

PQ5TS1 series Low Power-Loss Voltage Regulator

0.15A Output, Surface Mount Type Low Power-Loss Voltage Regulators
(Built-in Reset Signal Generating Function)

General Description

Sharp's **PQ5TS1 series** are 0.15A output, surface mount type low power-loss voltage regulators with built-in reset signal generating function. They are suitable for malfunction prevention of microcomputers in various electronic equipment such as AV, OA equipment when they are turned-on or they are in error of operation.

Features

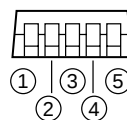
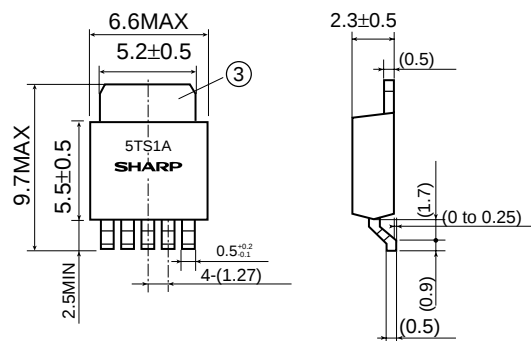
- (1) Built-in reset signal generating function
(Available 7 series of reset detection voltage)
- (2) Low power-loss
(Dropout voltage: MAX. 1.2V at $I_o=0.1A$)
- (3) Surface mount type package
(Equivalent to SC-63)
- (4) High-precision output type
(Output voltage precision: $\pm 3.0\%$)
- (5) Overcurrent, overheat protection functions

Applications

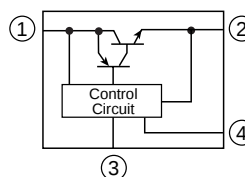
- (1) Power supplies for various electronic equipment such as AV, OA.

Outline Dimensions

(Unit:mm)



Internal connection diagram



- ① DC input (V_{in})
- ② DC output (V_o)
- ③ GND
- ④ Reset output (V_r)
- ⑤ NC

Absolute Maximum Ratings

($T_a=25^\circ C$)

Parameter	Symbol	Rating	Unit
*1 Input voltage	V_{in}	15	V
*1 Reset output applicable voltage	V_r	15	V
Output current	I_o	0.15	A
Reset output current	I_r	5	mA
Power dissipation	P_D	0.8	W
Junction temperature	T_j	150	$^\circ C$
*2 Operating temperature	T_{opr}	-20 to +80	$^\circ C$
Storage temperature	T_{stg}	-40 to +150	$^\circ C$
Soldering temperature	T_{sol}	260 (For 10s)	$^\circ C$

*1 All are open except GND and applicable terminals.

*2 Overheat protection may operate at $125 \leq T_j < 150^\circ C$.

(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/>)

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■ Electrical Characteristics (Unless otherwise specified, $V_{in}=7V$, $I_o=50mA$, $T_a=25^\circ C$)

($T_a=25^\circ C$)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output voltage	V_o	—	4.85	5.0	5.15	V
Load regulation	RegL	$I_o=5mA$ to $150mA$	—	0.1	2.0	%
Line regulation	RegI	$V_{in}=7$ to $12V$, $I_o=5mA$	—	0.5	2.5	%
Ripple rejection	RR	—	45	55	—	dB
Temperature coefficient of output voltage	TcV_o	$T_j=0$ to $125^\circ C$	—	± 0.02	—	$\%/^\circ C$
Dropout voltage	V_{i-o}	*3, $I_o=0.1A$	—	—	1.2	V
Quiescent current	I_q	$I_o=0A$	—	—	10	mA
Low reset output voltage	V_{rl}	$I_r=5mA$, $I_o=5mA$	—	—	0.8	V
High reset output voltage	V_{rh}	$I_o=5mA$	$V_o-0.2$	—	—	V

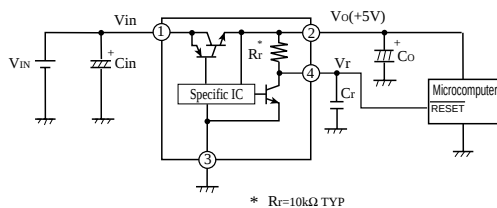
*3 Input voltage shall be the value when output voltage is 95% in comparison with the initial value.

■ Reset Threshold Voltage Line-up

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Reset threshold voltage	PQ5TS1A	V _{IT}	*4, I _o =5mA	4.55	4.7	4.85	V
	PQ5TS1B			4.35	4.5	4.65	
	PQ5TS1C			4.05	4.2	4.35	
	PQ5TS1D			3.75	3.9	4.05	
	PQ5TS1E			3.45	3.6	3.75	
	PQ5TS1F			3.15	3.3	3.45	
	PQ5TS1G			2.95	3.1	3.25	

*4 Output voltage shall be the value when input voltage lowers and V_r becomes low.

■ Typical Application



■ Reset Output Response Characteristics

