

M62015L/FP, M62016L/FP

Low Power 2 Output System Reset IC

REJ03D0783-0100

Rev.1.00

Sep 14, 2005

Description

The M62015 and M62016 are semiconductor integrated circuits whose optimum use is for the detection of the rise and fall in the power supply to a microcomputer system in order to reset or release the microcomputer system.

The M62015 and M62016 carry out voltage detection in two steps and have two output pins. As Bi-CMOS process and low power dissipating circuits are employed, they output optimum signals through each output pin to a system that requires RAM backup.

These ICs also support the backup mode of Renesas microcomputer the M16C.

Features

- Bi-CMOS process realizes a configuration of low current dissipating circuits.

Circuit current

$I_{CC} = 3 \mu\text{A}$ (Typ, normal mode, $V_{CC} = 3.0 \text{ V}$)

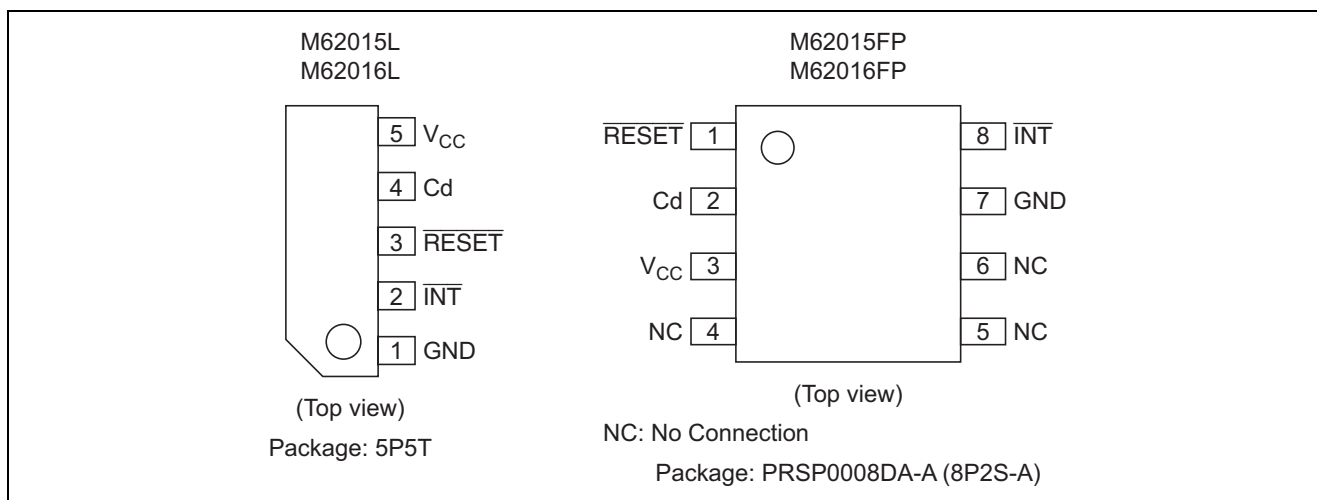
$I_{CC} = 1 \mu\text{A}$ (Typ, backup mode, $V_{CC} = 2.5 \text{ V}$)

- Two-step detection of supply voltage
 Detection voltage in normal mode: $V_S = 2.7 \text{ V}$ (Typ)
 Detection voltage in backup mode: $V_{BATT} = 2.0 \text{ V}$ (Typ)
- Two outputs
 Reset output ($\overline{\text{RESET}}$): output of compulsive reset signal
 Interruption output ($\overline{\text{INT}}$): output of interruption signal
- Two types of output forms
 CMOS output: M62015L/FP
 open drain output: M62016L/FP

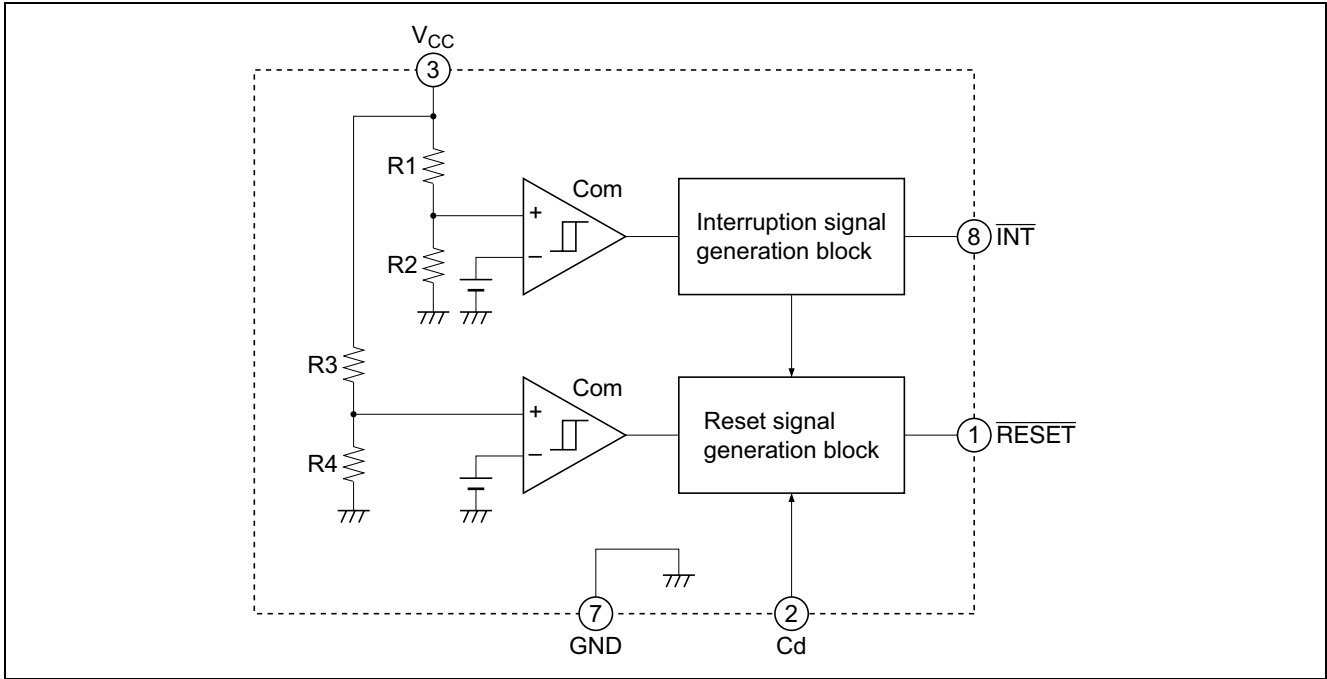
Application

- Prevention of errors in microcomputer system in electronic equipment that requires RAM backup, such as office, industrial, and home-use equipment.

Pin Arrangement



Block Diagram



Absolute Maximum Ratings

(Ta = 25°C, unless otherwise noted)

Item	Symbol	Ratings	Unit	Conditions
Supply voltage	V _{CC}	8	V	
Output sink current	I _{sink}	4	mA	
Power dissipation	P _d	440	mW	
Thermal derating	K _θ	4.4	mW/°C	Ta ≥ 25°C
Operating temperature	Topr	-20 to +75	°C	
Storage temperature	Tstg	-40 to +125	°C	

Electrical Characteristics

(Ta = 25°C, unless otherwise noted)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Supply voltage	V _s	2.55	2.70	2.85	V	Interruption level during V _{CC} drop
Battery voltage	V _{BATT}	1.85	2.00	2.15	V	Reset level at backup
Hysteresis voltage	ΔV _s	—	60	—	mV	ΔV _s = V _{SH} - V _{SL}
Circuit current	I _{CC}	—	3.0	12	μA	V _{CC} = 3.0V: in normal mode
		—	1.0	4.0		V _{CC} = 2.5V: in backup mode
Sink ability	V _{sat}	—	0.4	0.6	V	V _{CC} = 2.5V, I _{sink} = 2mA
Delay time	t _d	—	50	—	ms	External capacitance Cd = 0.33μF
Reset output response time	t _{RESET}	—	50	—	μs	When V _{CC} falling
Interruption output reset time	t _{INT}	—	40	—	μs	When V _{CC} falling

Application Example

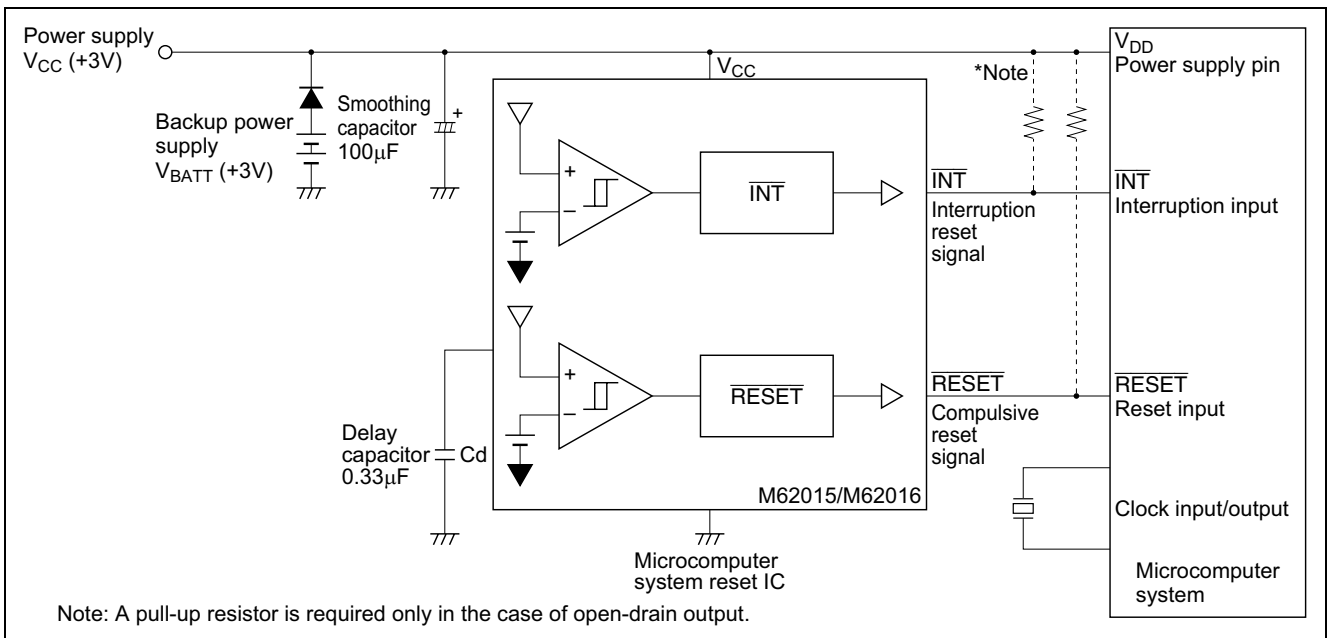


Figure 1 Application Example

Operating Description

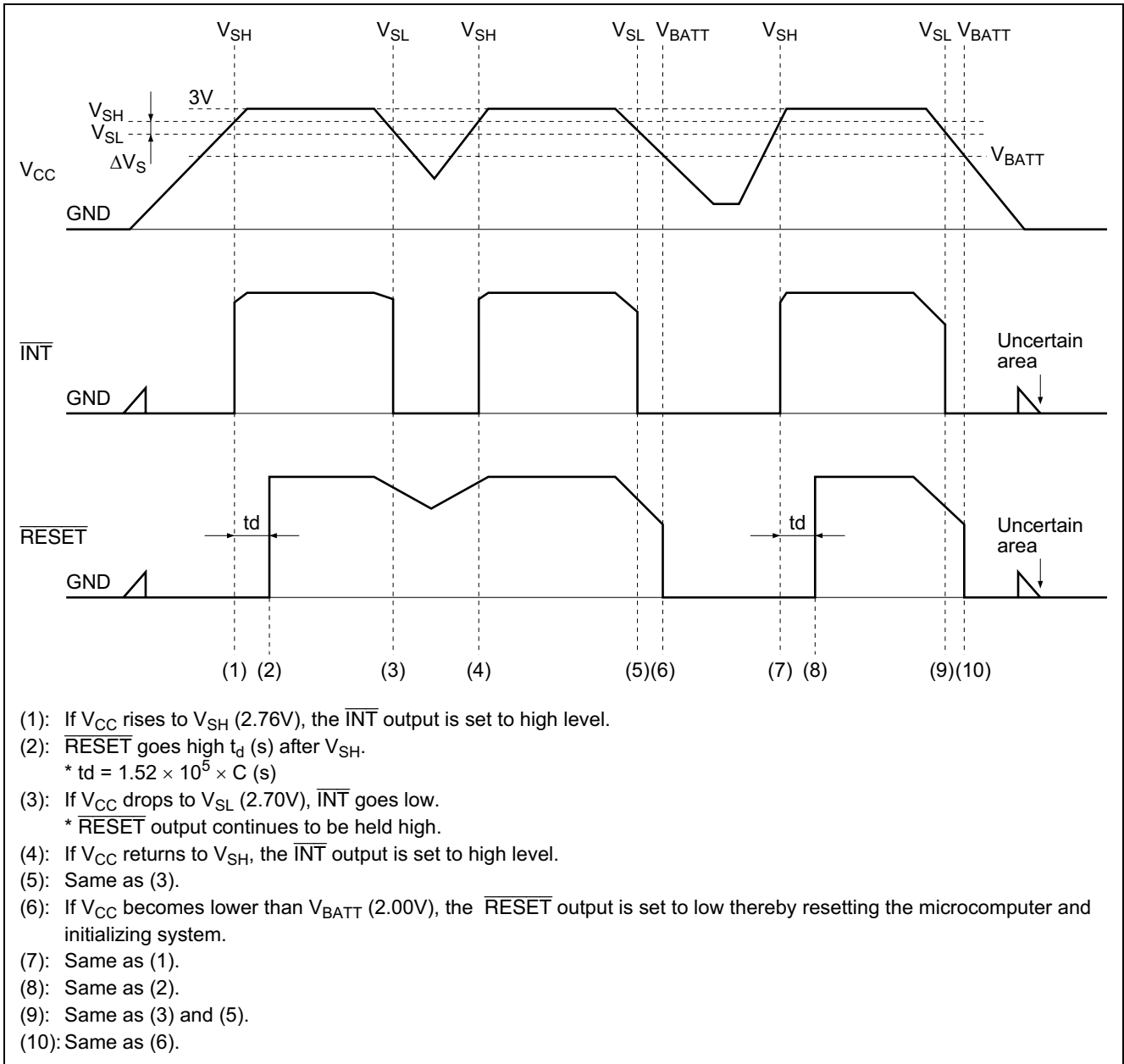
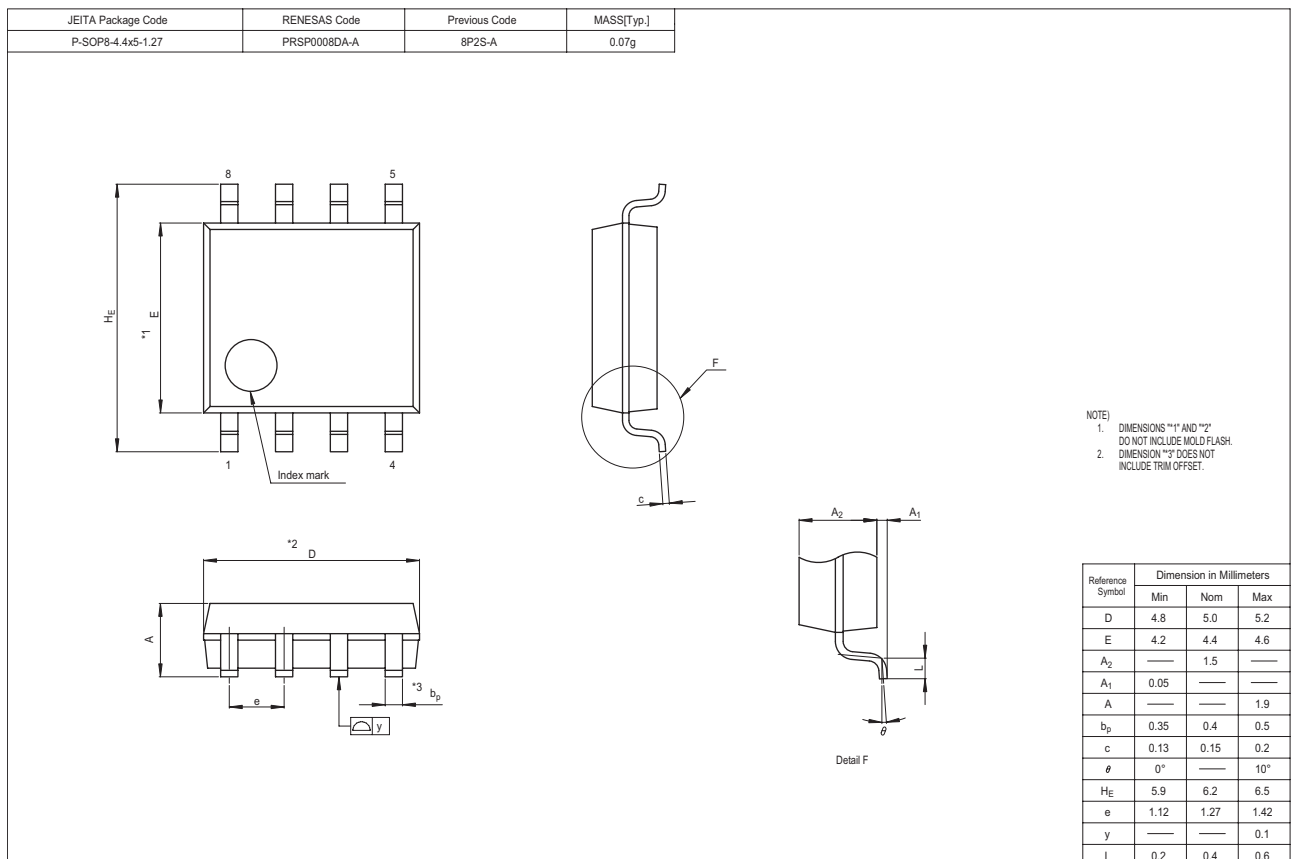
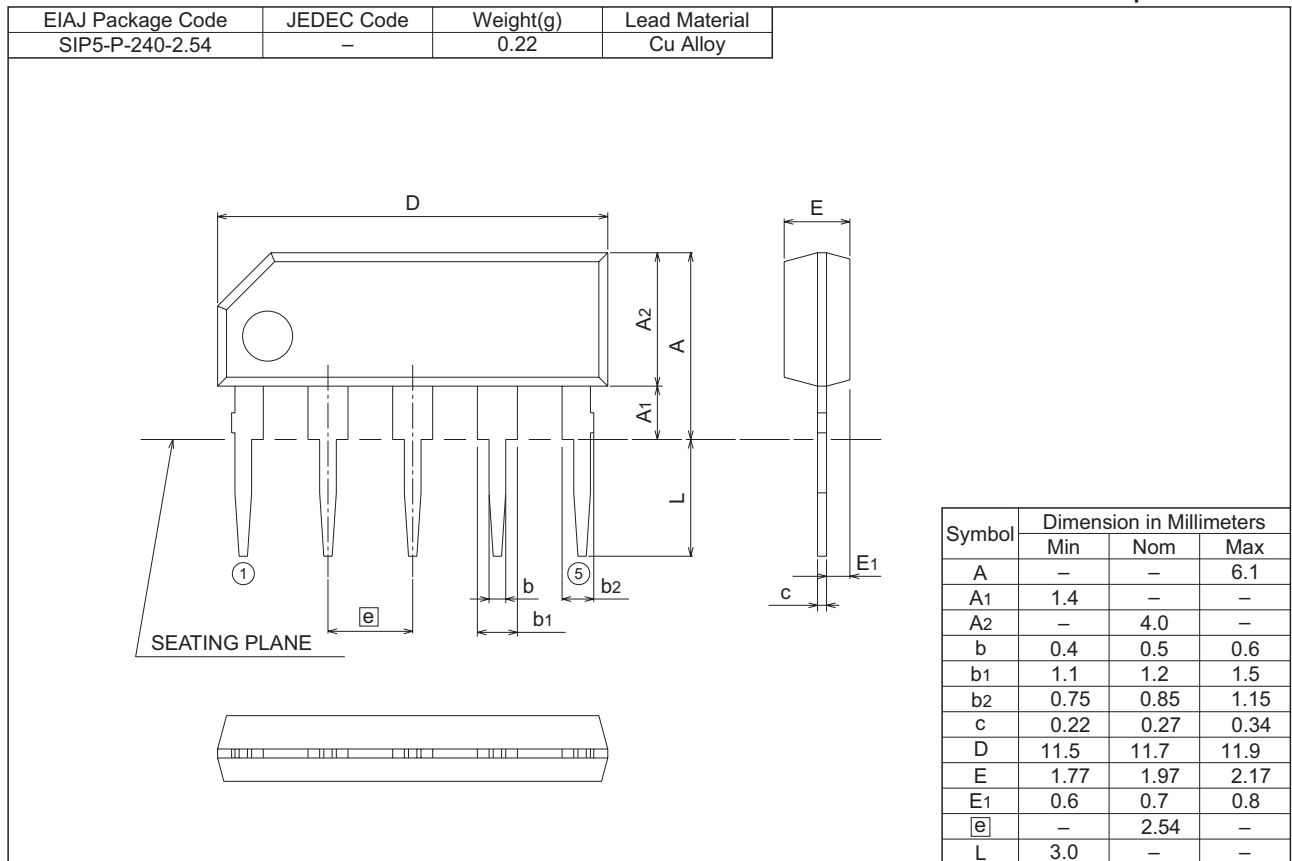


Figure 2 Operating Waveform

Package Dimensions

5P5T

Plastic 5pin 240mil SIP



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