PQ2Lxxx2MSP Series

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

■ Features

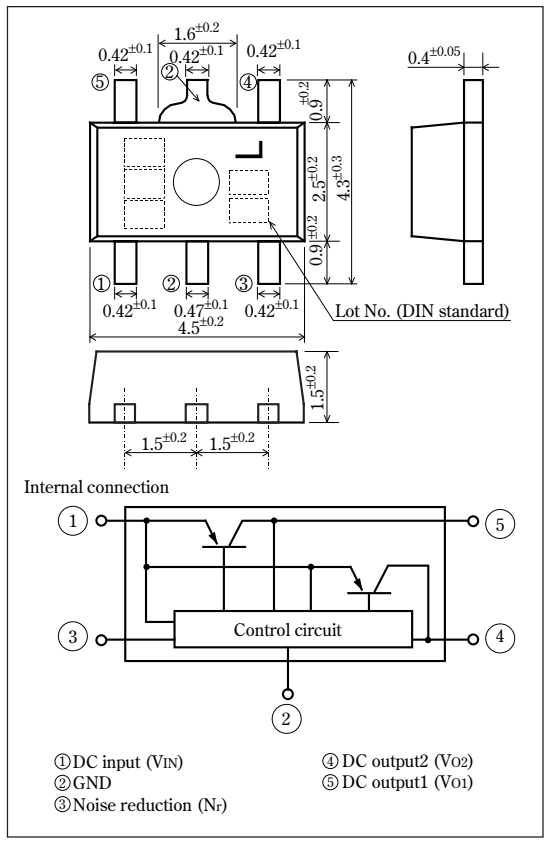
- Compact surface mount package SOT-89 (4.5×4.3×1.5 mm)
  Output 1 : 3.3V, 2.5V
  Output 2 : 2.5V, 2.3V, 1.8V
  } Refer to output voltage line-up
- Output current : MAX.250mA (Each output)
- Power dissipation : MAX 900mW (At mounted on PCB)
- Low power-loss
  (Dropout voltage : MAX.0.4 V at I_O=100mA)
- 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°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	°C
Operating temperature	T_{opr}	–30 to +80	°C
Storage temperature	T_{stg}	–55 to +150	°C
Soldering temperature	T_{sol}	270(For 10s)	°C

※1 All are open except GND and applicable terminals.
※2 At mounted on PCB
※3 Overheat protection may operate at 125<=T_j<=150°C.

• Please refer to the chapter " Handling Precautions ".

■ Electrical Characteristics

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output voltage	V_O	–	Refer to the following table			V
Load regulation	$R_{eg}L1$	I_{O1}=5mA to 200mA	–	55	200	mV
	$R_{eg}L2$	I_{O2}=5mA to 200mA	–	55	200	
Line regulation	$R_{eg}I1$	V_{IN}=V_{O1} (TYP.) +1V to V_{O1} (TYP.) +6V (MAX.9V), I_{O1}=30mA	–	3	20	mV
	$R_{eg}I2$	V_{IN}=V_{O1} (TYP.) +1V to V_{O1} (TYP.) +6V (MAX.9V), I_{O2}=30mA	–	3	20	
Temperature coefficient of output voltage	T_CV_{O1}	I_{O1}=10mA, T_j= –25 to +75°C	–	0.1	–	mV/°C
	T_CV_{O2}	I_{O2}=10mA, T_j= –25 to +75°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=0.01µF	–	50	–	µV
ON-state voltage for control	$V_{i-o}1$	I_{O1}=100mA, ※5	–	0.16	0.4	V
	$V_{i-o}2$	I_{O2}=100mA, ※5	–	0.16	0.4	
Quiescent current	I_q	–		250	400	µA

※4 In case of typical value at 3.3V ouput model.
※6 In case of opening control terminal ③, output voltage turns off.

■ Output Voltage Line-up

(V_{IN}=5.0V, Ta=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output voltage	PQ2L3252MSP	V_{O1}	I_{O1}=30mA, I_{O2}=0mA	3.234	3.3	3.366	V
		V_{O2}	I_{O1}=0mA, I_{O2}=30mA	2.440	2.5	2.560	
	PQ2L3232MSP	V_{O1}	I_{O1}=30mA, I_{O2}=0mA	3.234	3.3	3.366	
		V_{O2}	I_{O1}=0mA, I_{O2}=30mA	2.240	2.3	2.360	
	PQ2L3182MSP	V_{O1}	I_{O1}=30mA, I_{O2}=0mA	3.234	3.3	3.366	
		V_{O2}	I_{O1}=0mA, I_{O2}=30mA	1.740	1.8	1.860	
	PQ2L2182MSP	V_{O1}	I_{O1}=30mA, I_{O2}=0mA	2.440	2.5	2.560	
		V_{O2}	I_{O1}=0mA, I_{O2}=30mA	1.740	1.8	1.860	

Fig.1 Test Circuit

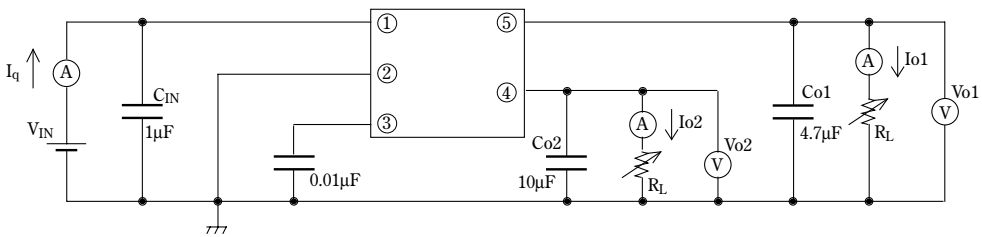
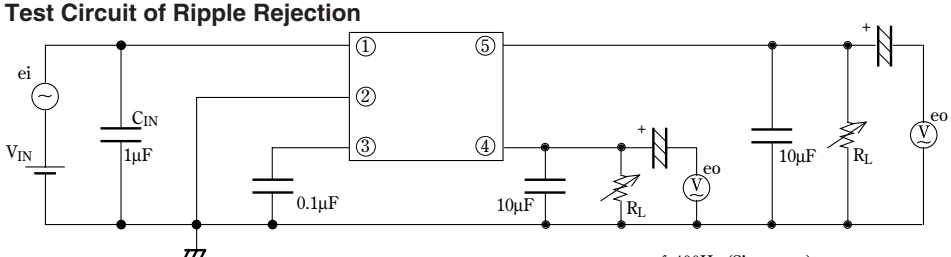


Fig.2 Test Circuit of Ripple Rejection



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

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  --- Office automation equipment
  --- Telecommunication equipment [terminal]
  --- Test and measurement equipment
  --- Industrial control
  --- Audio visual equipment
  --- Consumer electronics

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

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