

SHARP

PQ033ES1MXP

PQ050ES1MXP

Under development

New product

Low Power-Loss Voltage Regulator

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

Features

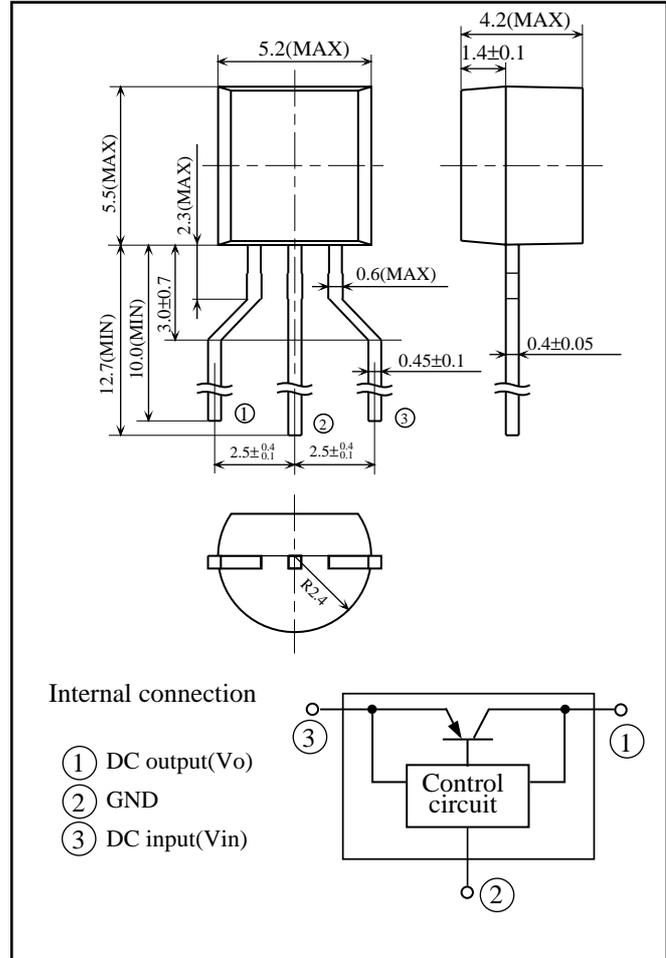
- (1) Compact package : TO-92 type
(Size(mold part) $5.2 \times 5.5 \times 4.2$ mm)
- (2) Small current output : 100 mA(MAX.)
- (3) Low consumption current :
Quiescent current I_q =MAX. 350 μ A
- (4) Low power-loss :
Dropout voltage : MAX. 0.26 V at I_o =60 mA
Dropout voltage : MAX. 0.4 V at I_o =150 mA
- (5) Built-in overcurrent, overheat protection functions
- (6) Taped package

Applications

- (1) TV
- (2) VCR
- (3) Air conditioner
- (4) DVD player
- (5) Audio equipment

Outline Dimensions

(Unit: mm)



Absolute Maximum Ratings

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

Parameter	Symbol	Ratings	Unit
*1 Input voltage	V_{in}	16	V
Output current	I_o	150	mA
*2 Power dissipation	P_d	520	mW
*3 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}	260(For 10s)	$^\circ\text{C}$

*1 All are open except GND and applicable terminals.

*2 At mounted condition

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

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(Internet)

•Data for Sharp's optoelectronic/power devices is provided on internet. (Address <http://sharp-world.com/ecg/>)

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Low Power-Loss Voltage Regulator

■ Electrical Characteristics

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output voltage	V_o	-	Refer to the table below.			V
Load regulation	RegL1	$I_o=5\text{mA}$ to 60mA	-	10	50	mV
	RegL2	$I_o=5\text{mA}$ to 100mA	-	20	100	mV
	RegL3	$I_o=5\text{mA}$ to 150mA	-	30	160	mV
Line regulation	RegI	$V_{in}=V_o(\text{TYP.})+1\text{V}$ to $V_o(\text{TYP.})+6\text{V}$	-	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/ $^\circ\text{C}$
Ripple rejection	RR	-	-	55	-	dB
Dropout voltage	Vi-o1	$I_o=60\text{mA}$, $V_{in}=*4$	-	0.11	0.26	V
	Vi-o2	$I_o=150\text{mA}$, $V_{in}=*4$	-	0.2	0.4	V
Quiescent current	I_q	$I_o=0\text{mA}$	-	170	350	μA

*4 Dropout voltage when output voltage lowers 0.1V from the voltage at $V_{in}=V_o+1\text{V}$.

■ Output Voltage Line-up

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output voltage	PQ033ES1MXP	-	3.234	3.3	3.366	V
	PQ050ES1MXP		4.900	5.0	5.100	

As of September 2002

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 - Test and measurement equipment
 - Industrial control
 - Audio visual equipment
 - Consumer electronics
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 - Traffic signals
 - Gas leakage sensor breakers
 - Alarm equipment
 - Various safety devices, etc.
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