

PQ070XZ02ZxH

Low Voltage Operation
Low Power-loss Voltage Regulator

■ Features

- 1.Low voltage operation (Minimum operating voltage: 2.35V)
- 2.Low dissipation current
Dissipation current at no load: MAX.2mA
Output OFF-state dissipation current: MAX.5μA
- 3.Low power-loss (Dropout voltage: MAX.0.5V)
- 4.Built-in overcurrent and overheat protection functions
- 5.RoHS directive compliant

■ Applications

- 1.Peripheral equipment of personal computers
- 2.Power supplies for various electronic equipment such as DVD player or STB

■ Model Line-up

Output current (I _o)	Package type	Variable output
2A	Taping	PQ070XZ02ZPH
	Sleeve	PQ070XZ02ZZH

■ Absolute Maximum Ratings

(T_a=25°C)

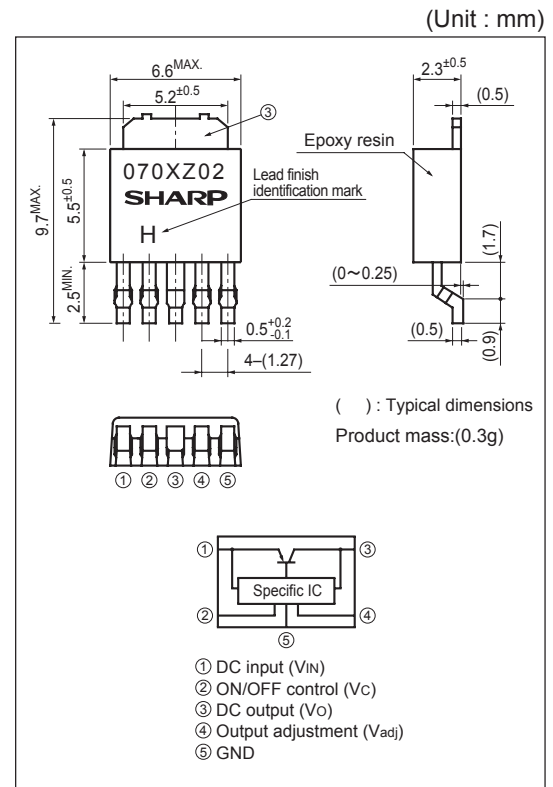
Parameter	Symbol	Rating	Unit
*1 Input voltage	V _{IN}	10	V
*1 Output control voltage	V _C	10	V
*1 Output adjustment pin voltage	V _{adj}	5	V
Output current	I _o	2	A
*2 Power dissipation	P _d	8	W
*3 Junction temperature	T _j	150	°C
Operating temperature	T _{opr}	-40 to +85	°C
Storage temperature	T _{stg}	-40 to +150	°C
Soldering temperature	T _{sol}	260(10s)	°C

*1 All are open except GND and applicable terminals.

*2 P_d:With infinite heat sink

*3 There is case that over heat protection operates at the temperature T_j:125°C to 150°C, so this item cannot be used in this temperature range.

■ Outline Dimensions



Lead finish:Lead-free solder plating
(Composition: Sn2Cu)

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Electrical Characteristics

(Unless otherwise specified, condition shall be $V_{IN}=5V$, $V_O=3V(R1=1k\Omega)$, $I_O=0.5A$, $V_C=2.7V$, $T_a=25^\circ C$)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input voltage	V_{IN}	-	2.35	-	10	V
Output voltage	V_O	-	1.5	-	7	V
Load regulation	R_{regL}	$I_O=5mA$ to 2.0A	-	0.2	2	%
Line regulation	R_{regl}	$V_{IN}=4$ to 8V, $I_O=5mA$	-	0.2	1	%
Ripple rejection	RR	Refer to Fig.2	45	60	-	dB
Dropout voltage	V_{I-O}	$V_{IN}=2.85V, I_O=2.0A$	-	-	0.5	V
Reference voltage	V_{ref}	-	1.225	1.25	1.275	V
Temperature coefficient of reference voltage	TcV_{ref}	$T_j=0$ to $125^\circ C$, $I_O=5mA$	-	± 1.0	-	%
*4 ON-state voltage for control	$V_{C(ON)}$	*4	2.0	-	-	V
ON-state current for control	$I_{C(ON)}$	-	-	-	200	μA
OFF-state voltage for control	$V_{C(OFF)}$	$I_O=0A$	-	-	0.8	V
OFF-state current for control	$I_{C(OFF)}$	$I_O=0A, V_C=0.4V$	-	-	2	μA
Quiescent current	I_q	$I_O=0A$	-	1	2	mA
Output OFF-state consumption current	I_{qs}	$V_C=0.4V$	-	-	5	μA

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

Fig.1 Test Circuit

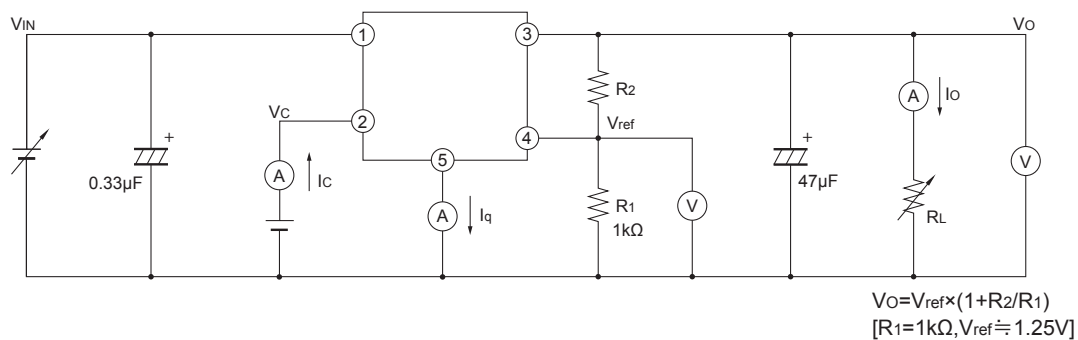


Fig.2 Test Circuit for Ripple Rejection

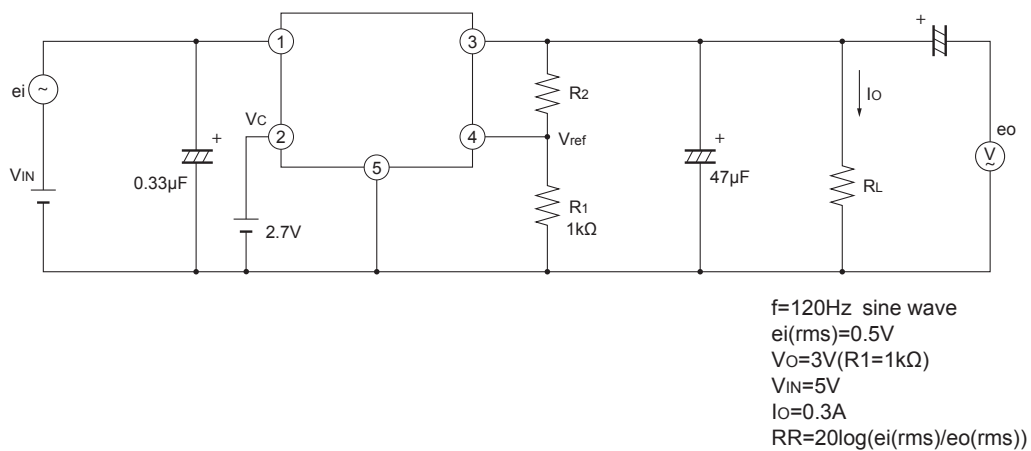
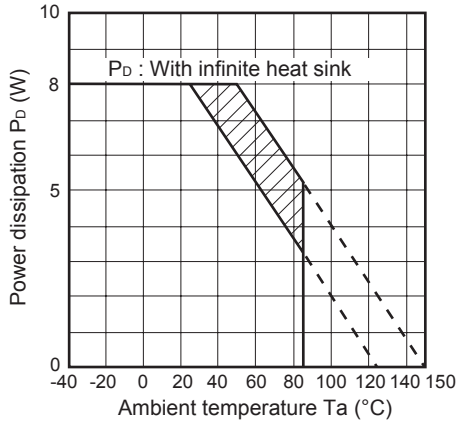


Fig.3 Power Dissipation vs. Ambient Temperature



Note) Oblique line portion: Overheat protection may operate in this area.

Fig.4 Overcurrent Protection Characteristics

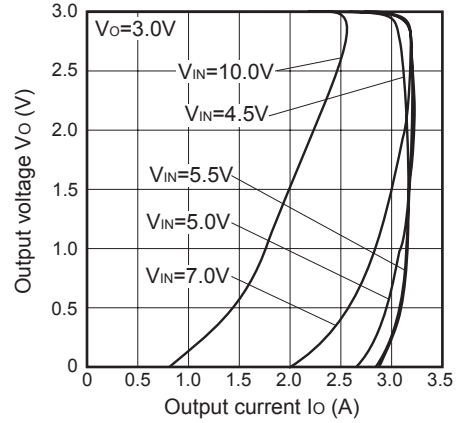
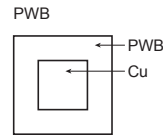
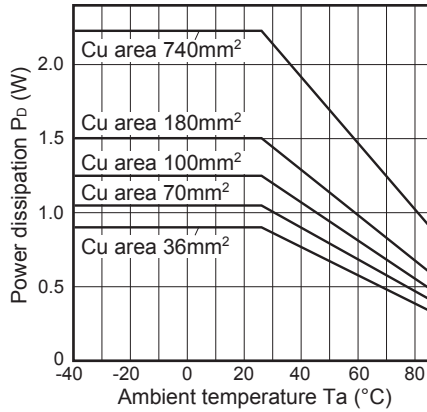


Fig.5 Power Dissipation vs. Ambient Temperature (Typical Value)



Material : Glass-cloth epoxy resin
 Size : 50×50×1.6mm
 Cu thickness : 35μm

Fig.6 Output Voltage Adjustment Characteristics (Typical Value)

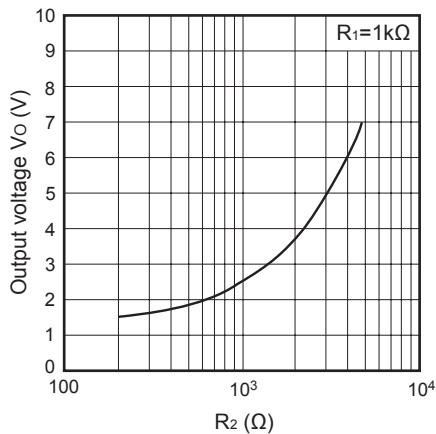
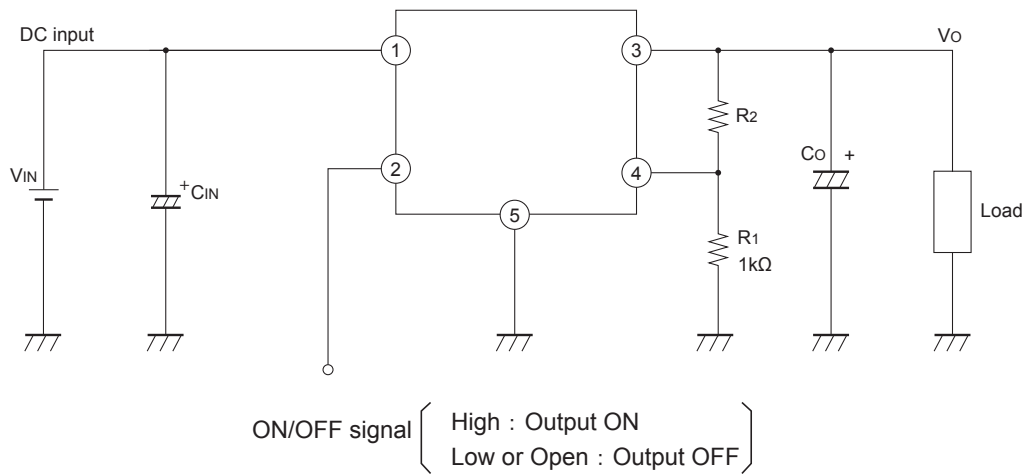


Fig.7 Typical Application



■ Setting of Output Voltage

Output voltage is able to set from 1.5V to 7V when resistors R₁ and R₂ are attached to ③,④,⑤ terminals. As for the external resistors to set output voltage, refer to the figure below and Fig.6.

