

# SHARP

## PQ3RD13 Low Power-Loss Voltage Regulator

3.3V Output, High Cost Performance Low Power-Loss Voltage Regulator

### General Description

Sharp's **PQ3RD13** is 3.3V / 1A output type low power-loss voltage regulator(TO-220).

It contributes to energy and space saving of various electronic equipment such as AV, OA equipment.

### Features

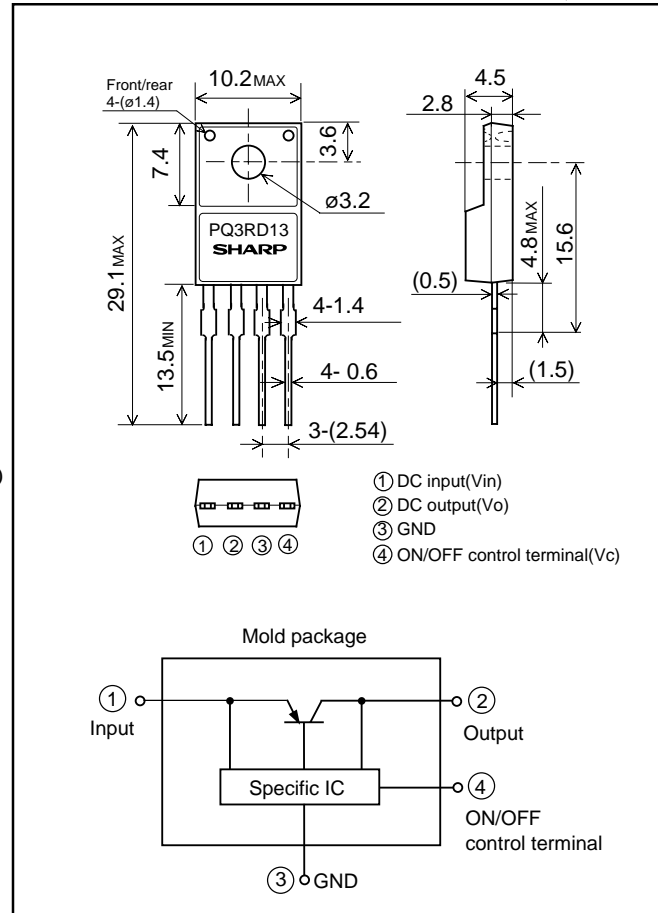
- (1) Low power-loss  
(Dropout voltage: MAX. 0.5V at  $I_o=0.5A$ )
- (2) 3.3 V output
- (3) Compact resin full-mold package(equivalent to TO-220)
- (4) Low voltage operation(Minimum supply voltage: 3.7V)
- (5) Output voltage precision:  $\pm 3.0\%$
- (6) Built-in ON/OFF control function
- (7) Overcurrent, overheat protection functions
- (8) Lead forming type is also available.(**PQ3RD13B**)

### Applications

- (1) Power supplies for various electronic equipment such as AV or OA.

### Outline Dimensions

(Unit:mm)



(Notice)

- In the absence of device specification sheets, SHARP takes no responsibility for any defects that may occur in equipment using any SHARP devices shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest device specification sheets before using any SHARP device.

- Specifications are subject to change without notice for improvement.

(Internet)

- Data for Sharp's optoelectronic/power devices is provided for internet. ( Address <http://www.sharp.co.jp/ecg/>)

# SHARP

Tec.PW960301

**SHARP****PQ3RD13****Low Power-Loss Voltage Regulator****■ Absolute Maximum Ratings**

(Ta=25°C)

Parameter	Symbol	Rating	Unit
*1 Input voltage	V <sub>in</sub>	20	V
*1 ON/OFF control terminal voltage	V <sub>c</sub>	20	V
Output current	I <sub>o</sub>	1	A
*2 Power dissipation	P <sub>d1</sub>	1.4	W
	P <sub>d2</sub>	15	W
*3 Junction temperature	T <sub>j</sub>	150	°C
Operating temperature	T <sub>opr</sub>	-20 to +80	°C
Storage temperature	T <sub>stg</sub>	-40 to +150	°C
Soldering temperature	T <sub>sol</sub>	260(For 10s)	°C

\*1 All are open except GND and applicable terminals.

\*2 Pd1: No heat sink, Pd2: With infinite heat sink

\*3 Overheat protection may operate at 125&lt;=Tj&lt;=150°C.

**■ Electrical Characteristics**(Unless otherwise specified, V<sub>in</sub>=5V, I<sub>o</sub>=0.5A.)

(Ta=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MIN.	Unit
Input voltage	V <sub>in</sub>	-	3.7	-	20	V
Output voltage	V <sub>o</sub>	-	3.201	3.3	3.399	V
Load regulation	Reg <sub>L</sub>	I <sub>o</sub> =5mA to 1A	-	0.1	2	%
Line regulation	Reg <sub>I</sub>	V <sub>in</sub> =4 to 10V, I <sub>o</sub> =5mA	-	0.1	2.5	%
Temperature coefficient of output voltage	T <sub>c</sub> V <sub>o</sub>	T <sub>j</sub> =0 to 125°C, I <sub>o</sub> =5mA	-	±0.02	-	%/°C
Ripple rejection	RR	-	45	55	-	dB
Dropout voltage	V <sub>i-o</sub>	V <sub>in</sub> =3.7V	-	-	0.5	V
*4 ON-state voltage for control	V <sub>c(on)</sub>	-	2.0	-	-	V
ON-state current for control	I <sub>c(on)</sub>	V <sub>c</sub> =2.7V	-	-	20	μA
OFF-state voltage for control	V <sub>c(off)</sub>	-	-	-	0.8	V
OFF-state current for control	I <sub>c(off)</sub>	V <sub>c</sub> =0.4V	-	-	-0.4	mA
Quiescent current	I <sub>q</sub>	I <sub>o</sub> =0A	-	-	10	mA

\*4 In case of opening control terminal (4), output voltage turns on.

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As of March 1996

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