

## PQ1Kxx3M2ZP Series Low Power-Loss Voltage Regulator

Low Output Current, Compact Surface Mount Type Low Power-Loss Voltage Regulators

### Features

- (1) Compact surface mount package(3.4 × 2.2 × 1.2 mm)
- (2) Output current : 300mA
- (3) Low power-loss  
(Dropout voltage: MAX. 0.7 V at I<sub>o</sub>=300 mA)
- (4) High ripple rejection(TYP.70 dB)
- (5) Built-in ON/OFF control function
- (6) Built-in overcurrent, overheat protection

### Applications

- (1) CD-ROM drives
- (2) DVD-ROM drives
- (3) Digital Still Cameras

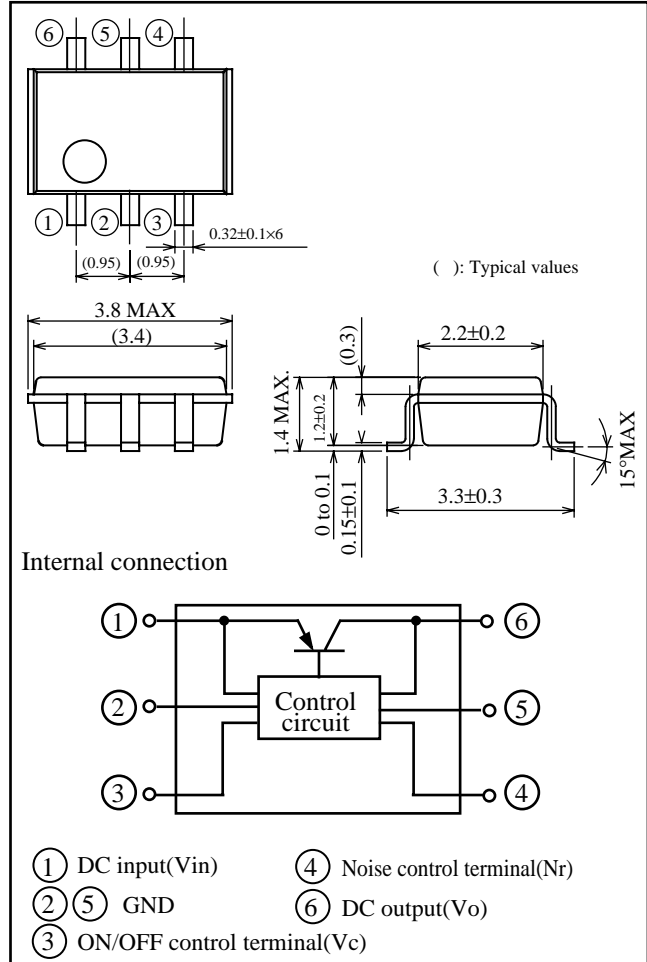
### Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
*1 Input voltage	V <sub>in</sub>	9	V
*1 ON/OFF control terminal voltage	V <sub>c</sub>	9	V
Output current	I <sub>o</sub>	300	mA
*2 Power dissipation	P <sub>d</sub>	400	mW
*3 Junction temperature	T <sub>j</sub>	150	°C
Operating temperature	T <sub>opr</sub>	-30 to +80	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C
Soldering temperature	T <sub>sol</sub>	260(For 10s)	°C

- \*1 All are open except GND and applicable terminals.  
 \*2 At surface-mounted condition  
 \*3 Overheat protection may operate at 125≤T<sub>j</sub>≤150°C.

### Outline Dimensions

(Unit: mm)



(Notice)

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(Internet)

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As of August 2000

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### Electrical Characteristics

(Unless otherwise specified,  $V_{in}=V_o(\text{TYP.})+1.0\text{V}$ ,  $V_c=1.8\text{V}$ ,  $I_o=30\text{mA}$ ,  $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output voltage	$V_o$	-	Refer to the table below.			V
Load regulation	RegL	$I_o=5\text{mA}$ to $300\text{mA}$	-	35	160	mV
Line regulation	RegI	$V_{in}=V_o(\text{TYP.})+1\text{V}$ to $V_o(\text{TYP.})+6\text{V}(\text{MAX. } 9\text{V})$	-	3.0	20	mV
Temperature coefficient of output voltage	$T_cV_o$	$I_o=10\text{mA}$ , $T_j=-25$ to $+75^\circ\text{C}$	-	0.05	-	mV/ $^\circ\text{C}$
*4 Ripple rejection	RR	-	-	70	-	dB
Output noise voltage	$V_{no}(\text{rms})$	$10\text{Hz} < f < 100\text{kHz}$ $I_o=30\text{mA}$ , $C_n=0.1\mu\text{F}$	-	30	-	$\mu\text{V}$
Dropout voltage	$V_{i-o1}$	$I_o=300\text{mA}$ , *5	-	0.4	0.7	V
*6 ON-state voltage for control	$V_c(\text{on})$	-	1.8	-	-	V
ON-state current for control	$I_c(\text{on})$	$V_c=1.8\text{V}$	-	5	30	$\mu\text{A}$
OFF-state voltage for control	$V_c(\text{off})$	-	-	-	0.4	V
Quiescent current	$I_q$	$I_o=0\text{mA}$	-	-	500	$\mu\text{A}$
Output OFF-state dissipation current	$I_{qs}$	$V_c=0.2\text{V}$	-	-	1	$\mu\text{A}$

\*4 Typical value at output voltage is 3.0V type.

\*5 Dropout voltage when output voltage lowers 100mV from the voltage at  $V_{in}=V_o+1\text{V}$ .

\*6 In case of opening control terminal ③, output voltage turns off.

### Output Voltage Line-up

( $V_{in}=V_o(\text{TYP.})+1.0\text{V}$ ,  $V_c=1.8\text{V}$ ,  $I_o=30\text{mA}$ ,  $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*7 Output voltage	<b>PQ1K213M2ZP</b>	-	2.040	2.1	2.160	V
	<b>PQ1K253M2ZP</b>		2.440	2.5	2.560	
	<b>PQ1K303M2ZP</b>		2.940	3.0	3.060	
	<b>PQ1K333M2ZP</b>		3.234	3.3	3.366	
	<b>PQ1K343M2ZP</b>		3.332	3.4	3.468	
	<b>PQ1K353M2ZP</b>		3.430	3.5	3.570	
	<b>PQ1K393M2ZP</b>		3.822	3.9	3.978	
	<b>PQ1K423M2ZP</b>		4.166	4.2	4.284	
	<b>PQ1K503M2ZP</b>		4.900	5.0	5.100	

\*7 : It is available for every 0.1V (1.3V to 5V).

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    - Gas leakage sensor breakers
    - Alarm equipment
    - Various safety devices, etc.
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