

Electrical Characteristics

(Unless otherwise specified, condition shall be $V_{IN}=1.8V, V_B=3.3V, I_o=0.5A, T_a=25^\circ C$)

| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|---|-----------|--|--------------------------------|-----------|------|------|
| Input voltage | V_{IN} | - | 1.7 | - | 5.5 | V |
| Bias supply voltage | V_B | - | 2.35 | - | 7 | V |
| Output voltage | V_o | - | Refer to the following table.1 | | | V |
| Load regulation | Reg_L | $I_o=5mA$ to 1A | - | 0.2 | 0.5 | % |
| Line regulation | Reg_l | $V_{IN}=1.7V$ to 5.5V, $V_B=2.35$ to 7V, $I_o=5mA$ | - | 0.3 | 0.7 | % |
| Temperature coefficient of output voltage | $T_c V_o$ | $T_j=0$ to $+125^\circ C$, $I_o=5mA$ | - | ± 0.5 | - | % |
| Ripple rejection | RR1 | Refer to Fig.2 | - | 60 | - | dB |
| | RR2 | Refer to Fig.3 | - | 53 | - | dB |
| Bias inflow current | I_B | - | - | 1.5 | 2 | mA |

Table.1 Output Voltage

(Unless otherwise specified, condition shall be $V_{IN}=1.8V, V_B=3.3V, I_o=0.5A, T_a=25^\circ C$)

| Model No. | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|---------------------|--------|------------|------|------|------|------|
| PQ008GN01ZPH | V_o | - | 0.77 | 0.8 | 0.83 | V |
| PQ010GN01ZPH | | | 0.97 | 1 | 1.03 | |
| PQ012GN01ZPH | | | 1.17 | 1.2 | 1.23 | |

Fig.1 Test Circuit

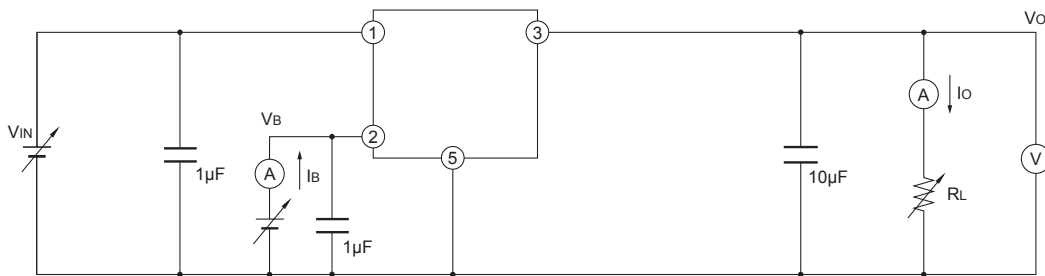
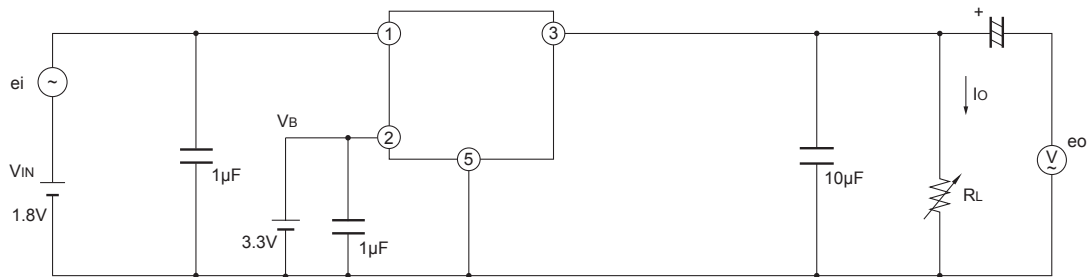


Fig.2 Test Circuit for Ripple Rejection (1)



$f=120Hz$ (sine wave)
 $e_i(rms)=0.1V$
 $V_{IN}=1.8V$
 $V_B=3.3V$
 $I_o=0.3A$
 $RR=20\log(e_i(rms)/e_o(rms))$

Fig.3 Test Circuit for Ripple Rejection (2)

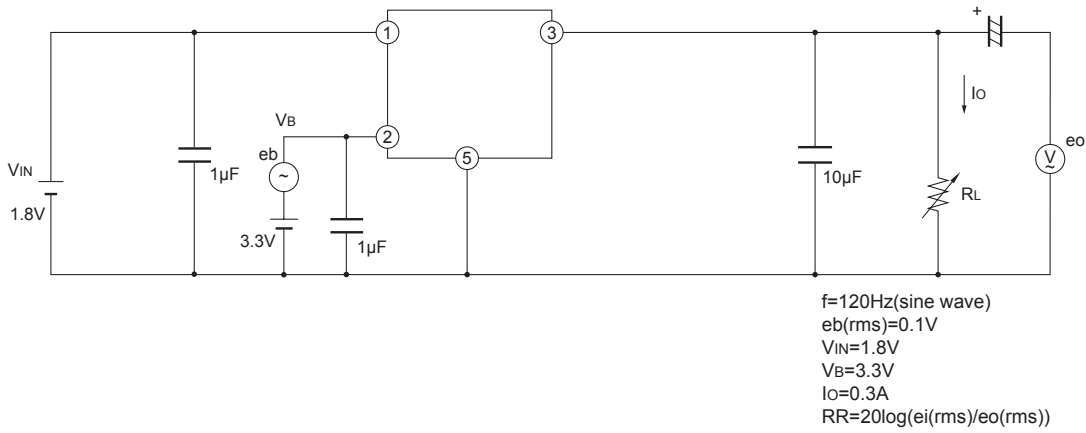
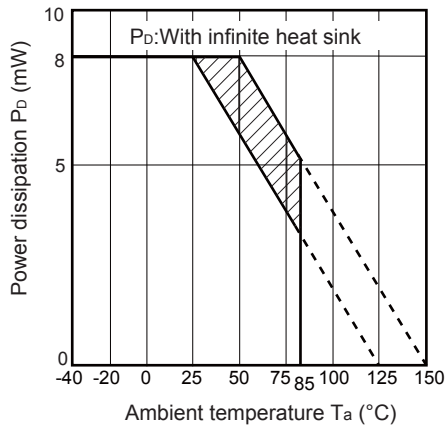


Fig.4 Power Dissipation vs. Ambient Temperature



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

Fig.5 Overcurrent Protection Characteristics (PQ008GN01ZPH)

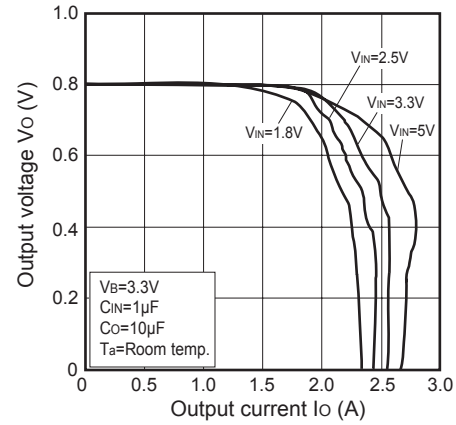


Fig.6 Overcurrent Protection Characteristics (PQ010GN01ZPH)

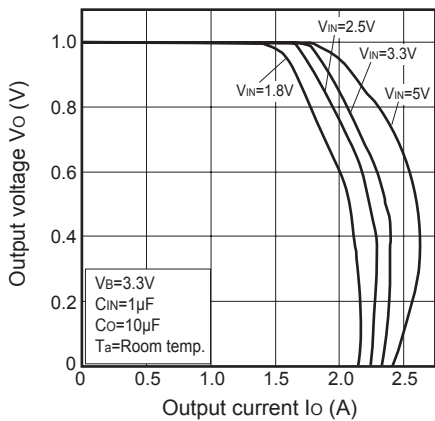


Fig.7 Overcurrent Protection Characteristics (PQ012GN01ZPH)

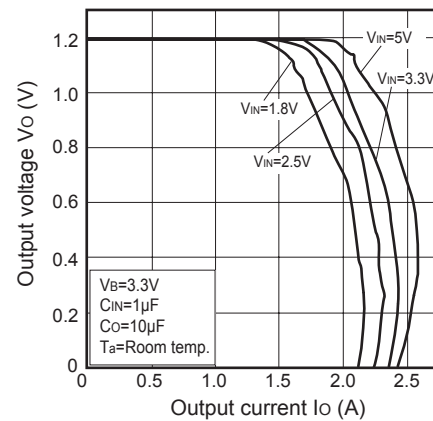


Fig.8 Output Voltage vs. Ambient Temperature (PQ008GN01ZPH)

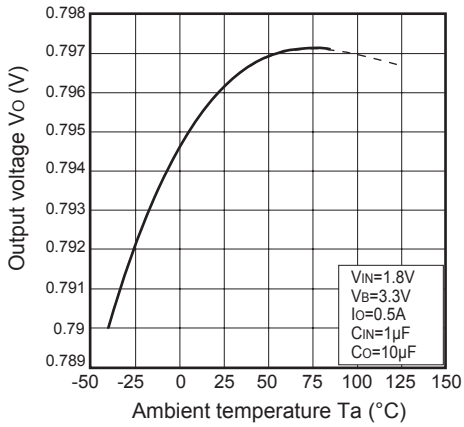


Fig.9 Output Voltage vs. Ambient Temperature (PQ010GN01ZPH)

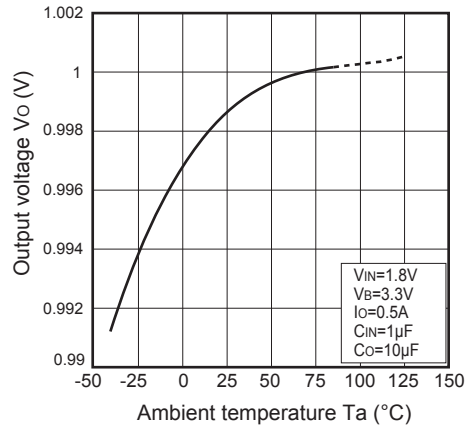


Fig.10 Output Voltage vs. Ambient Temperature (PQ012GN01ZPH)

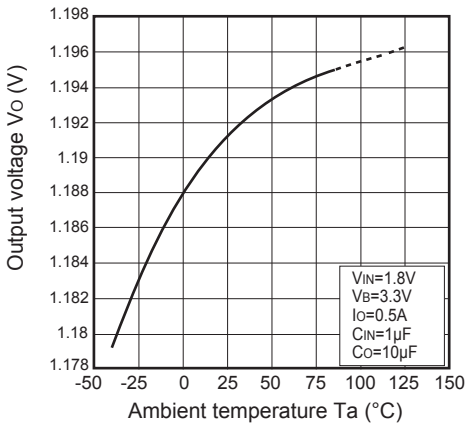


Fig.11 Load Regulation vs. Ambient Temperature

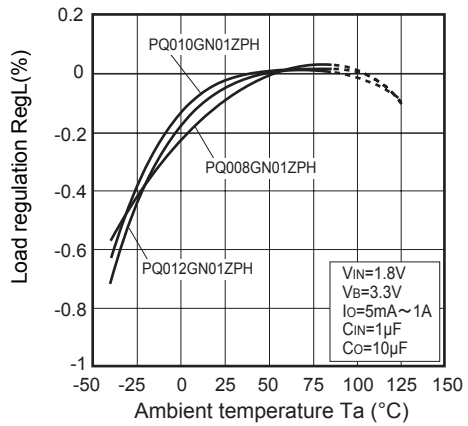


Fig.12 Line Regulation vs. Ambient Temperature

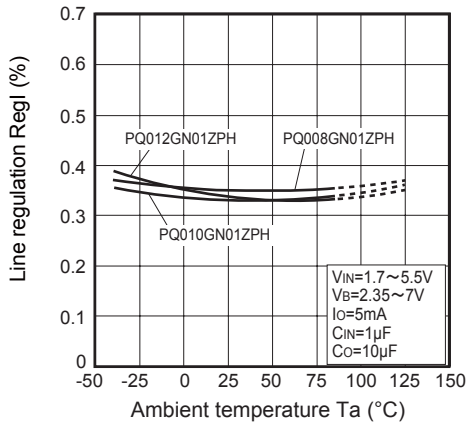


Fig.13 Bias Inflow Current vs. Ambient Temperature

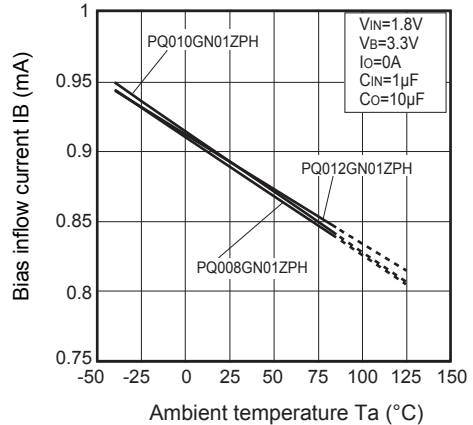


Fig.14 Short circuit Current vs. Ambient Temperature

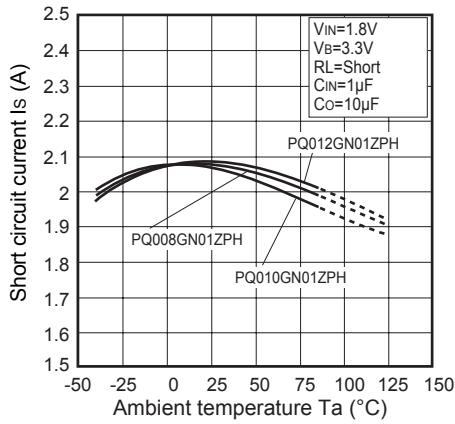


Fig.15 Output Voltage vs. Input Voltage (PQ008GN01ZPH)

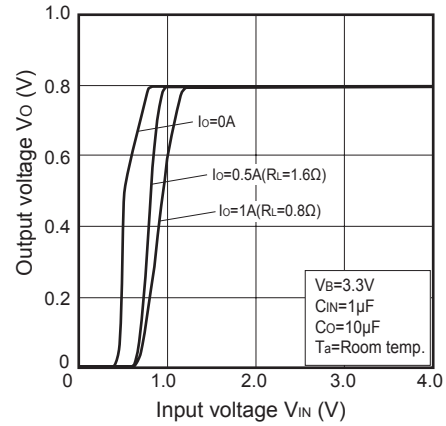


Fig.16 Output Voltage vs. Input Voltage (PQ010GN01ZPH)

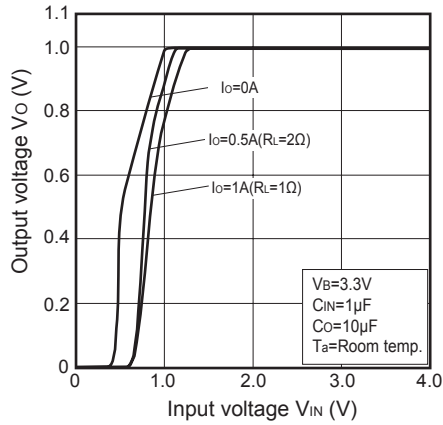


Fig.17 Output Voltage vs. Input Voltage (PQ012GN01ZPH)

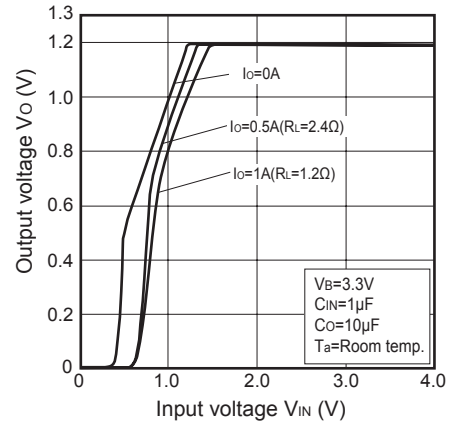


Fig.18 Output Voltage vs. Bias Supply Voltage (PQ008GN01ZPH)

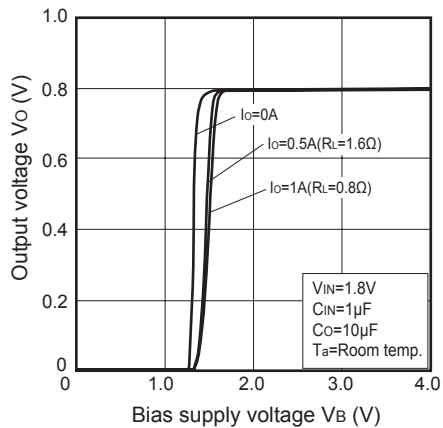


Fig.19 Output Voltage vs. Bias Supply Voltage (PQ010GN01ZPH)

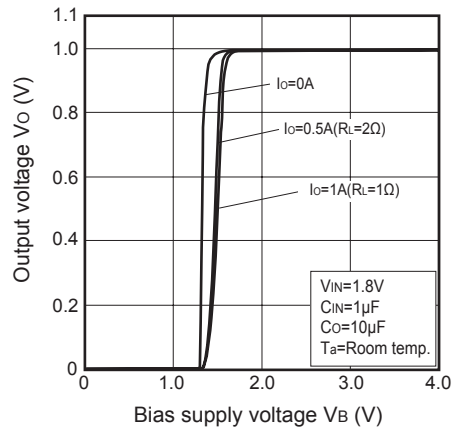


Fig.20 Output Voltage vs. Bias Supply Voltage (PQ012GN01ZPH)

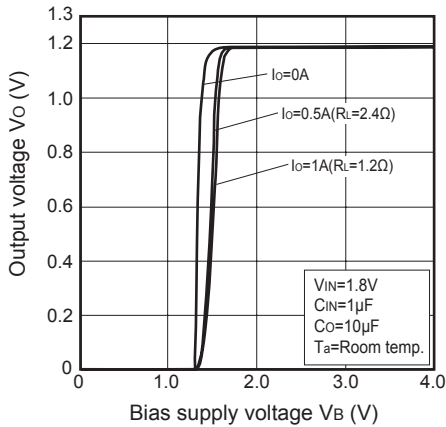


Fig.21 Dropout Voltage vs. Ambient Temperature (PQ012GN01ZPH)

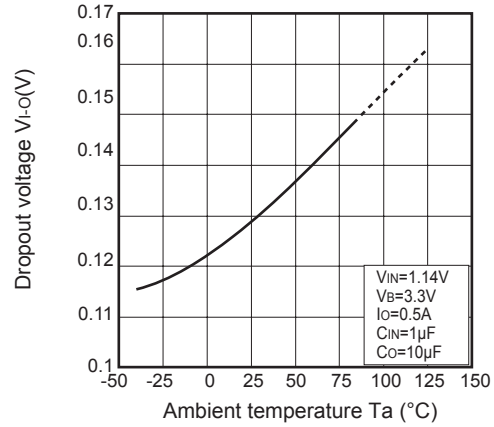


Fig.22 Output Voltage Deviation vs. Output Current

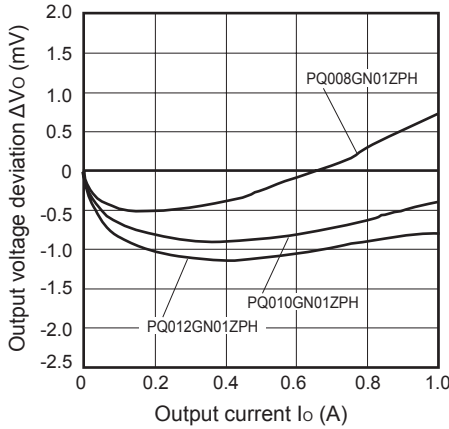


Fig.23 Output Voltage Deviation vs. Input Voltage / Bias Supply Voltage (PQ008GN01ZPH)

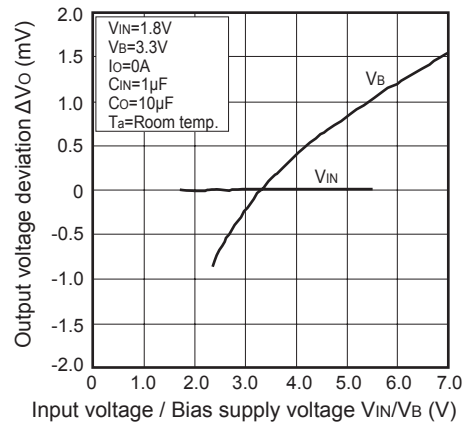


Fig.24 Output Voltage Deviation vs. Input Voltage / Bias Supply Voltage (PQ010GN01ZPH)

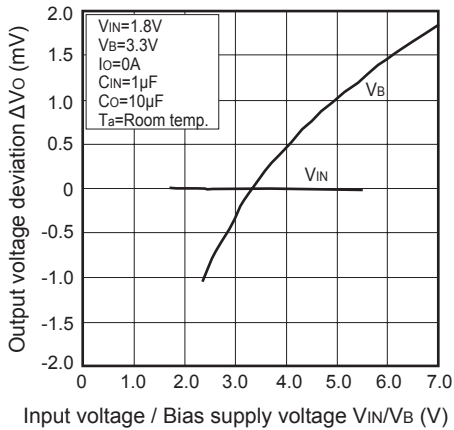


Fig.25 Output Voltage Deviation vs. Input Voltage / Bias Supply Voltage (PQ012GN01ZPH)

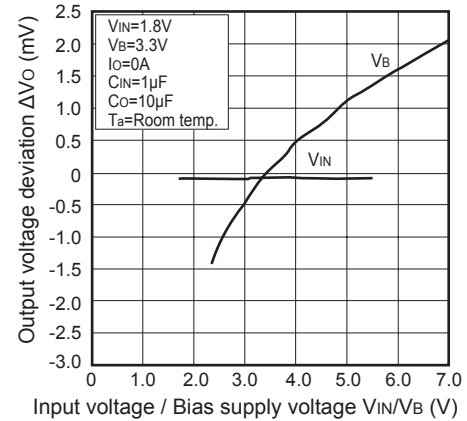


Fig.26 Input Current vs. Input Voltage
(PQ008GN01ZPH)

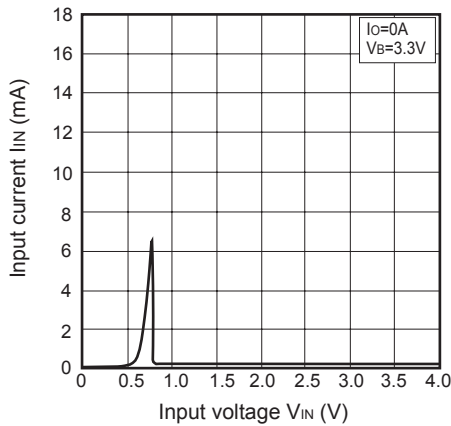


Fig.27 Input Current vs. Input Voltage
(PQ010GN01ZPH)

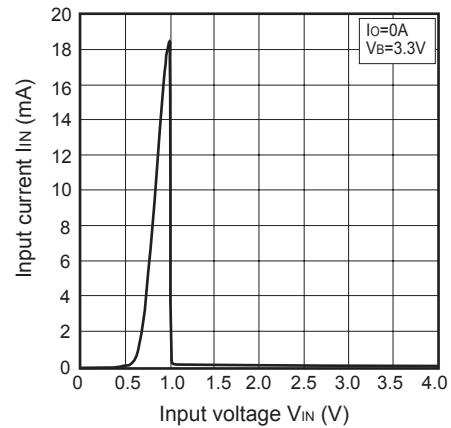


Fig.28 Input Current vs. Input Voltage
(PQ012GN01ZPH)

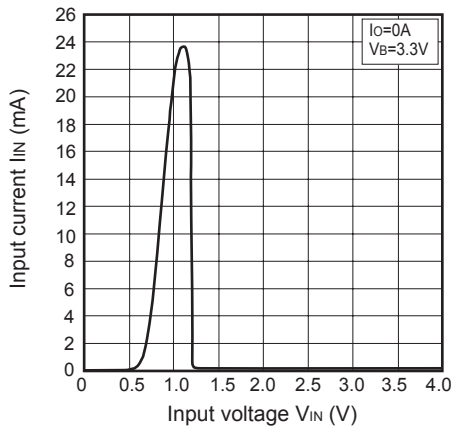


Fig.29 Bias Inflow Current vs. Input Voltage
(PQ008GN01ZPH)

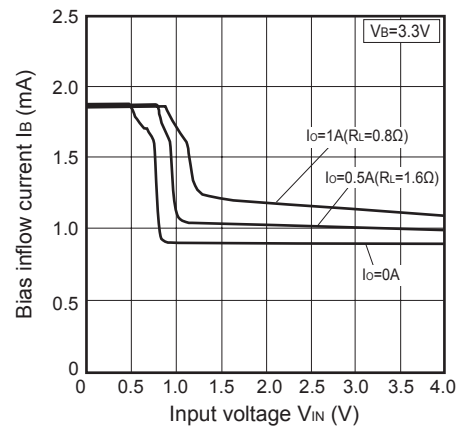


Fig.30 Bias Inflow Current vs. Input Voltage
(PQ010GN01ZPH)

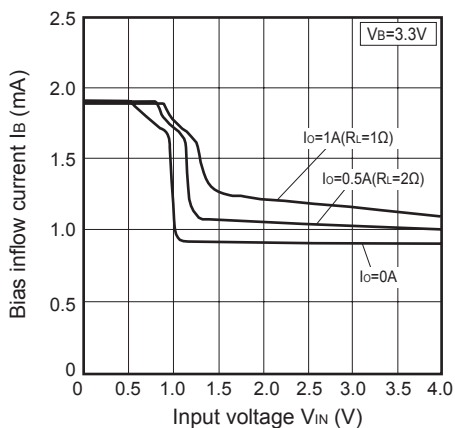


Fig.31 Bias Inflow Current vs. Input Voltage
(PQ012GN01ZPH)

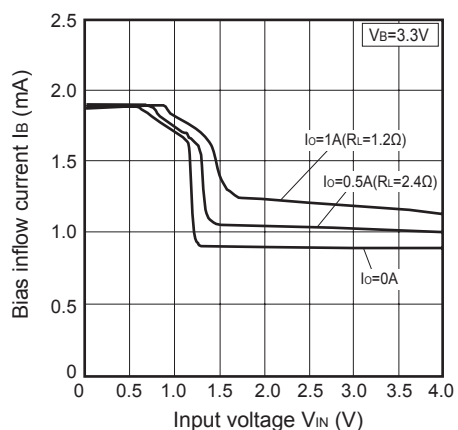


Fig.32 Bias Inflow Current vs. Bias Supply Voltage (PQ008GN01ZPH)

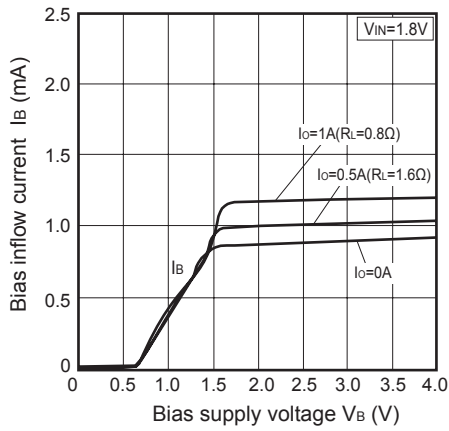


Fig.33 Bias Inflow Current vs. Bias Supply Voltage (PQ010GN01ZPH)

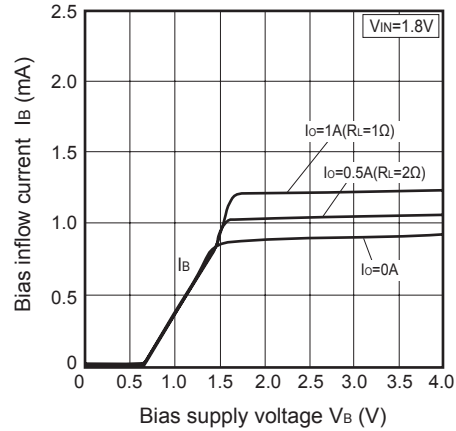


Fig.34 Bias Inflow Current vs. Bias Supply Voltage (PQ012GN01ZPH)

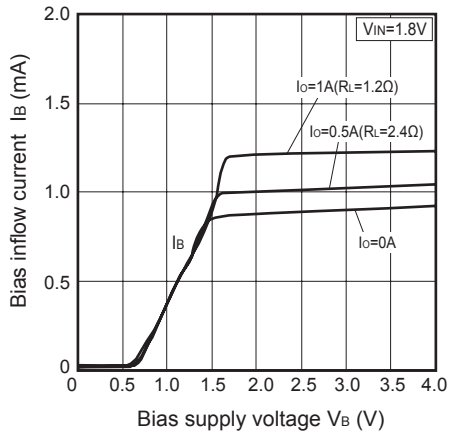


Fig.35 Ripple Rejection vs. Input Ripple Frequency (PQ012GN01ZPH)

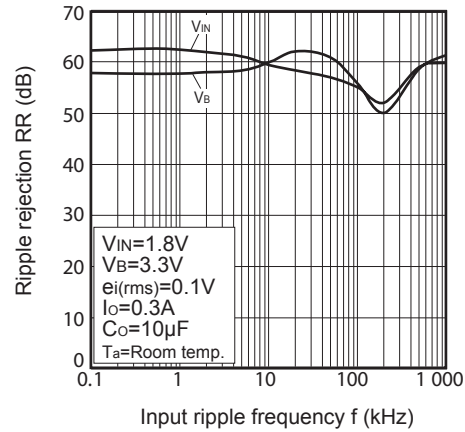


Fig.36 Ripple Rejection vs. Output Current (PQ012GN01ZPH)

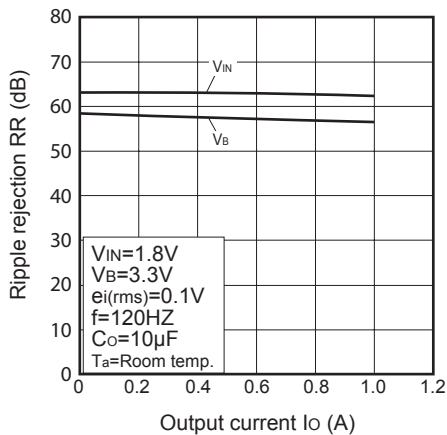
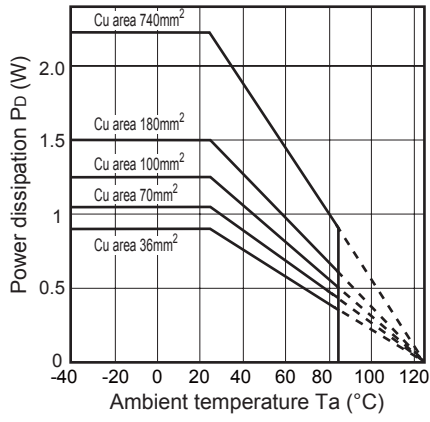
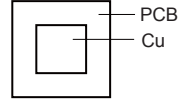


Fig.37 Power Dissipation vs. Ambient Temperature (Typical Value)



Mounting PCB



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