Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

PQxxxEH02ZxH Series

Low Voltage Operation
Low Power-Loss Voltage Regulators

■ Features

1.Low voltage operation
(Minimum operating voltage: 2.35V)
2.5V input → available 1.5 to 1.8V output
2.Large output current type (I_O: 2A)
3.Low dissipation current
(Quiescent current : MAX. 2mA
Output OFF-state dissipation current: MAX.5μA)
4.Low power-loss
5.Built-in overcurrent and overheat protection functions
6.TO-263 package
7.RoHS directive compliant

■ Applications

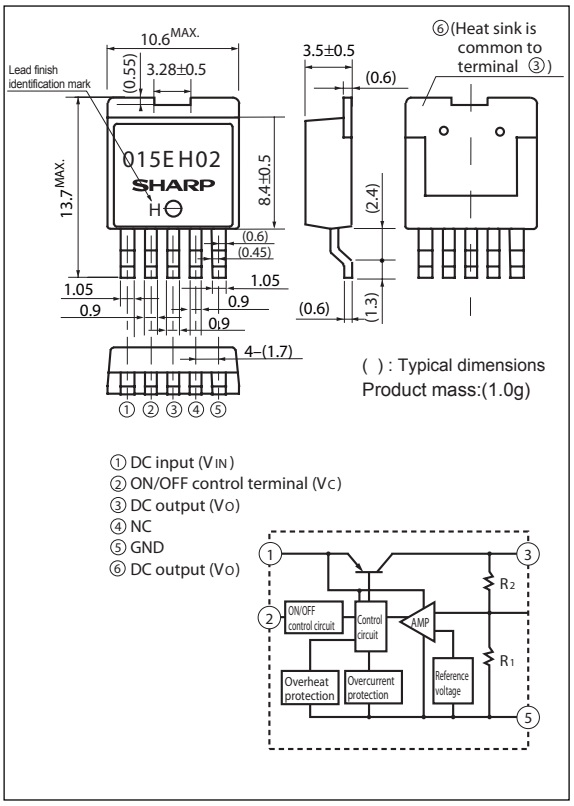
1.Personal computers and peripheral equipment
2.Power supplies for various digital electronic equipment such as DVD player or STB
3.Power supplies for automotive equipment such as car navigation system

■ Model Line-up

Output current (I_O)	Package type	Output voltage (V_O)		
		1.5V	1.8V	2.5V
2A	Taping	PQ015EH02ZPH	PQ018EH02ZPH	PQ025EH02ZPH
	Sleeve	PQ015EH02ZZH	PQ018EH02ZZH	PQ025EH02ZZH

■ Outline Dimensions

(Unit : mm)



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

■ Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Rating	Unit
*1 Input voltage	V_{IN}	10	V
*1 Output control voltage	V_C	10	V
Output current	I_O	2	A
*2 Power dissipation	P_D	35	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 Overheat protection may operate at Tj:125°C to 150°C

■ Electrical Characteristics

(Unless otherwise specified, condition shall be V_{IN}=V_O(TYP.)+1V, I_O=1A,V_C=2.7V,T_a=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input voltage	V_{IN}	-	Refer to the table below			V
Output voltage	V_O	-	Refer to the table below			V
Load regulation	RegL	I_O=5mA to 2A	-	0.2	2.0	%
Line regulation	RegI	V_{IN}=V_O(TYP)+1V to V_O(TYP)+6V , I_O=5mA	-	0.1	1.0	%
Temperature coefficient of output voltage	T_CV_O	Tj=0 to +125°C, I_O=5mA	-	±0.01	-	%/°C
Ripple rejection	RR	Refer to Fig.2	45	60	-	dB
※4 ON-state voltage for control	$V_{C(ON)}$	-	2.0	-	-	V
ON-state current for control	$I_{C(ON)}$	-	-	-	200	μA
OFF-state voltage for control	$V_{C(OFF)}$	-	-	-	0.8	V
OFF-state current for control	$I_{C(OFF)}$	V_C=0.4V	-	-	2	μA
Quiescent current	I_q	I_O=0A	-	1	2	mA
Output OFF-state dissipation current	I_{qs}	I_O=0A, V_C=0.4V	-	-	5	μA

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

■ Input Voltage range

Model No.	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
PQ015EH02ZxH	V_{IN}	I_O=2A, V_C=2.7V, Ta=25°C	2.35	-	10	V
PQ018EH02ZxH			2.35	-	10	
PQ025EH02ZxH			3.0	-	10	

■ Output Voltage

Model No.	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
PQ015EH02ZxH	V_O	V_{IN}=V_O(TYP)+1V, I_O=1A, V_C=2.7V, Ta=25°C	1.45	1.5	1.55	V
PQ018EH02ZxH			1.75	1.8	1.85	
PQ025EH02ZxH			2.438	2.5	2.562	

Fig.1 Test Circuit

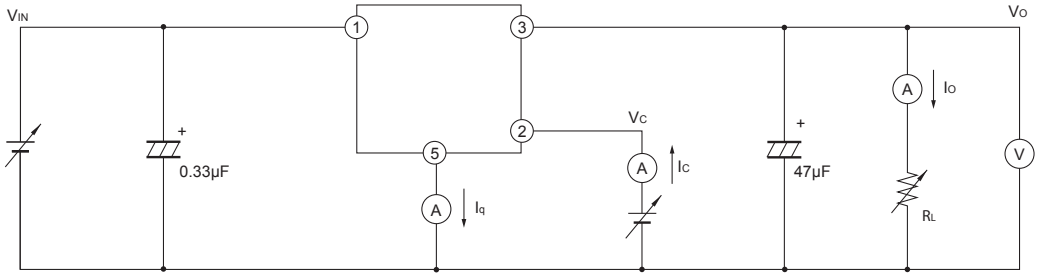
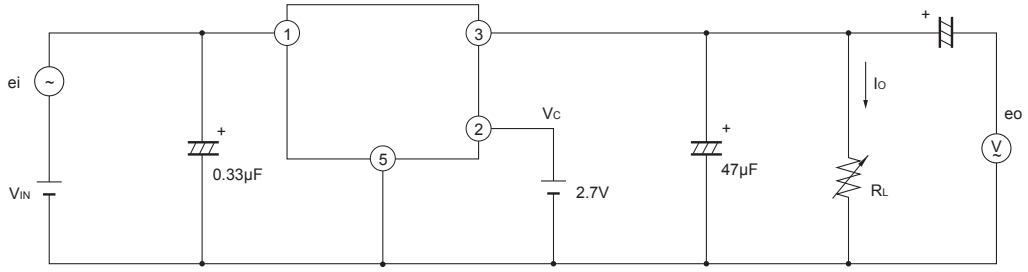
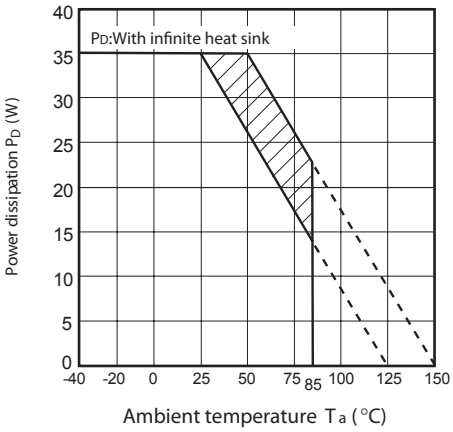


Fig.2 Test circuit of Ripple Rejection



f=120Hz(sine wave)
$e_{i(rms)}$=0.5V
V_{IN}=V_O(TYP)+2V
I_O=0.3A
RR=20log($e_{i(rms)}$/$e_{o(rms)}$)

Fig.3 Power Dissipation vs. Ambient Temperature



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

Fig.4 Overcurrent Protection Characteristics (**PQ015EH02ZxH**)

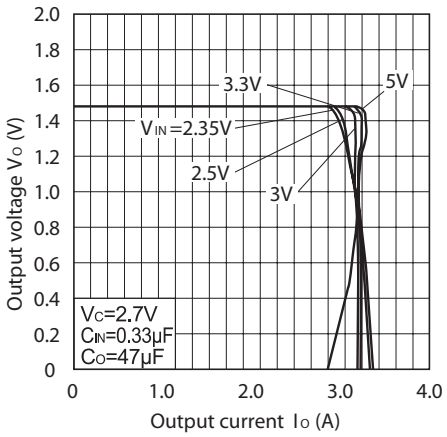


Fig.5 Overcurrent Protection Characteristics (**PQ018EH02ZxH**)

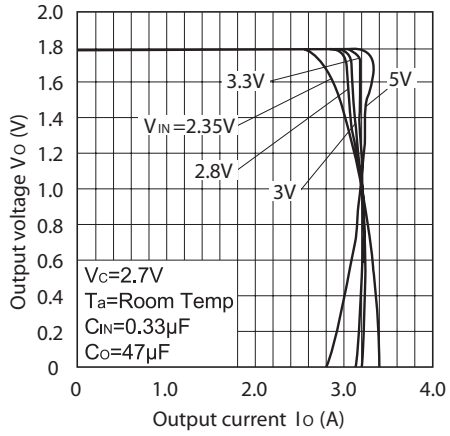


Fig.6 Overcurrent Protection Characteristics (**PQ025EH02ZxH**)

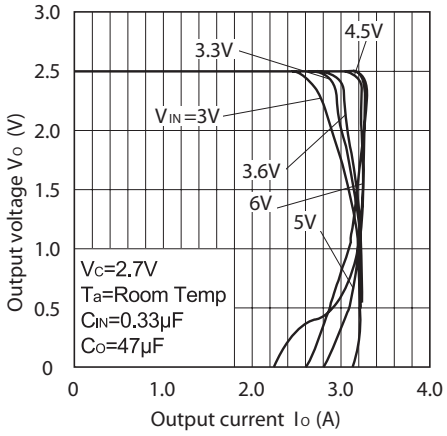


Fig.7 Output Voltage Fluctuation vs. Junction Temperature (**PQ015EH02ZxH**)

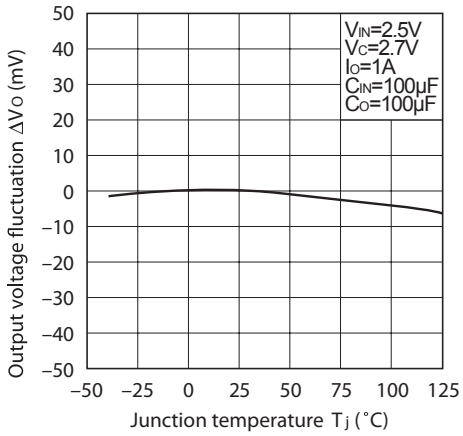


Fig.8 Output Voltage Fluctuation vs. Junction Temperature (**PQ018EH02ZxH**)

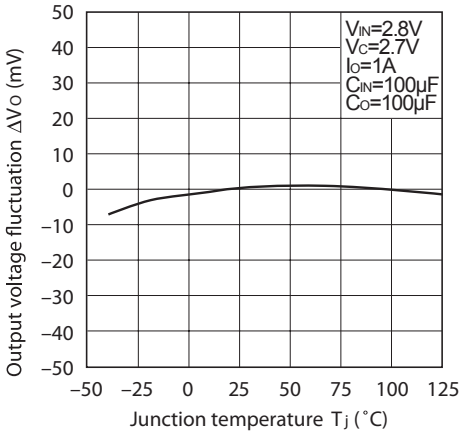


Fig.9 Output Voltage Fluctuation vs. Junction Temperature (**PQ025EH02ZxH**)

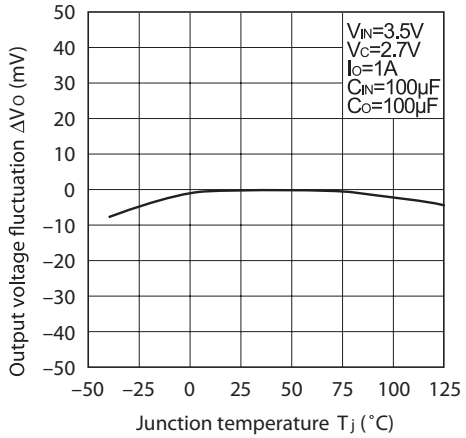


Fig.10 Output Voltage vs. Input Voltage (**PQ015EH02ZxH**)

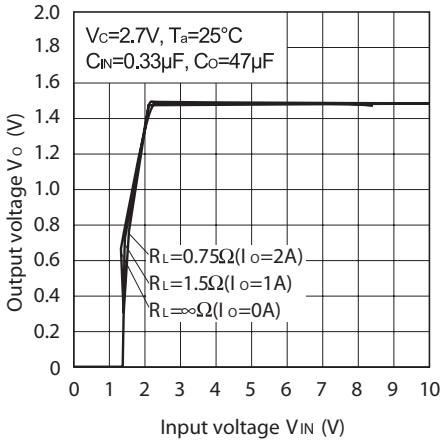


Fig.11 Output Voltage vs. Input Voltage (**PQ018EH02ZxH**)

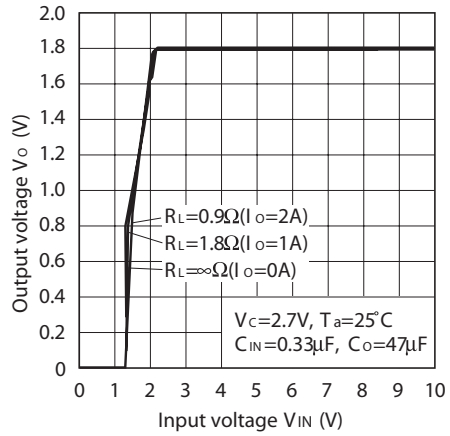


Fig.12 Output Voltage vs. Input Voltage (**PQ025EH02ZxH**)

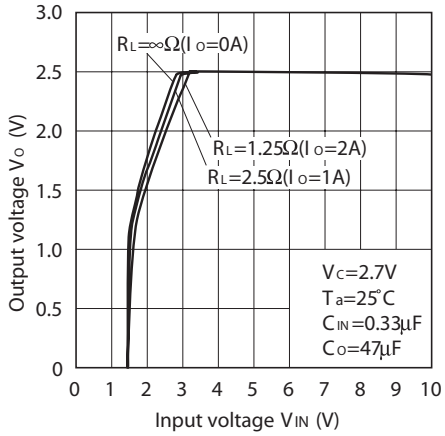


Fig.13 Circuit Operating Current vs. Input Voltage (**PQ015EH02ZxH**)

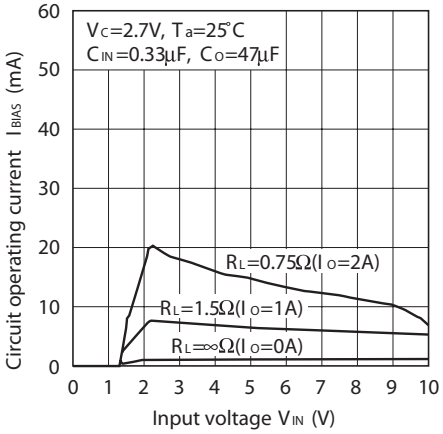


Fig.14 Circuit Operating Current vs. Input Voltage (**PQ018EH02ZxH**)

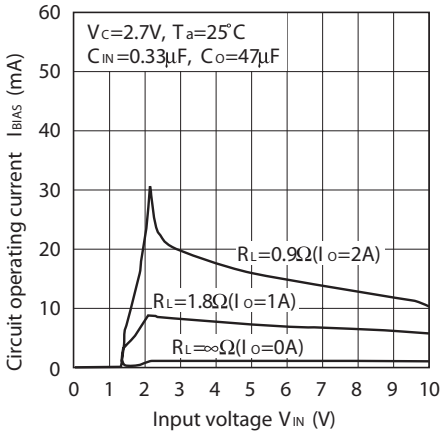


Fig.15 Circuit Operating Current vs. Input Voltage (**PQ025EH02ZxH**)

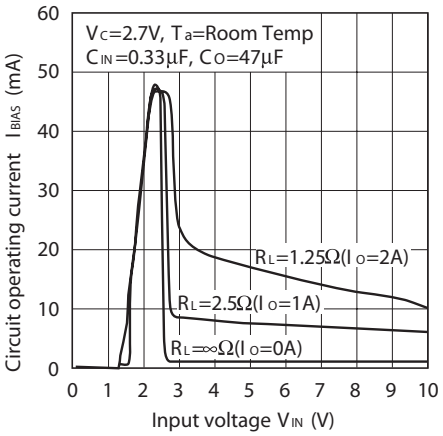


Fig.16 Quiescent Current vs. Junction Temperature

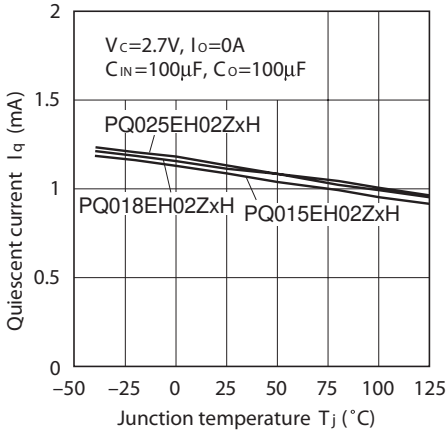


Fig.17 ON-OFF Control Voltage vs. Junction Temperature

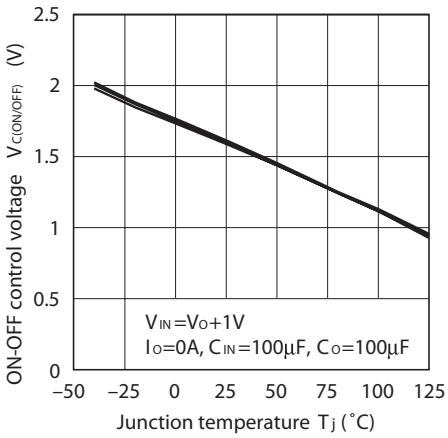


Fig.18 Ripple Rejection vs. Input Ripple Frequency

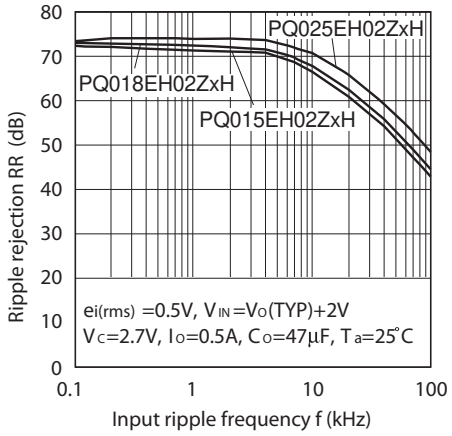


Fig.19 Ripple Rejection vs. Output Current

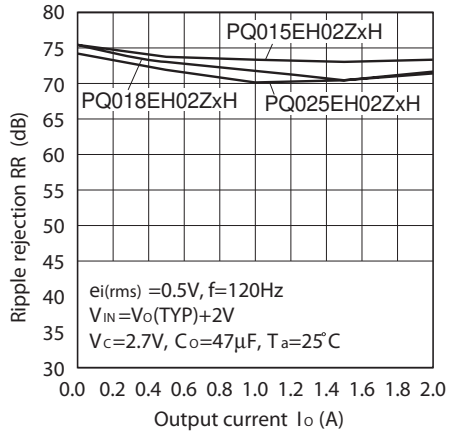
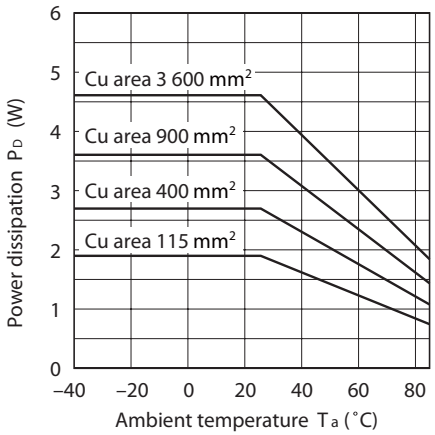
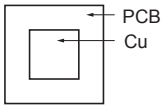


Fig.20 Power Dissipation vs. Ambient Temperature (Typical Value)



Mounting PCB



Material : Glass-cloth epoxy resin
Size : 60×60×1.6mm
Cu thickness : 65μm

Fig.21 Typical Application