NEW PRODUCT

M62032AFP

VOLTAGE DETECTING, SYSTEM RESETTING IC

GENERAL DESCRIPTION

The M62032AFP is an IC for detection of two different input voltages to reset almost all logic circuits including MCU.
It contains a delay circuit with which any delay time can be obtained only by adding an external capacitor.
The IC is widely applicable to a battery check circuit, a level detection circuit, a waveform shaping circuit, etc.

FEATURES

- A small number of external components
- Built-in 2 input voltage detection circuits
- Wide supply voltage range ..... 2 to 10V
- Small 8-pin package
- Open collector output

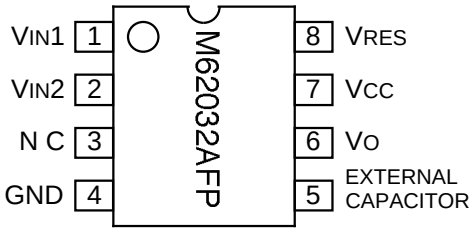
APPLICATION

Reset circuit of MPU, MCU and logic

RECOMMENDED OPERATING CONDITION

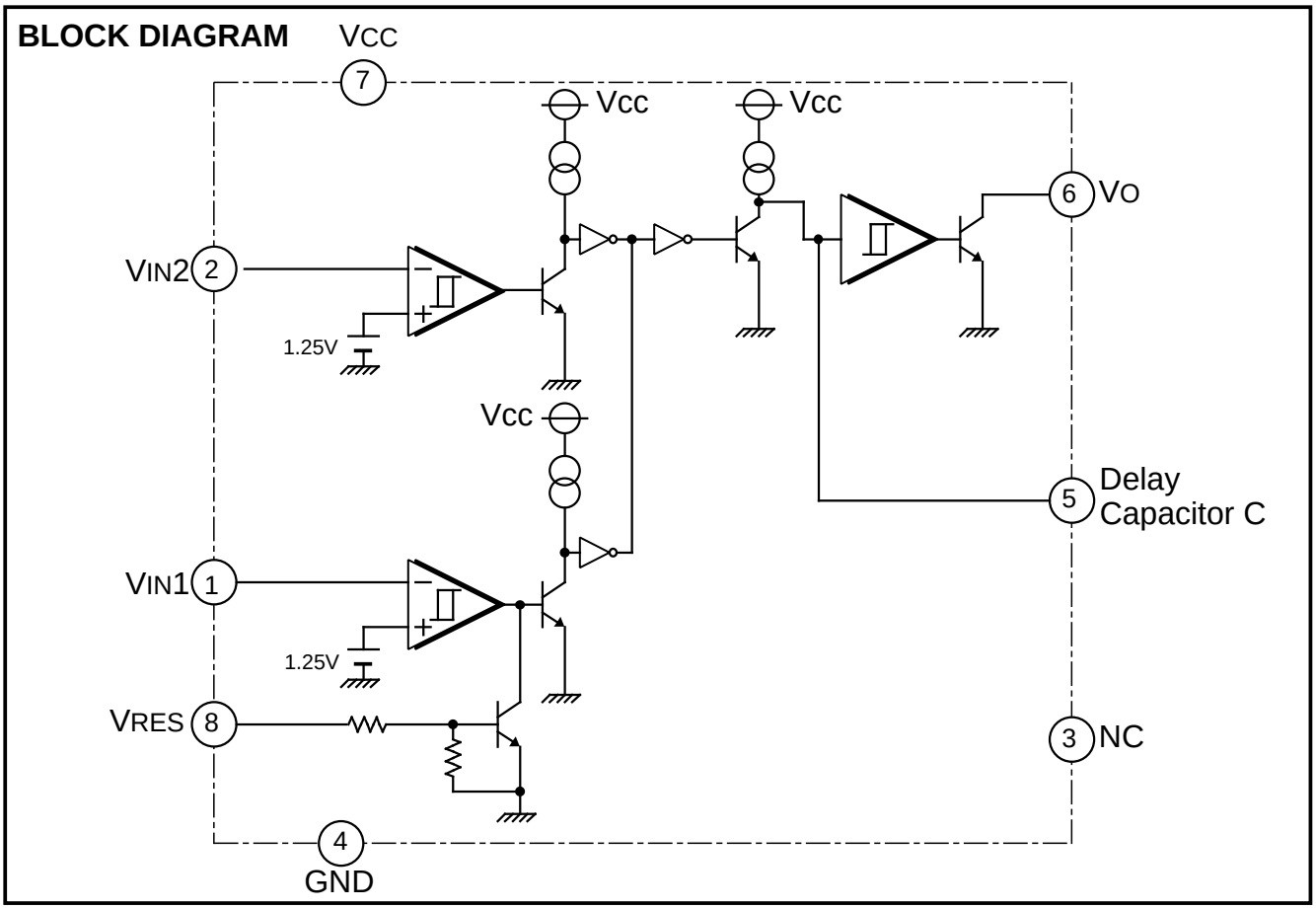
Supply voltage range ..... 2 to 10V

PIN CONFIGURATION (TOP VIEW)

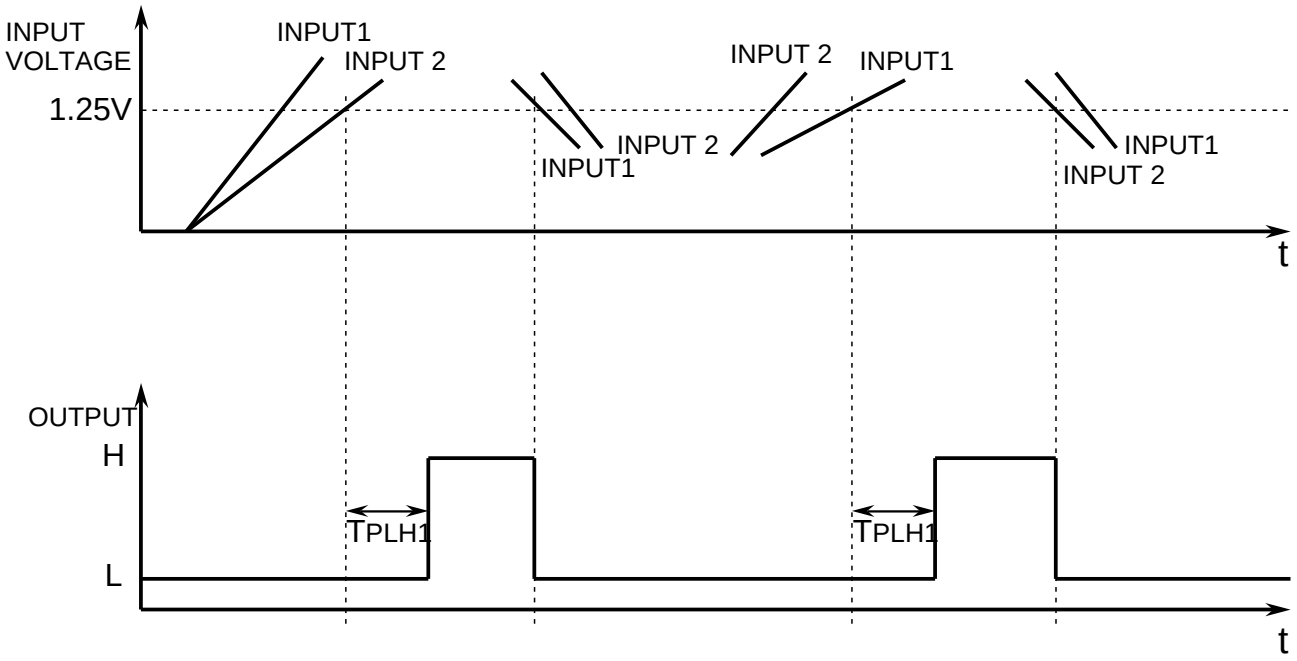


OUTLINE 8P2S(FP)

BLOCK DIAGRAM



FUNCTIONAL DIAGRAM



TERMINAL DESCRIPTION

Terminal No.	Symbol	Functional Description
①	**VIN1**	Detecting voltage input 1
②	**VIN2**	Detecting voltage input 2
③	**NC**	No connection
④	**GND**	Ground
⑤	**EXTERNAL CAPACITOR**	Delay capacitor connection
⑥	**Vo**	Output (open collector)
⑦	**VCC**	Supply voltage
⑧	**VRES**	It outputs "L" and "H" to the Vo terminal when VRES input is "H" and " L", respectively.

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

Symbol	Parameter	Conditions	Ratings	Unit
V_{CC}	Supply Voltage		10	V
I_{SINK}	Output Sink Current		8.0	mA
V_O	Output Voltage		10	V
V_{RES}	Self Reset Input Voltage		10	V
Pd	Power Dissipation		300	mW
Ktheta	Thermal Derating	Ta ≥ 25°C	3.0	mW/°C
Topr	Operating Temperature		-20 to +75	°C
Tstg	Storage Temperature		-40 to +125	°C

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

<Reset circuit1>

Symbol	Parameter	Test Conditions	Limits			Unit
			Min	Typ	Max	
V_{S1}	Detecting Voltage 1		1.20	1.25	1.30	V
ΔV_{S1}	Hysteresis Voltage 1		9	15	23	mV
V_{IN}	Input Voltage Range	$V_{CC} \le 7V$	-0.3		V_{CC}	V
		V_{CC}>7V	-0.3		7.0	
I_{IN}	Input Current	V_{IN}=1.25V		100	500	nA
I_{PD}	Constant Current			-1.4		uA
V_{OL1}	Low Output Voltage 1	I_{OL}=5mA		0.2	0.4	V
tpd1	Delay Time	Cd=0.01uF		10		mS
tpdmax	Maximum Delay Time	Cd=0.68uF		680	1130	
ΔV_{SCin}	Delay Capacitor part Hysteresis Voltage			250		mV

* The delay time can be varied by changing the connecting capacitance(Cd).
Tpd = CV/I = Cd x 1E6 (sec)

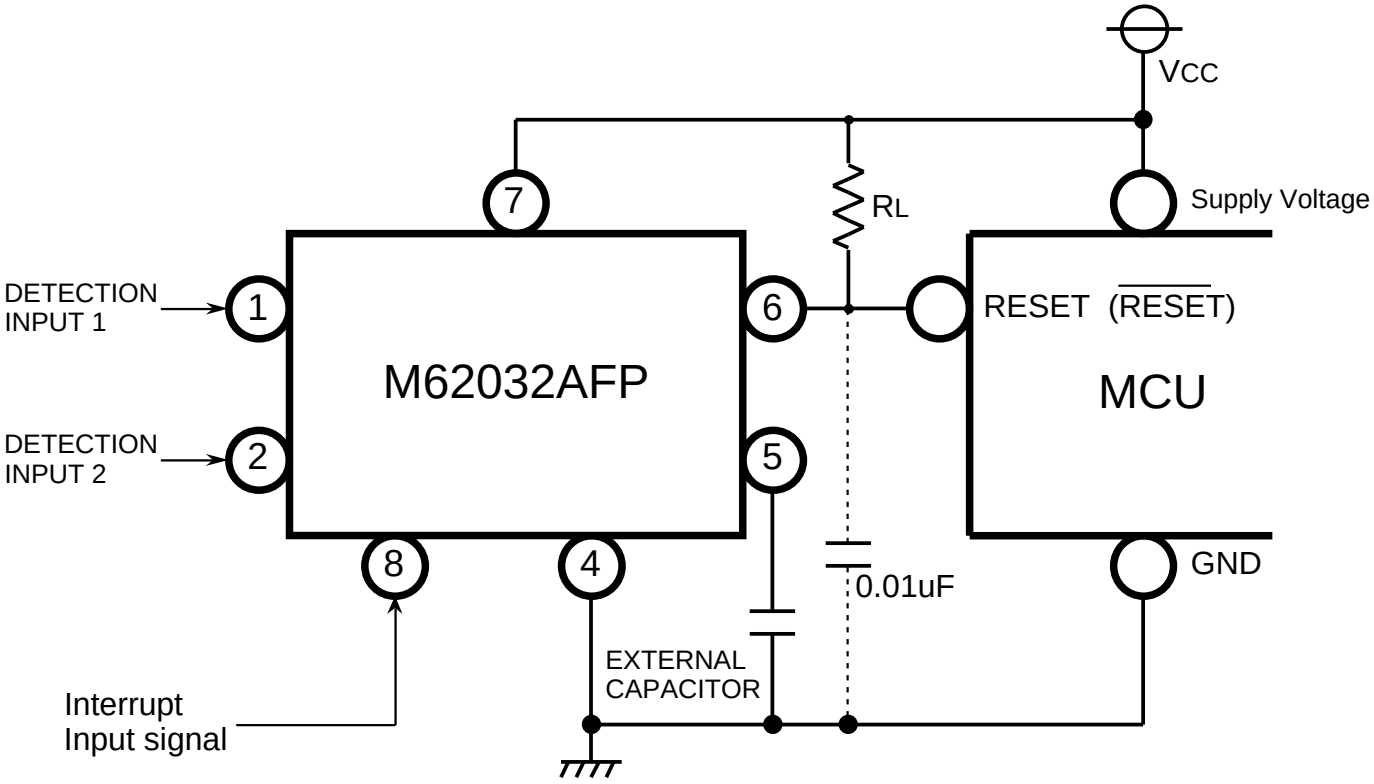
<Reset circuit2>

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V_{S2}	Detecting Voltage2		1.20	1.25	1.30	V
ΔV_{S2}	Hysteresis Voltage2		9	15	23	mV
V_{IN}	Input Voltage Range	$V_{CC} \le 7V$	-0.3		V_{CC}	V
		V_{CC}>7V	-0.3		7.0	
I_{IN}	Input Current	V_{IN}=1.25V		100	500	nA

<**Common specification**>

Symbol	Parameter		Test conditions	Limits			Unit
				Min	Typ	Max	
V_{CC}	Supply Voltage Range			2		10	V
I_{CC1}	Circuit Current in OFF		V_{CC}=5V		0.3	0.6	mA
$V_S/\Delta T$	Detecting Voltage Temperature Coefficient				0.01		%/°C
$\Delta V_S/\Delta T$	The Hysteresis Voltage Temperature Coefficient				0.01		%/°C
$T_{PLH}/\Delta T$	Propagation Delay Time Temperature Coefficient				0.10		%/°C
I_{OH}	Output Leak Current					1	uA
T_{PHL}	Output "L" Propagation Delay Time		CL=100pF		10		us
V_{OPL}	Threshold Operating Voltage		R_L=2.2kΩ,$V_{OL} \le 0.4V$		0.67	0.8	V
			R_L=100kΩ,$V_{OL} \le 0.4V$		0.55	0.70	
V_{RESH}	V_{RES}	Input "HIGH" voltage		2		V_{CC}	V
I_{RESH}		Input "HIGH" current	V_{RES}=2V			80	uA
V_{RESL}		Input "LOW" voltage		-0.3		0.8	V

AN EXAMPLE OF THE APPLICATION CIRCUIT



* A forced reset signal (high) into pin 8 from outside can reset this IC (low output) regardless of input signals to pins 1 and 2.

⚠ 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.