

PQ2Lxxx2MSP Series

Compact Surface Mount Type, 2-Channel Output, Low Output Current Low Power-Loss Voltage Regulators

Features

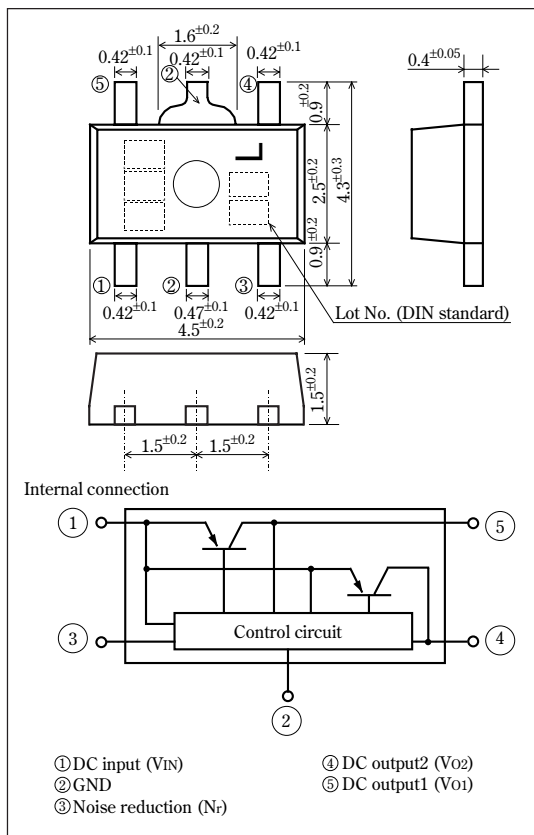
- Compact surface mount package SOT-89 (4.5×4.3×1.5 mm)
 Output 1 : 3.3V, 2.5V
 Output 2 : 2.5V, 2.3V, 1.8V } Refer to output voltage line-up
- Output current : MAX.250mA (Each output)
- Power dissipation : MAX 900mW (At mounted on PCB)
- Low power-loss
 (Dropout voltage : MAX.0.4 V at $I_O=100\text{mA}$)
- Use of ceramic capacitors is possible as output smooth capacitors

Applications

- CD-ROM drives
- DVD-ROM drives
- Digital Still Cameras

Outline Dimensions

(Unit : mm)



Absolute Maximum Ratings

($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
#1 Input voltage	V_{IN}	9	V
#2 Output current	I_{O1}	250	mA
	I_{O2}	250	
#3 Power dissipation	P_D	900	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Operating temperature	T_{opr}	-30 to +80	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$
Soldering temperature	T_{sol}	270(For 10s)	$^\circ\text{C}$

#1 All are open except GND and applicable terminals.

#2 At mounted on PCB

#3 Overheat protection may operate at $125 \leq T_j < 150^\circ\text{C}$.

• Please refer to the chapter " Handling Precautions ".

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Electrical Characteristics

(Unless otherwise specified, condition shall be $V_{IN}=V_{O1}(TYP.)+1.0V$, $I_{O1}=0.5A$, $I_{O2}=0mA$, $T_a=25^{\circ}C$)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output voltage	V_O	—	Refer to the following table			V
Load regulation	R_{egL1}	$I_{O1}=5mA$ to $200mA$	—	55	200	mV
	R_{egL2}	$I_{O2}=5mA$ to $200mA$	—	55	200	
Line regulation	R_{egI1}	$V_{IN}=V_{O1}(TYP.)+1V$ to $V_{O1}(TYP.)+6V(MAX.9V)$, $I_{O1}=30mA$	—	3	20	mV
	R_{egI2}	$V_{IN}=V_{O1}(TYP.)+1V$ to $V_{O1}(TYP.)+6V(MAX.9V)$, $I_{O2}=30mA$	—	3	20	
Temperature coefficient of output voltage	$TcVo1$	$I_{O1}=10mA$, $T_j = -25$ to $+75^{\circ}C$	—	0.1	—	mV/ $^{\circ}C$
	$TcVo2$	$I_{O2}=10mA$, $T_j = -25$ to $+75^{\circ}C$	—	0.1	—	
*4 Ripple Rejection	RR	Refer to Fig.2	—	60	—	dB
*4 Dropout voltage	$V_{no(rms)}$	$10Hz < f < 100kHz$, $I_O=30mA$, $C_n=0.01\mu F$	—	50	—	μV
ON-state voltage for control	V_{i-o1}	$I_{O1}=100mA$, *5	—	0.16	0.4	V
	V_{i-o2}	$I_{O2}=100mA$, *5	—	0.16	0.4	
Quiescent current	I_q	—	—	250	400	μA

*4 In case of typical value at 3.3V output model.

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

Output Voltage Line-up

($V_{IN}=5.0V$, $T_a=25^{\circ}C$)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output voltage	PQ2L3252MSP	Vo1	Io1=30mA, Io2=0mA	3.234	3.3	3.366	V
		Vo2	Io1=0mA, Io2=30mA	2.440	2.5	2.560	
	PQ2L3232MSP	Vo1	Io1=30mA, Io2=0mA	3.234	3.3	3.366	
		Vo2	Io1=0mA, Io2=30mA	2.240	2.3	2.360	
	PQ2L3182MSP	Vo1	Io1=30mA, Io2=0mA	3.234	3.3	3.366	
		Vo2	Io1=0mA, Io2=30mA	1.740	1.8	1.860	
	PQ2L2182MSP	Vo1	Io1=30mA, Io2=0mA	2.440	2.5	2.560	
		Vo2	Io1=0mA, Io2=30mA	1.740	1.8	1.860	

Fig.1 Test Circuit

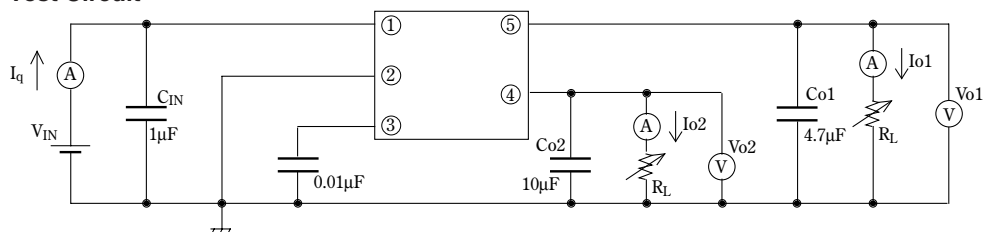
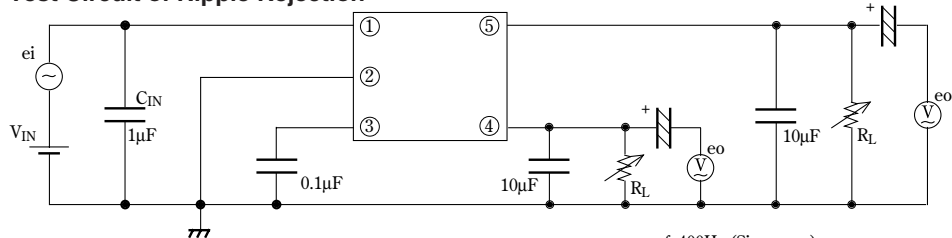


Fig.2 Test Circuit of Ripple Rejection



$f=400Hz$ (Sine wave)
 $e_i(rms)=100mV$
 $V_{IN}=V_O(TYP.)+1.0V$
 $I_O=10mA$
 $RR=20 \log \{e_i(rms)/e_o(rms)\}$

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