

Electrical Characteristics

(Unless otherwise specified, condition shall be $V_{IN}=V_O(TYP.)+1V$, $I_O=0.5A$, $V_C=2.7V$, $T_a=25^{\circ}C$)

| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|--|---------------|---|--------------------------|------|------|-----------------|
| Output voltage | V_O | - | Refer to the table below | | | V |
| Load regulation | $RegL$ | $I_O=5mA$ to $300mA$ | - | 35 | 160 | mV |
| Line regulation | $RegI$ | $V_{IN}=V_O(TYP.)+1V$ to $V_O(TYP.)+6V$ | - | 3 | 20 | mV |
| Temperature coefficient of output voltage | TcV_O | $I_O=10mA$, $T_j=-25$ to $+75^{\circ}C$ | - | 0.05 | - | mV/ $^{\circ}C$ |
| ^{#4} Ripple rejection | RR | - | - | 70 | - | dB |
| ^{#4} Output noise voltage | $V_{no(rms)}$ | $10Hz < f < 100kHz$, $I_O=30mA$, $C_n=0.1\mu F$ | - | 30 | - | μV |
| Dropout voltage | V_{i-o} | $I_O=300mA$ ^{#5} | - | 0.3 | 0.7 | V |
| ^{#6} ON-state voltage for control | $V_{C(ON)}$ | - | 1.8 | - | - | V |
| ON-state current for control | $I_{C(ON)}$ | $V_C=1.8V$ | - | 5 | 30 | μA |
| OFF-state voltage for control | $V_{C(OFF)}$ | - | - | - | 0.4 | V |
| Quiescent current | I_q | $I_O=0mA$ | - | 150 | 500 | μA |
| Output OFF-state dissipation current | I_{qs} | $V_C=0.2V$ | - | - | 1 | μA |

^{#4} Typical value at output voltage is 3.0V type.

^{#5} Input voltage when output voltage lowers 100mV from the voltage at $V_{IN}=V_O(TYP.)+1.0V$.

^{#6} In case of opening control terminal ③, output voltage turns off.

Output Voltage Line-up

($V_{IN}=V_O(TYP.)+1.0V$, $I_O=30mA$, $V_C=1.8V$, $T_a=25^{\circ}C$)

| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|----------------|-------------|------------|-------|------|-------|------|
| Output voltage | PQ1L253M2SP | - | 2.440 | 2.5 | 2.560 | V |
| | PQ1L303M2SP | | 2.940 | 3.0 | 3.060 | |
| | PQ1L333M2SP | | 3.234 | 3.3 | 3.366 | |
| | PQ1L503M2SP | | 4.900 | 5.0 | 5.100 | |

Fig.1 Test Circuit

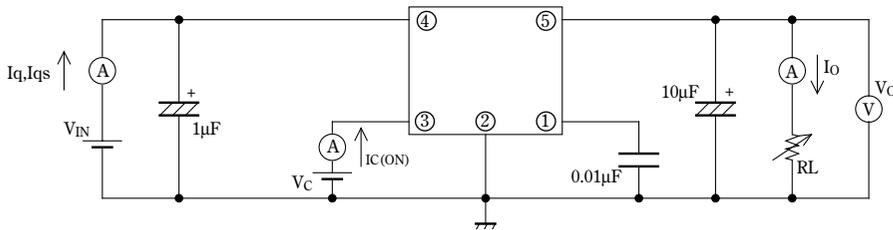


Fig.2 Test Circuit for Ripple Rejection

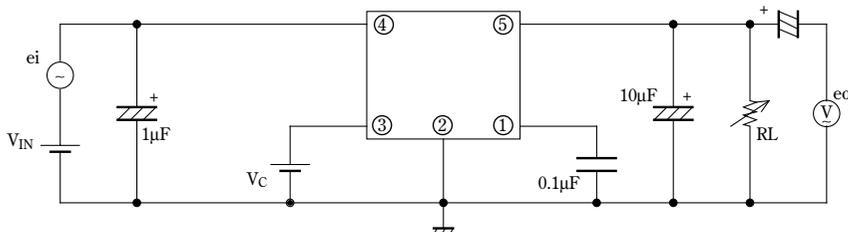
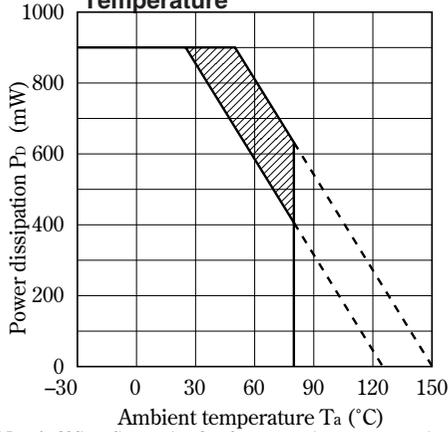


Fig.3 Power Dissipation vs. Ambient Temperature



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

Fig.4 Overcurrent Protection Characteristics (Typical Value)

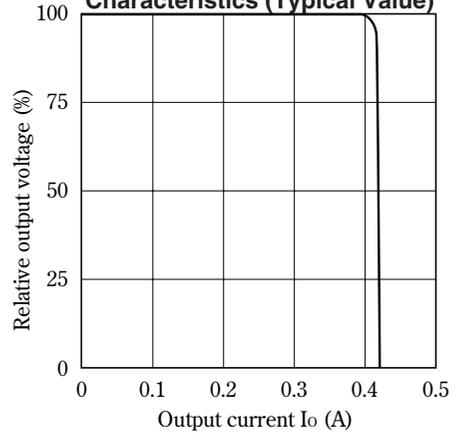


Fig.5 Output Voltage Fluctuation vs. Junction Temperature (PQ1L333M2SP) (Typical Value)

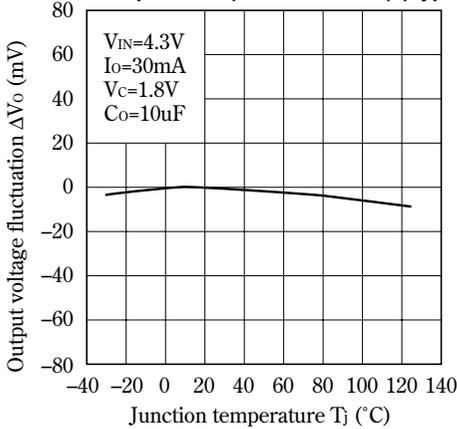


Fig.6 Output Voltage vs. Input Voltage (PQ1L333MS2SP) (Typical Value)

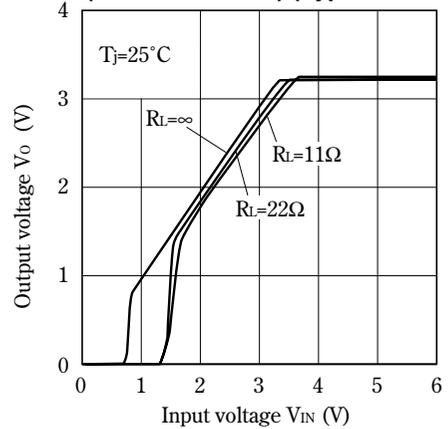


Fig.7 Circuit Operating Current vs. Input Voltage (PQ1L333M2SP) (Typical Value)

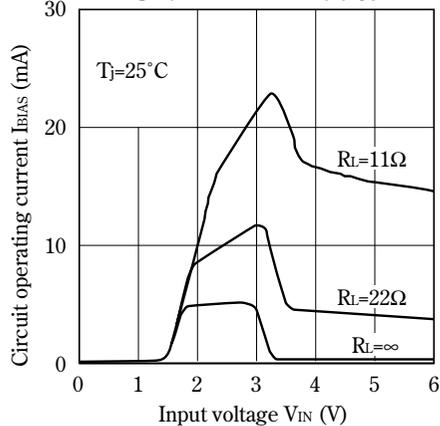


Fig.8 Dropout Voltage vs. Junction Temperature (Typical Value)

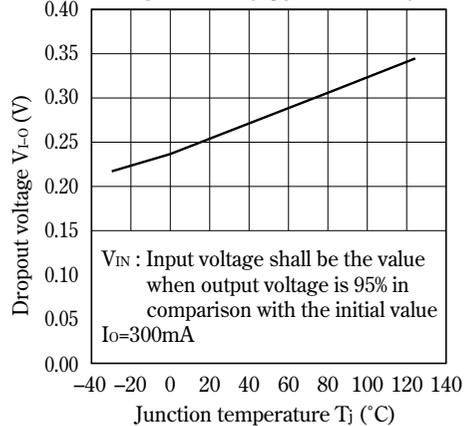


Fig.9 Quiescent Current vs. Junction Temperature

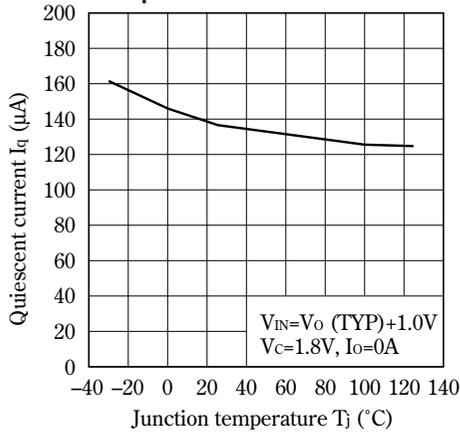


Fig.10 Ripple Rejection vs. Input Ripple Frequency (PQ1L333M2SP) (Typical Value)

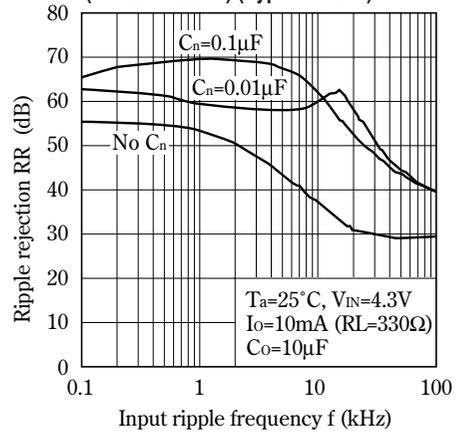


Fig.11 Dropout Voltage vs. Output Current (Typical Value)

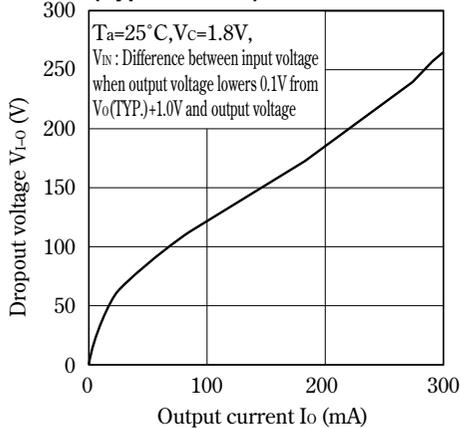
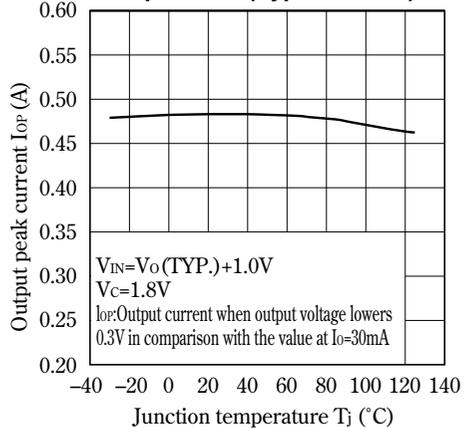
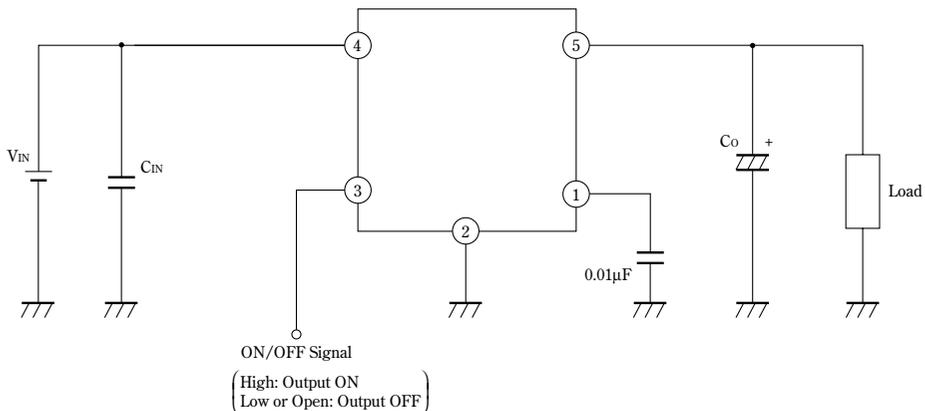


Fig.12 Output Peak Current vs. Junction Temperature (Typical Value)



■ ON/OFF Operation



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