voltage for IC operation	R _L =2.2kΩ, V _{sat} ≤0.4V	0.7	0.8	V
			R _L =100kΩ, V _{sat} ≤0.4V	0.6	0.7	
I _{oc}	Output Load Current	V _{cc} =2V, V _o =1/2V _{cc}	-40	-25	-17	μA
V _{OH}	Output HIGH Voltage		V _{cc} -0.2	V _{cc} -0.06		V
t _{PHL}	Propagation Delay Time	Response time when V _{cc} changes H to L	—	6	—	μs
t _{PLH}		Response time when V _{cc} changes L to H	—	3	—	
t _{pd}	Delay Time	Ta=-30 to +85°C	80	200	500	μs

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Example of application circuit Reset Circuit of M627XX Series



Note 1.

This IC can be used whether or not a pull-up resistor is included in the logic circuit.

Note 2.

The logic circuit preferably should not have a pull-down resistor.

However in the case it has the resistor, the load resistor R_L must be much less than the pull-down resistor. (refer to the above application circuit)