

Under development	●
New product	

# PQ07VR5MAZ Low Power-loss Voltage Regulator

Low Power-loss Voltage Regulator with Reset Function in Detecting Input Voltage Drop

## General Description

Sharp's **PQ07VR5MAZ** is a compact, surface mount, 0.5 A output type low power-loss voltage regulator with reset signal output function in detecting input voltage drop. It is suitable for malfunction prevention of microcomputers in various electronic equipment such as AV, OA equipment when it is turned-on or it is in error of operation.

## Features

- (1) Reset signal generating function.  
(The reset detection voltage can be custom-ordered in the range of 3.5 V to 4.5 V.)
- (2) Low power-loss  
(Dropout voltage : Max. 0.5 V at  $I_o=0.3$  A)
- (3) Compact, surface mount package.  
(Equivalent to SC-63.)
- (4) Output voltage variable type (1.5 V to 7.0 V)
- (5) Overcurrent protection and overheat protection function.
- (6) Tape-packaged products and sleeve-packaged products are available.

## Applications

- (1) Power supplies of AV, OA equipment, and various electronic equipment
- (2) CD-ROM drives and CD-R drives
- (3) DVD-ROM drives

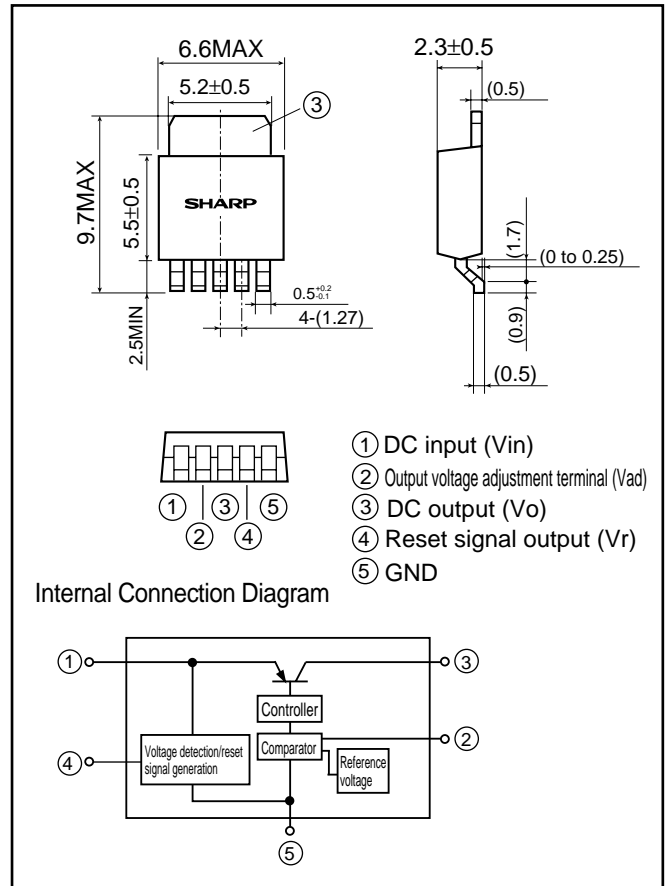
## Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Rating	Unit
*1 Input voltage	$V_{IN}$	10	V
Output voltage adjustment terminal voltage	$V_{adj}$	7	V
*1 Reset output voltage	$V_r$	10	V
Output current	$I_o$	0.5	A
Reset output current	$I_r$	5	mA
Power dissipation (no heat sink)	$P_D$	0.8	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
*2 Operating temperature	$T_{opr}$	-20 to +80	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 to +150	$^\circ\text{C}$
Soldering temperature	$T_{sol}$	260(For 10s)	$^\circ\text{C}$

\*1 All are open except GND and applicable terminals.

\*2 Overheat protection may operate at  $T = 125$  to  $150^\circ\text{C}$ .

## Outline Dimensions (Unit: mm)



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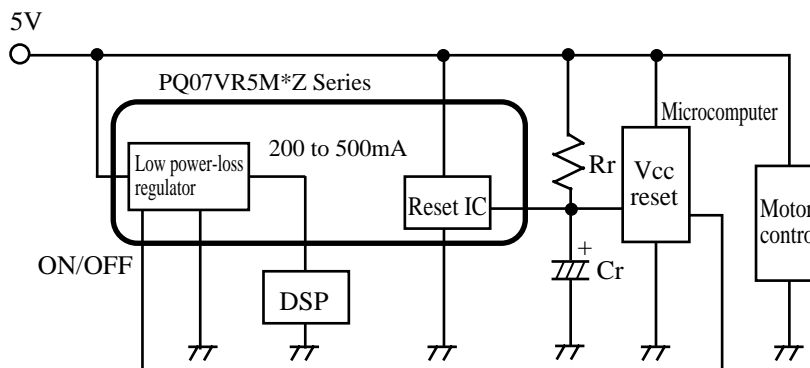
### Electrical Characteristics

( $V_{in} = 5V$ ,  $V_o = 3V$  ( $R_1 = 1k\Omega$ ) and  $I_o = 300mA$  unless otherwise specified) ( $T_a = 25^\circ C$ )

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Output voltage	$V_o$	–	1.5	–	7.0	V
Load regulation	$R_{egL}$	$I_o = 5mA$ to $0.5A$	–	0.1	2.0	%
Line regulation	$R_{egI}$	$V_{in} = 5$ to $7V, I_o = 5mA$	–	0.5	2.5	%
Ripple rejection	RR	–	45	60	–	dB
Reference voltage	$V_{ref}$	–	1.22	1.245	1.27	V
Temperature coefficient of reference voltage	$T_c V_{ref}$	$T_j = 0$ to $125^\circ C, I_o = 5mA$	–	$\pm 0.01$	–	%/ $^\circ C$
Dropout voltage	$V_{i-o}$	$V_{in} = 3.4V, I_o = 0.3A$	–	–	0.5	V
Quiescent current	$I_q$	$I_o = 0A$	–	–	5	mA
Reset threshold voltage	$V_{ri}$	$V_r \leq 0.8V, *4, R_r = 10k\Omega$	4.116	4.2	4.284	V
"L" reset output voltage	$V_{ri}$	$I_r = 5mA, I_o = 5mA$	–	–	0.8	V
Hysteresis voltage	$\Delta V_{ri}$	$I_o = 5mA$	50	150	200	mV

\*4 Output voltage when  $V_r$  becomes Low, lowering input voltage.

### Application Example to CD-ROM



## Application Circuits

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    - Alarm equipment
    - Various safety devices, etc.
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