PQ15RF15/PQ15RF16

1A Output, Low Power-Loss Voltage Regulators Considering Power Line Voltage Drop

■ Features

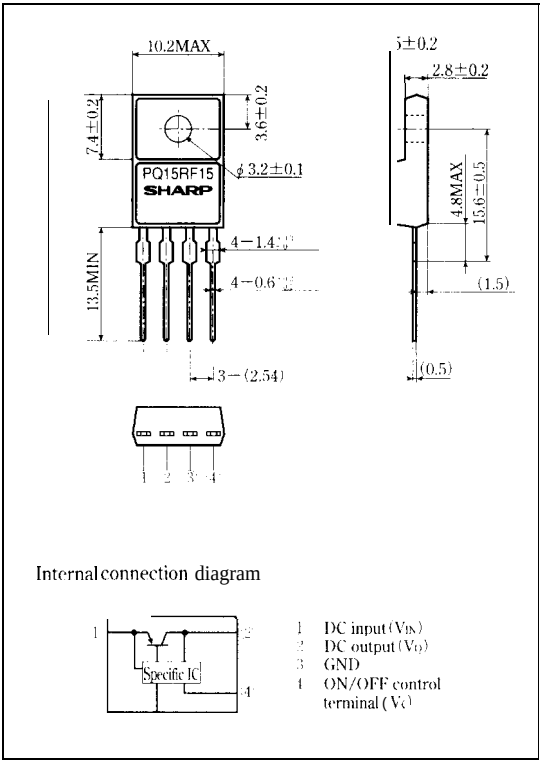
- Low power-loss (Dropout voltage : MAX. 0.5V)
- Compact resin full-mold package
- Conforming to the unified standard for BS converter
- output voltage value (15.7V) with an allowance for voltage loss caused by reverse flow preventing diode
- Built-in ON/OFF control terminal corresponding tn BS antenna power supply selecting switch
- High-precision output type (PQ15RF16) **(Output** voltage precision : ± 2,5(%,)

■ Applications

- TVs and VCRs with built-in BS tuners
- BS tuners

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(T_a=25℃)

Parameter	Symbol	Rating	Unit
*1 Input voltage	V_{IN}	35	v
"ON/OFF" control terminal voltage	V_C	35	v
output current	I_O	1	A
Power dissipation (No heat sink)	P_{D1}	1.5	W
Power dissipation (With infinite heat sink)	P_{D2}	15	W
*2 Junction temperature	T_j	150	℃
operating temperature	T_{opr}	-20 to +80	℃
Storage temperature	T_{stg}	-40 to +150	℃
Soldering temperature	T_{sol}	260 (For 10s)	℃

*1 All are open except GND and applicable terminals.
*2 Overheat protection may opetate at 125≦Tj≦150℃

Please refer to the chapter' Handling Precautions

■ Electrical Characteristics

(Unless otherwise specified, condition shall be V_{IN}=18V, I_O=0.5A, T_a=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output voltage	PQ15RF15	V()		14.92	15.7	16.48	V
	PQ15RF16			15.31	15.7	16.09	
Load regulation		RegL	I_O=5mA to 1.0A		0.2	2.()	%
Line regulation		RegI	V_N=17 to 27V		0.2	2.5	%
Temperature coefficient of output voltage		TcVo	Tj=0 to 125°C		±0.01		%/°C
Ripple rejection		RR	Refer to Fig. 2	45	65		dB
Dropout voltage		V,-()	*3 I_O=0.5A		0.2	0,5	v
ON-state voltage for control		V_C(ox)	*4	2.0			v
ON-state current for control		I_C(ON)	V_C=2.7V			20	μA
OFF-state voltage for control		V_C(OFF)				0.8	v
OFF-state current for control		I_C(OFF)	V_C=0.4V			-0.4	mA
Output OFF-state consumption current		I_{qs}	I_O=0A		6	10	MA

*3 Input voltage shall be the value when output voltage is 95% in comparison with the, initial value
*4 In case of opening control terminal (), output voltage turns on.

Fig. 1 Test Circuit

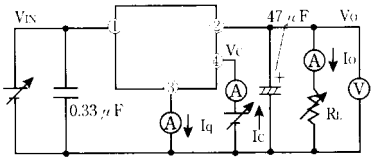
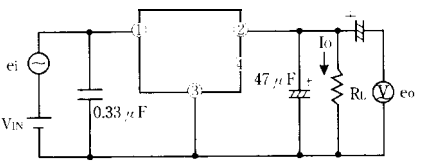
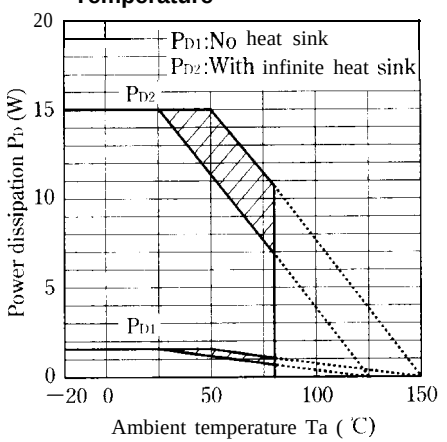


Fig. 2 Test Circuit of Ripple Rejection



f=120Hz (sine wave)
ei=0.5Vrms
RR=20 log (ei/eo)

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)

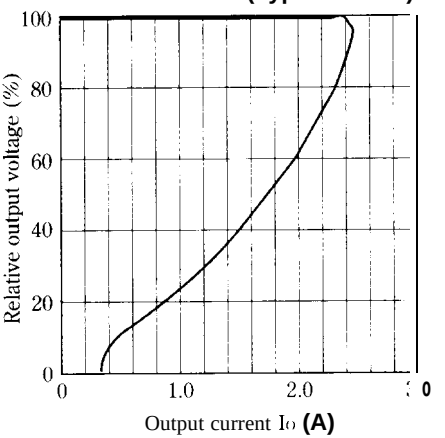


Fig. 5 Output Voltage Deviation vs. Junction Temperature

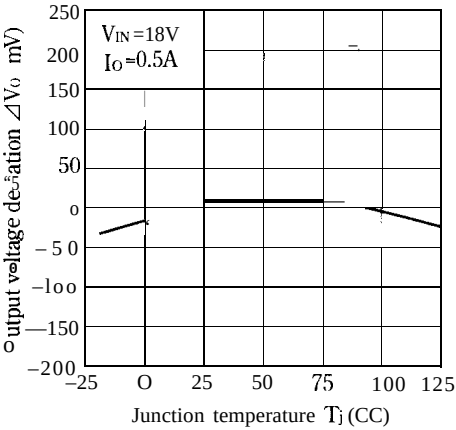


Fig. 6 Output Voltage vs. Input Voltage

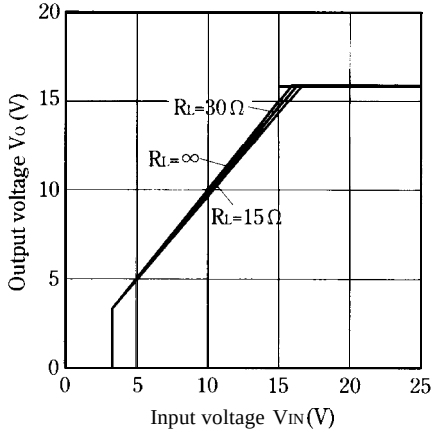


Fig. 7 Circuit Operating Current vs. Input Voltage

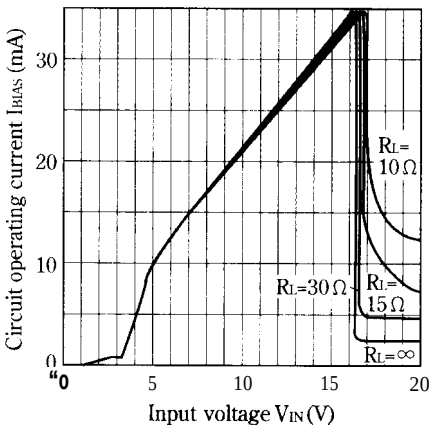


Fig. 8 Dropout Voltage vs. Junction Temperature

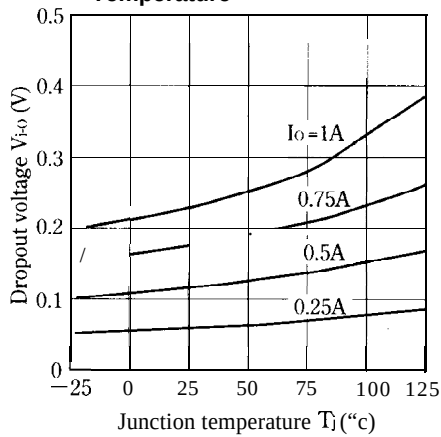


Fig. 9 Quiescent Current vs. Junction Temperature

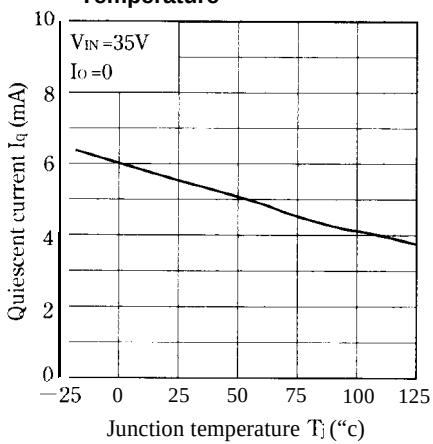


Fig.1 O Ripple Rejection vs. Input Ripple Frequency

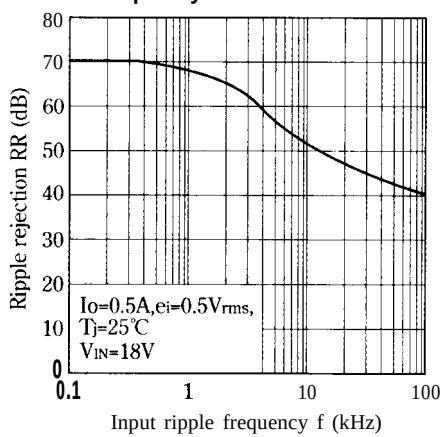


Fig.11 Ripple Rejection vs. Output Current

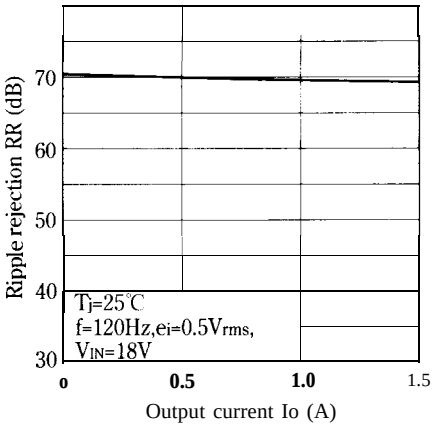
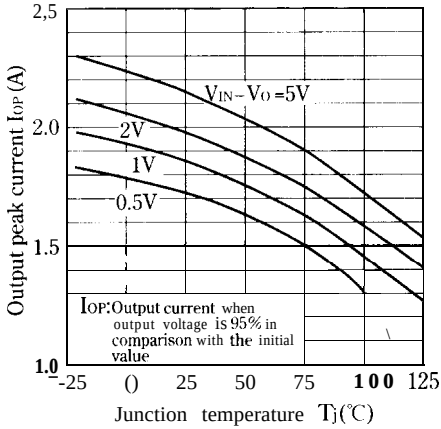


Fig.12 Output Peak Current vs. Junction Temperature

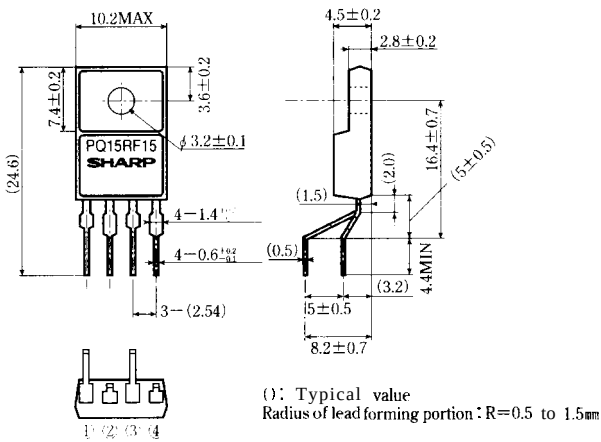


■ Model Line-ups for Lead Forming Type

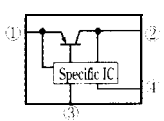
Output voltage	15.7V output
Output voltage precision: ±5%	PQ15RF1F
Output voltage precision: ±2.5%	PQ15RF1G

■ Outline Dimensions (PQ15RF1 F/PQ15RF1 G)

(Unit : mm)



Internal connection diagram



1 DC input (Vi)
2 DC output (Vo)
3 GND
4 ON/OFF control terminal (Vc)

Note) The value of absolute maximum ratings and electrical characteristics is same as ones of **PQI 5RF1 5/1 6** series.