

To our customers,

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## Old Company Name in Catalogs and Other Documents

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April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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# M62781GP

## Voltage Detecting, System Resetting IC Series

REJ03D0523-0100

Rev.1.00

May 27, 2005

### Description

The M62781GP 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

- 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
- Wide application range
- Extra small 3-pin package (3-pin SOP)
- Built-in long delay time

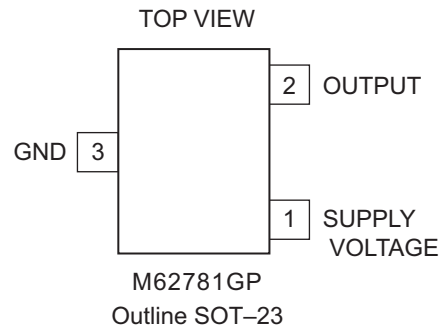
### Application

- 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

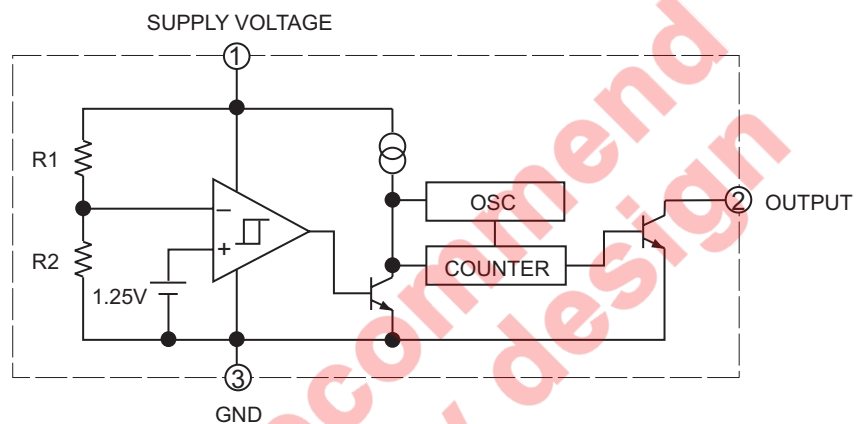
### Recommended Operating Condition

- Supply voltage range 1.5V to 7.0V

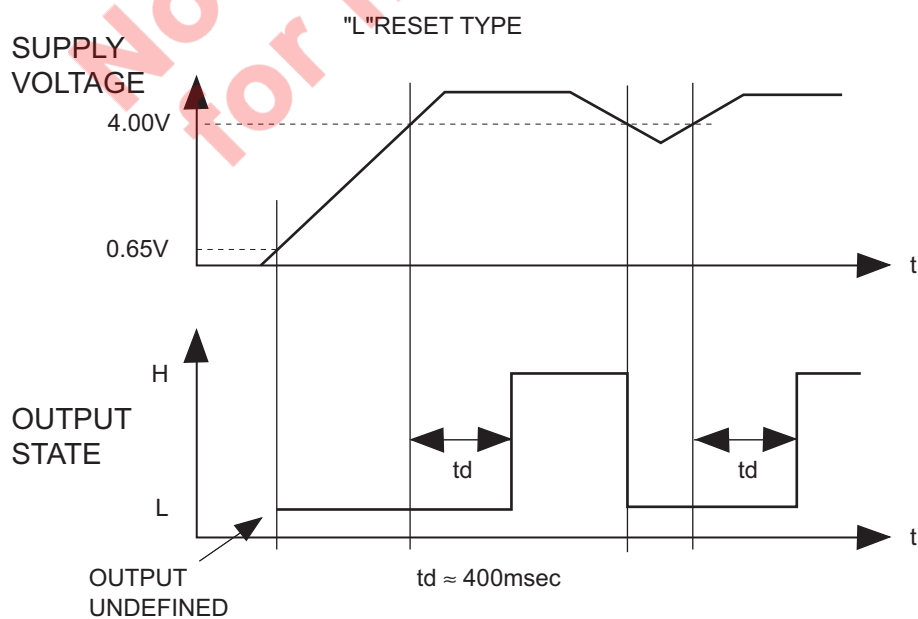
## Pin Arrangement



## Block Diagram



## Function Diagram



## Absolute Maximum Ratings

(Ta = 25°C, unless otherwise noted)

Item	Symbol	Ratings	Unit	Test Conditions
Supply voltage	$V_{CC}$	7	V	
Output sink current	$I_{sink}$	6	mA	
Output voltage	$V_O$	7	V	Output with open collector
Power dissipation	$P_d$	200	mW	3pin SOP (SOT-23)
Thermal derating	$K_\theta$	2	mW/°C	Ta ≥ 25°C 3pin SOP
Operating temperature	$T_{opr}$	-30 to +85	°C	
Storage temperature	$T_{stg}$	-40 to +125	°C	

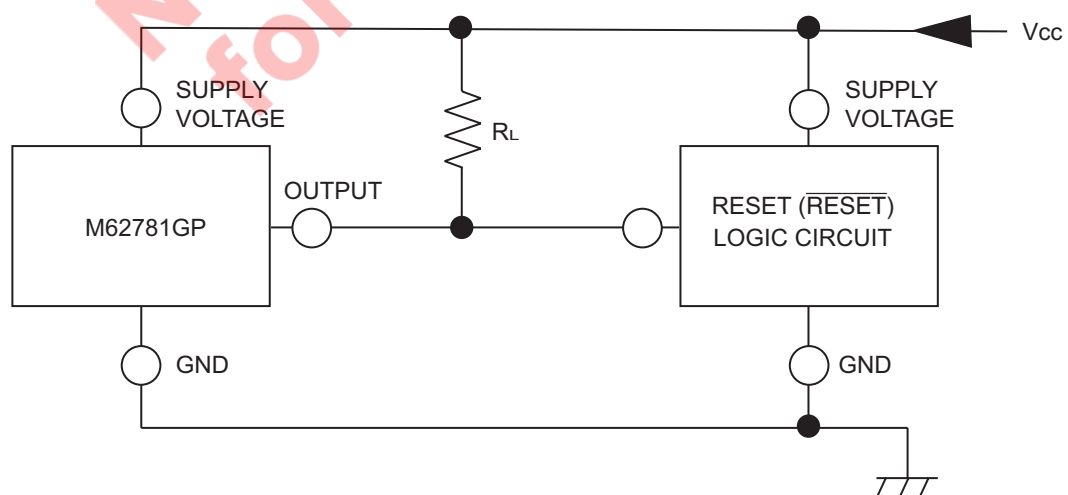
## Electrical Characteristics

(Ta = 25°C, unless otherwise noted)

Item	Symbol	Min	Typ	Max	Unit	Test condition
Detecting voltage	$V_S$	3.84	4.00	4.16	V	
Hysteresis voltage	$\Delta V_S$	50	80	110	mV	
Detecting voltage temperature coefficient	$V_S/\Delta T$	—	0.01	—	%/°C	
Circuit current	$I_{CC}$	—	400	600	$\mu A$	$V_{CC} = 5.0V$
Output saturation voltage	$V_{sat}$	—	0.2	0.4	V	$V_{CC}=3.5V, I_{sink}=4mA,$
Threshold operating voltage	$V_{OPL}$	—	0.7	0.8	V	Minimum supply voltage for operation
		—	0.6	0.7	V	$R_L=2.2k\Omega, V_{sat}\leq 0.4V$ $R_L=100k\Omega, V_{sat}\leq 0.4V$
Output leak current	$I_{OH}$	—	—	30	nA	
		—	—	1	$\mu A$	Ta = -30 to +85°C
delay time	tpd	200	400	800	ms	

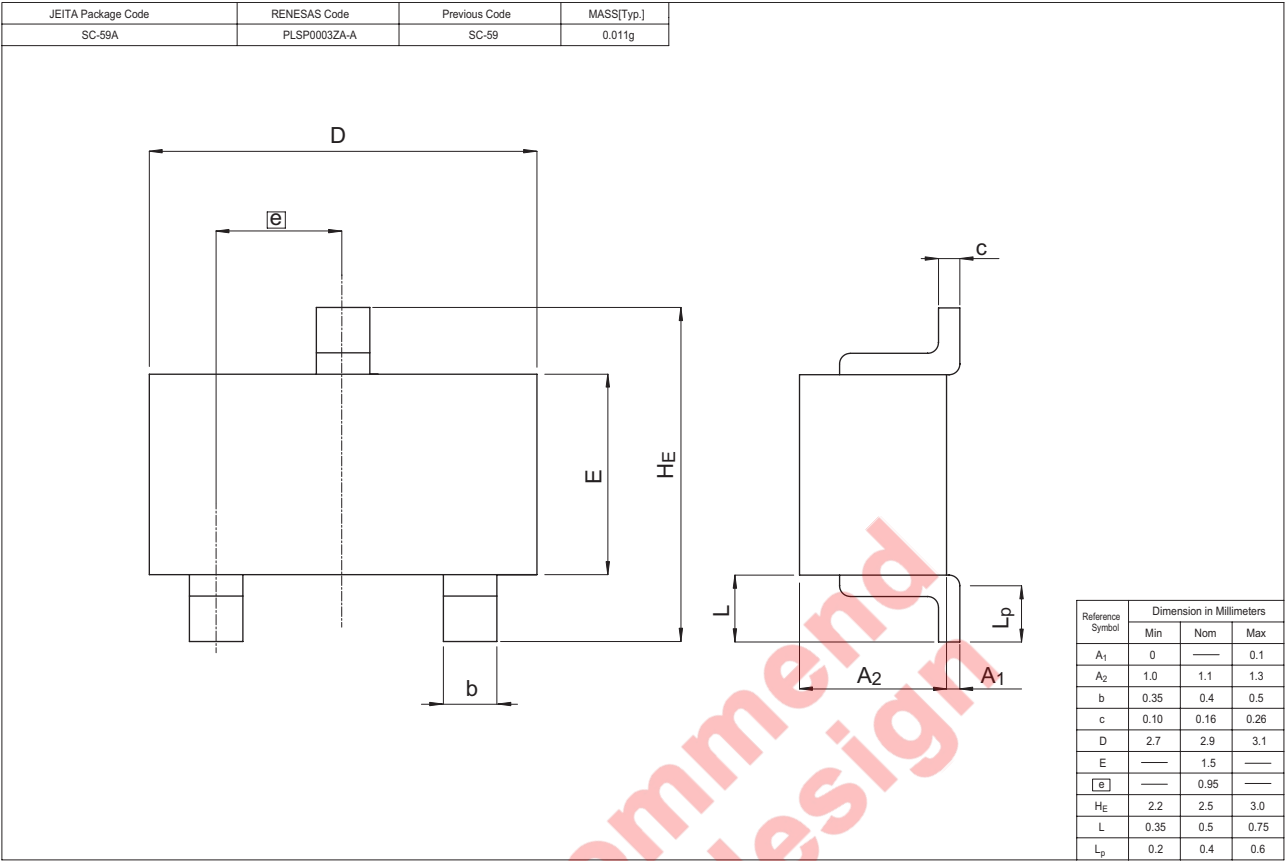
## Example of Application Circuit

Reset Circuit of M62781GP



Note: 1. The logic circuit preferably should not have a pull-down resistor, but if one is present, add load resistor  $R_L$  to overcome the pull-down resistor.

Package Dimensions



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