

PQ033ES1MWP/PQ050ES1MWP

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

■ Features

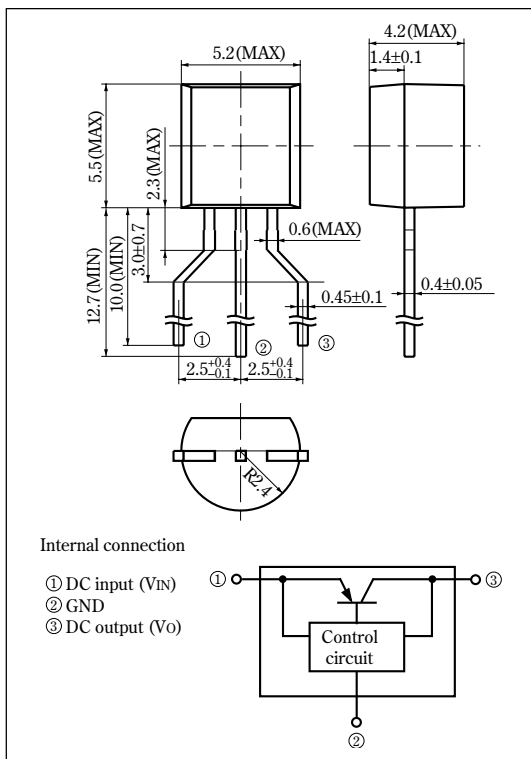
- Compact package: TO-92 type
(Size (mold part): 5.2×5.5×4.2 mm)
- Small current output: MAX. 150mA
- Low dissipation current:
Quiescent current I_q =MAX. 350 μ A
- Low power-loss:
Dropout voltage: MAX. 0.26 V at I_o =60 mA
Dropout voltage: MAX. 0.4 V at I_o =150 mA
- Built-in overcurrent, overheat protection functions
- Taped package

■ Applications

- TV, VCR
- Air conditioners
- DVD players
- Audio equipment

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

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

Parameter	Symbol	Rating	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 No heat sink

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

•Please refer to the chapter " Handling Precautions ".

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■ **Electrical Characteristics**

(Unless otherwise specified, $V_{IN}=V_O(TYP.)+1.0V$, $I_O=30mA$, $T_a=25^\circ C$)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output voltage	V_O	–	Refer to the table below.			V
Load regulation	R_{egL1}	$I_O=5mA$ to 60mA	–	10	50	mV
	R_{egL2}	$I_O=5mA$ to 100mA	–	20	100	mV
	R_{egL3}	$I_O=5mA$ to 150mA	–	30	160	mV
Line regulation	R_{egI}	$V_{IN}=V_O(TYP.)+1V$ to $V_O(TYP.)+6V$	–	3.0	20	mV
Temperature coefficient of output voltage	T_cV_O	$I_O=10mA$, $T_j=25$ to $75^\circ C$	–	0.05	–	mV/ $^\circ C$
Ripple rejection	RR	–	–	55	–	dB
Dropout voltage	V_{I-O}	$I_O=60mA$, $V_{IN}=\#4$	–	0.11	0.26	V
	V_{I-O}	$I_O=150mA$, $V_{IN}=\#4$	–	0.2	0.4	V
Quiescent current	I_q	$I_O=0mA$	–	170	350	μA

#4 Dropout voltage when output voltage lowers 0.1V from the voltage at $V_{IN}=V_O+1V$.

■ **Output Voltage Line-up**

($V_{IN}=V_O(TYP.)+1.0V$, $I_O=30mA$, $T_a=25^\circ C$)

	Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output voltage	PQ033ES1MWP	V_O	–	3.234	3.3	3.366	V
	PQ050ES1MWP			4.900	5.0	5.100	

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