PQ2TZ55/PQ2TZ15

2.5V Output, Surface Mount Type Low Power-Loss Voltage Regulators

■ Features

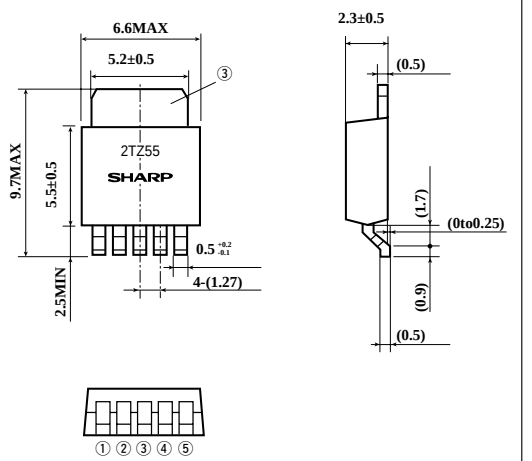
- Low power-loss (Dropout voltage : MAX 0.5V)
- Surface mount type package (Equivalent to EIAJ SC-63)
- Output voltage : 2.5V
- Minimum input voltage : 3.0V
- Output current : (0.5A : PQ2TZ55)
  (1.0A : PQ2TZ15)
- Output voltage precision : ±2.5%
- Built-in ON/OFF control function
- Low dissipation current at OFF-state (Iqs : MAX.5μA)
- Tape packaged type is also available.
  (ϕ330mm reel : 3 000pcs., PQ2TZ55U/PQ2TZ15U)

■ Applications

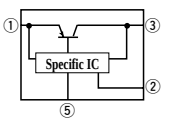
- Personal computers
- Personal information tools(PDA)
- Various OA equipment

■ Outline Dimensions

(Unit : mm)



Internal connection diagram



① DC input (V_{IN})
② ON/OFF control terminal (V_C)
③ DC output (V_O)
④ NC
⑤ GND

Heat sink is common to ③ (V_O).

■ 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	PQ2TZ55	I_O	0.5	A
	PQ2TZ15		1	
*2 Power dissipation		P_D	8	W
*3 Junction temperature		T_j	150	˚C
Operating temperature		T_{opr}	-20 to + 80	˚C
Storage temperature		T_{stg}	-40 to +150	˚C
Soldering temperature		T_{sol}	260(For 10s)	˚C

*1 All are open except GND and applicable terminals.

*2 P_D:With infinite heat sink.

*3 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 I_O=0.3A [PQ2TZ55]/I_O=0.5A [PQ2TZ15]V_{IN}=3.3V, V_C=2.7V, T_a=25˚C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input voltage		V_{IN}	-	3.0	-	10	V
Output voltage		V_O	-	2.438	2.5	2.562	V
Load regulation	PQ2TZ55	R_{egL}	I_O=5mA to 0.5A	-	0.2	2.0	%
	PQ2TZ15		I_O=5mA to 1.0A				
Line regulation		R_{egI}	V_{IN}=3.0 to 10V, I_O=5mA	-	0.1	2.5	%
Temperature coefficient of output voltage		T_CV_O	I_O=5mA, T_j=0 to 125˚C	-	±0.01	-	%/˚C
Ripple rejection		RR	-	45	60	-	dB
Dropout voltage	PQ2TZ55	V_{i-o}	V_{IN}=3V, I_O=0.5A	-	-	0.5	V
	PQ2TZ15		V_{IN}=3V, I_O=1.0A				
ON-state voltage for control		$V_{C\ (ON)}$	*4	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	-	-	10	mA
Output OFF-state consumption current		I_{qs}	I_O=0A, V_C=0.4V	-	-	5	μA

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

Fig.1 Test Circuit

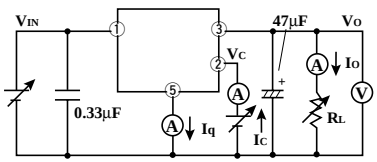
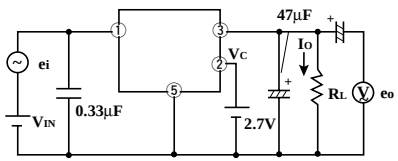
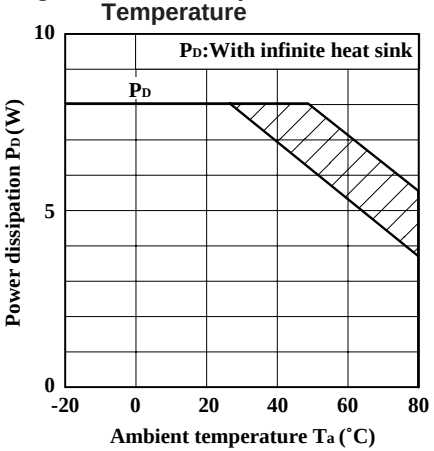


Fig.2 Test Circuit for Ripple Rejection



f=120Hz (sine wave)
ei=0.5Vrms
V_{IN}=3.3V
I_O=0.5A (PQ2TZ15)
I_O=0.3A (PQ2TZ55)
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 (PQ2TZ55)

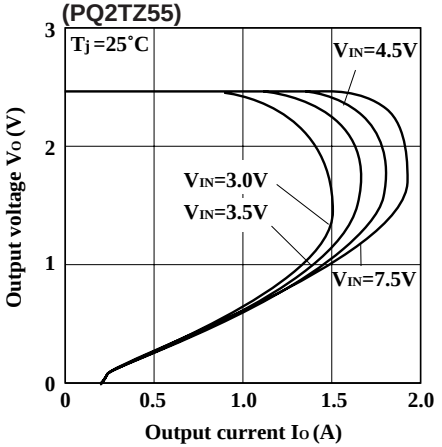


Fig.5 Overcurrent Protection Characteristics (PQ2TZ15)

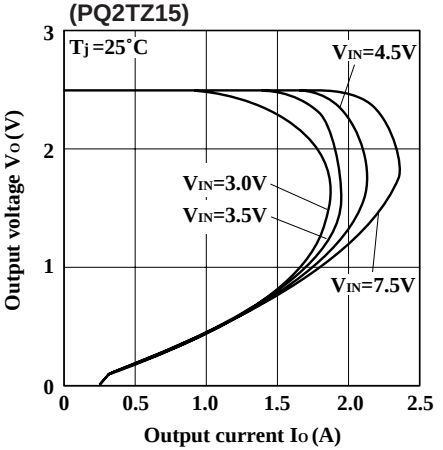


Fig.6 Output Voltage Deviation vs. Junction Temperature (PQ2TZ55)

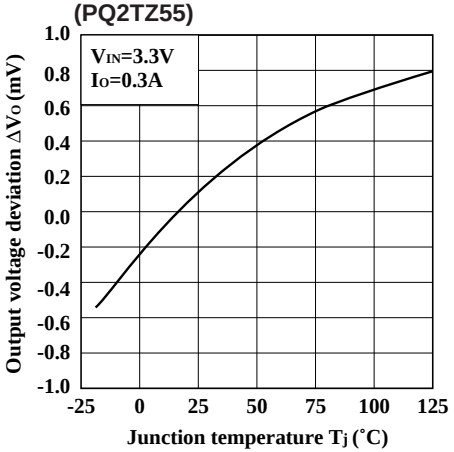


Fig.7 Output Voltage Deviation vs. Junction Temperature (PQ2TZ15)

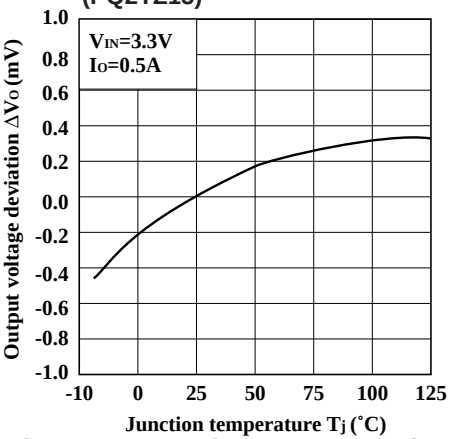


Fig.8 Output Voltage vs. Input Voltage (PQ2TZ55)

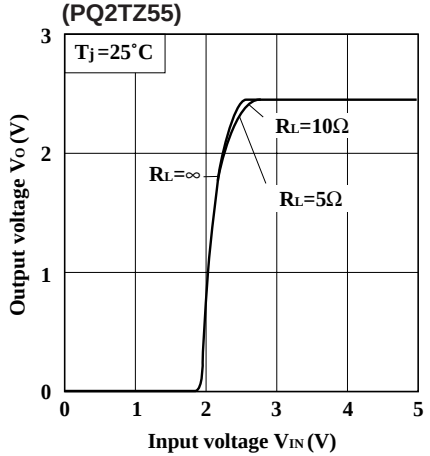


Fig.9 Output Voltage vs. Input Voltage (PQ2TZ15)

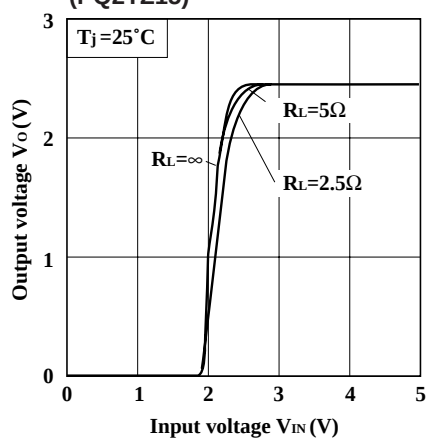


Fig.10 Circuit Operating Current vs. Input Voltage (PQ2TZ55)

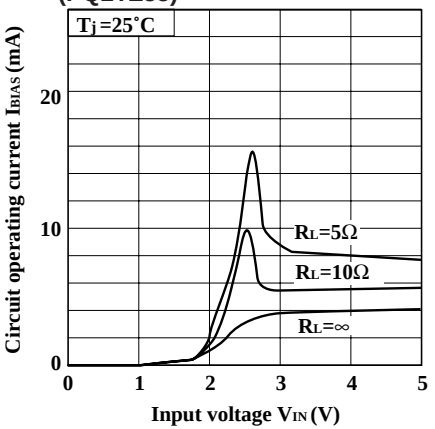


Fig.11 Circuit Operating Current vs. Input Voltage (PQ2TZ15)

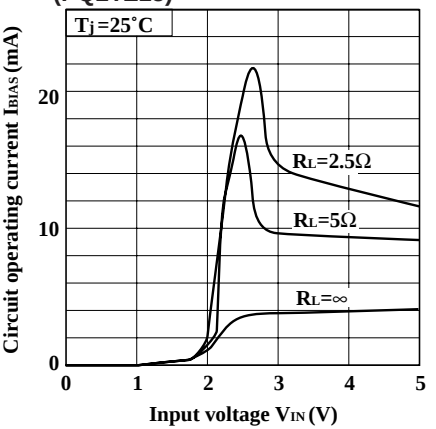


Fig.12 Quiescent Current vs. Junction Temperature (PQ2TZ55)

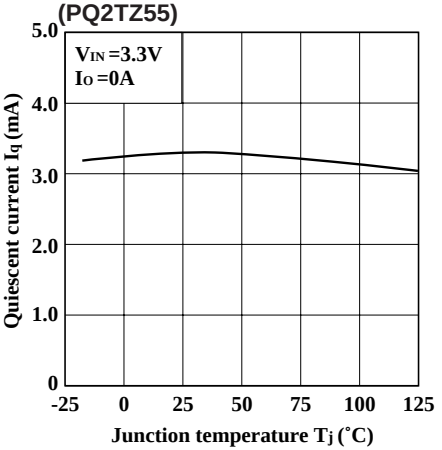
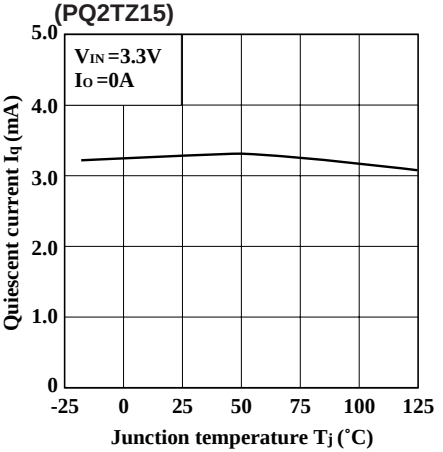


Fig.13 Quiescent Current vs. Junction Temperature (PQ2TZ15)



■ Model Line-ups for Tape-packaged Products

	Sleeve-packaged products		Tape-packaged products	
Output current	Standard type	High-precision output type	Standard type	High-precision output type
0.5A output	-	PQ2TZ55	-	PQ2TZ55U
1.0A output	-	PQ2TZ15	-	PQ2TZ15U