PQ3RF43

3.3V/4.6V Output Low Power-Loss Voltage Regulator

■ Features

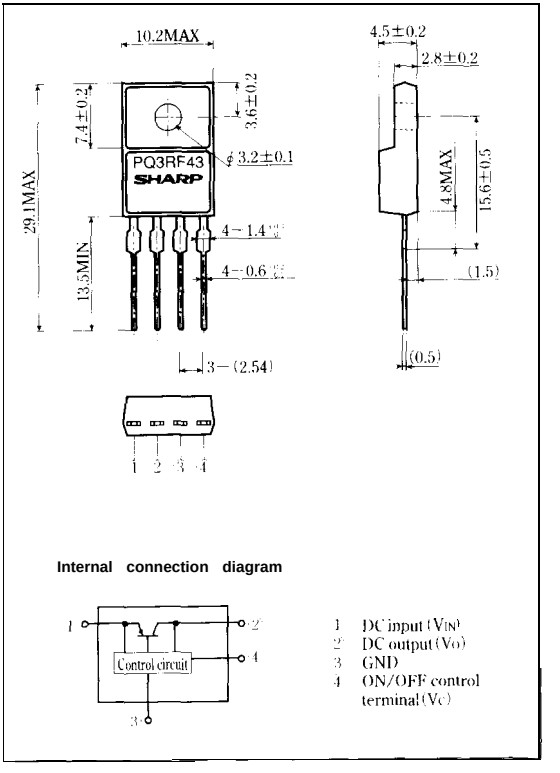
- Low power-loss
  (Dropout voltage : MAX.0.5V at 10 = 4.0A)
  (Dropout voltage: MAX.1.0V at Io = 4.6A)
- Compact resin full-mold package (TO-220 package)
- 3.3V/4.6A output type
- High-precision output voltage type
  Output voltage precision : ±2.5%
- Built-in ON/OFF control function
- Built-in overcurrent protection, overheat protection function

■ Applications

- Power supplies for various electronic equipment such as personal computers

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(T_a=25°C)

Parameter	Symbol	Rating	Unit
*1 Input voltage	V_{IN}	10	V
*1 ON/OFF control terminal voltage	V_C	10	V
Output current	I_O	4.6	A
Power dissipation (No heat sink)	P_{D1}	1.8	W
Power dissipation (With infinite heat sink)	P_{D2}	18	
*2 Junction temperature	T_j	150	°C
Operating temperature	T_{opr}	-20 to +80	°C
Storage temperature	T_{stg}	-40 to + 150	°C
8 Soldering temperature	T_{sol}	260(For 10s.)	°C

*1 All are open except GND and applicable terminals
*2 Overheat protection may operate at 125 ≦ T_j ≦ 150°C

Please refer to the chapter "Handling Precautions".

■ Electrical Characteristics

(Unless otherwise specified, conditions shall be V_{IN}=5V, I_O=2.0A, T_a=25°C)

Parameter	Symbol	Conditions	NIN.	TYP.	MAX.	Unit
output voltage	V(1		3.218	3.3	3.382	V
Load regulation	RegL	Io=5mA to 4.6A		0.5	2.0	%
Line regulation	RegI	VIN=4 to 10V		0.5	2.5	%
"temperature coefficient of output voltage	TcV()	TJ=0to 125'('		±0.02		%/℃
Ripple rejection	RR		45	55		dB
Dropout voltage (1)	VI-O(1)	*3, Io=4.0A			0.5	V
Dropout voltage (2)	VI-O(2)	*3, Io=4.6A			1.0	v
*4 ON-state voltage for control	Vc (ON)		2.()			V
ON-state current for control	1(ON)	Vc=2.7V			20	μA
OFF-state voltage for control	Vc OFF)				0.8	V
OFF-state current for control	Ic IOFF)	Vc =0.4V			().4	mA
Quiescent current	Iq	Io=0A			17	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 4 output voltage turns on.

Fig.1 Test Circuit

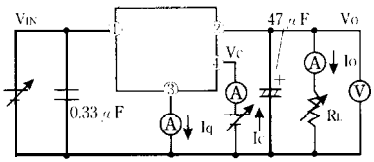


Fig.2 Test Circuit for Ripple Rejection

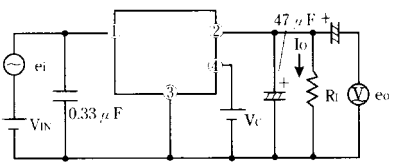
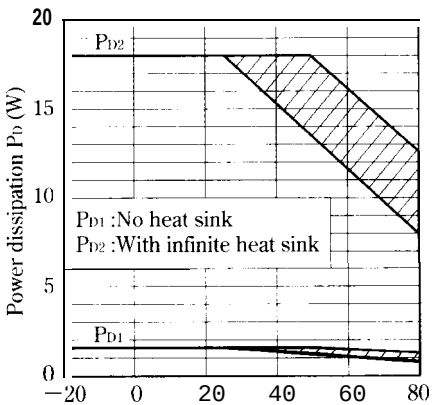


Fig.3 Power Dissipation vs. Ambient Temperature



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

Fig.4 Overcurrent Protection Characteristics (Typical Value)

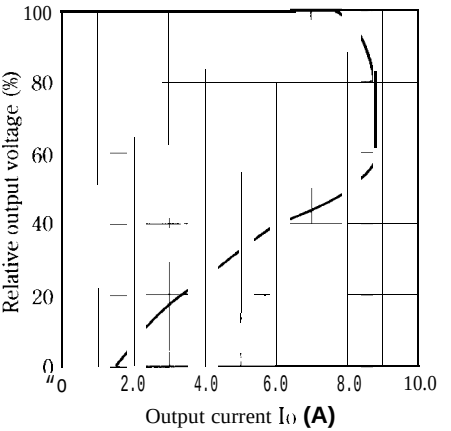


Fig.5 Output Voltage Deviation vs. Junction Temperature

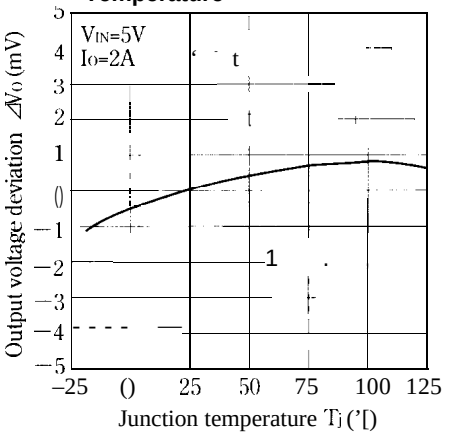


Fig. 6 Output Voltage vs. Input Voltage

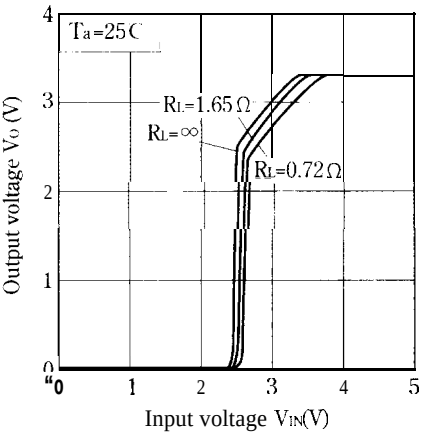


Fig. 7 Circuit Operating Current vs. Input Voltage

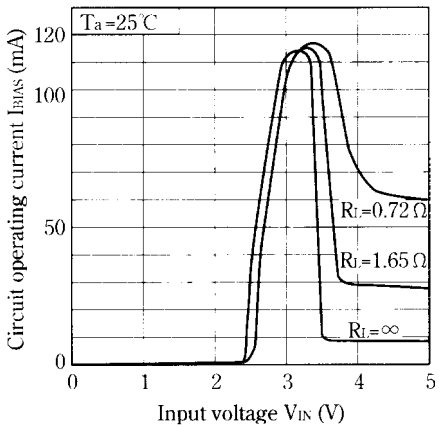


Fig.8 Dropout Voltage vs. Junction Temperature

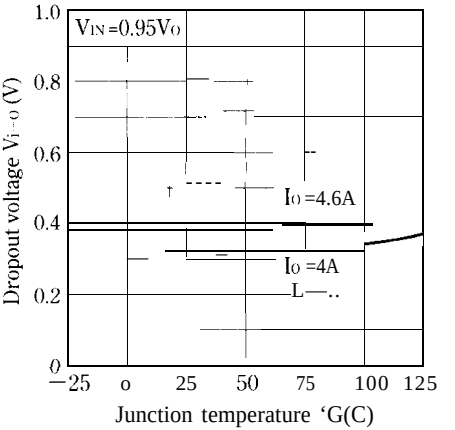


Fig.9 Quiescent Current vs. Junction Temperature

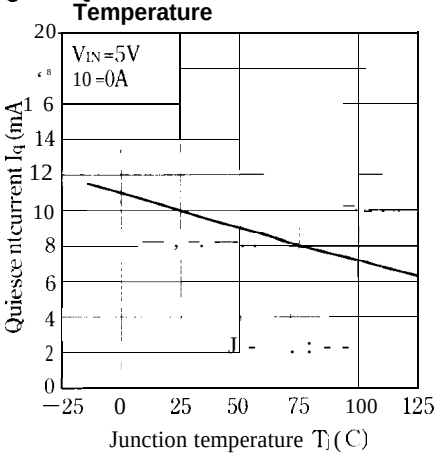
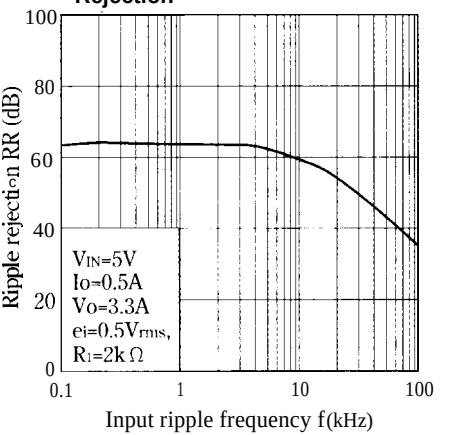


Fig.1 O Input Ripple Frequency vs. Ripple Rejection



Typical Application