

Under development	
New product	●

PQxxxDZ01Z series Low Power-Loss Voltage Regulator

SC-63 Package, Low Power-Loss Voltage Regulator

Features

- (1) Output current : 1 A
- (2) Low dropout voltage: MAX. 0.5 V($I_o=0.5$ A)
- (3) Built-in ON/OFF control function
- (4) Built-in overcurrent protection, overheat protection
- (5) SC-63 package.

Applications

- (1) AV equipment.
- (2) OA equipment.

Model Line-up

Package type	Output voltage(V_o)	
	3.3 V	5.0 V
Taping	PQ033DZ01ZP	PQ050DZ01ZP
Sleeve	PQ033DZ01ZZ	PQ050DZ01ZZ

Absolute Maximum Ratings

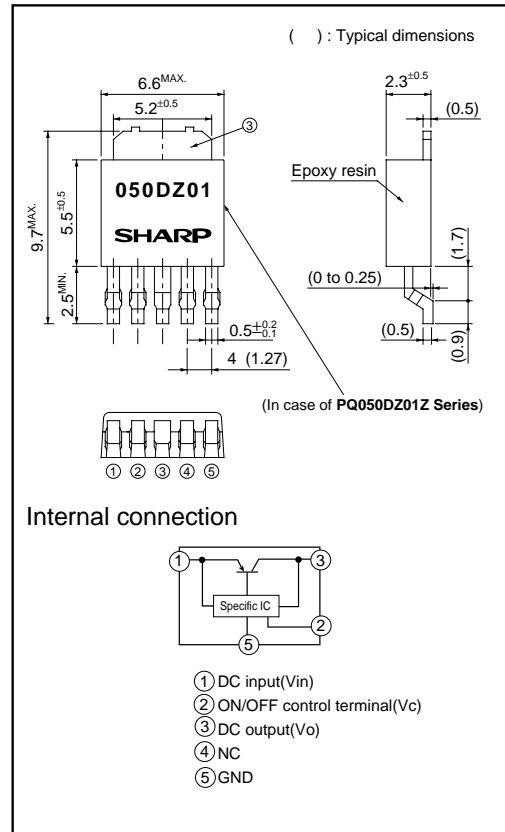
($T_a=25^\circ\text{C}$)

Parameter	Symbol	Ratings		Unit
		PQ033DZ01Z	PQ050DZ01Z	
*1 Input voltage	V_{in}	9	10	V
*1 ON/OFF control terminal voltage	V_C	9	10	V
Output current	I_o	1		A
*2 Power dissipation	P_d	5		W
*3 Junction temperature	T_j	150		$^\circ\text{C}$
Operating temperature	T_{opr}	- 30 to +85		$^\circ\text{C}$
Storage temperature	T_{stg}	- 40 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 P_d : With infinite heat sink.
- *3 Overheat protection may operate at $125 \leq T_j \leq 150^\circ\text{C}$.

Outline Dimensions

(Unit : mm)



(Notice)

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Electrical Characteristics

(Unless otherwise specified, $V_{in}=V_o(\text{TYP.})+2\text{V}$, $I_o=0.5\text{A}$, $V_c=2.7\text{V}$, $T_a=25^\circ\text{C}$)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output voltage	PQ033DZ01Z	-	3.201	3.3	3.399	V
	PQ050DZ01Z		4.85	5.0	5.15	
Load regulation	RegL	$I_o=5\text{mA}$ to 1.0A	-	0.1	1.0	%
Line regulation	RegI	*4, $I_o=5\text{mA}$	-	0.1	1.0	%
Temperature coefficient of output voltage	$T_c V_o$	$T_j=0$ to 125°C , $I_o=5\text{mA}$	-	± 0.01	-	$\%/^\circ\text{C}$
Ripple rejection	RR	-	-	60	-	dB
Dropout voltage	V_{i-o}	*5, $I_o=0.5\text{A}$	-	0.2	0.5	V
*6 ON-state voltage for control	$V_{C(\text{on})}$	-	2.0	-	-	V
ON-state current for control	$I_{C(\text{on})}$	$V_c=2.7\text{V}$	-	-	200	μA
OFF-state voltage for control	$V_{C(\text{off})}$	-	-	-	0.8	V
OFF-state current for control	$I_{C(\text{off})}$	$V_c=0.4\text{V}$	-	-	2	μA
Quiescent current	I_q	$I_o=0\text{A}$	-	3	5	mA
Output OFF-state dissipation current	I_{qs}	$I_o=0\text{A}$, $V_c=0.4\text{V}$	-	-	5	μA

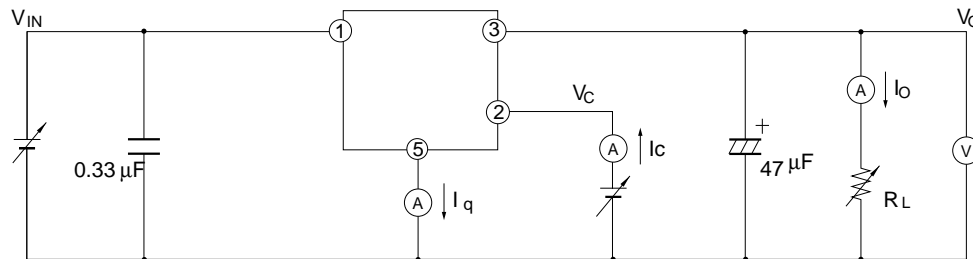
*4 PQ033DZ01Z : $V_{in} = 4.3$ to 8.3V , PQ050DZ01Z: $V_{in} = 6$ to 10V

*5 PQ033DZ01Z : $V_{in} = 3.7\text{V}$

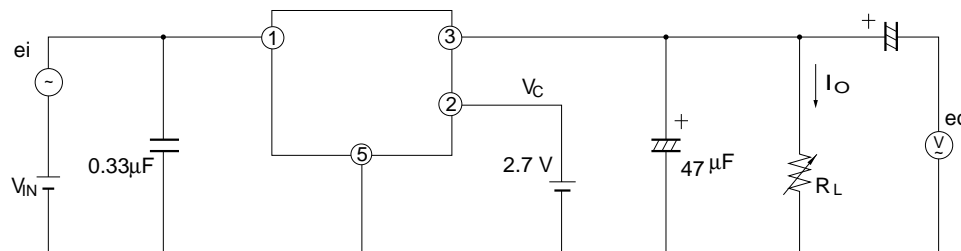
PQ050DZ01Z : Input voltage shall be the value when output voltage is 95% in comparison with the initial value.

*6 In case of opening control terminal ②, output voltage turns off.

Standard Test Circuit



Test Circuit for Ripple Rejection



$f=120\text{Hz}$ (sine wave)

$e_i(\text{rms})=0.5\text{V}$

$V_{in}=7\text{V}$

$V_{in}=5.3\text{V}$

$I_o=0.3\text{A}$

$RR=20\log(e_i(\text{rms})/e_o(\text{rms}))$

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