PQ1CZ38M2Z Series

SC-63 Surface Mount Type Chopper Regulator

■ Features

1. Maximum switching current:0.8A
2. Built-in ON/OFF control function.
3. Built-in soft start function to suppress overshoot of output voltage in power on sequence or ON/OFF control sequence.
4. Built-in oscillation circuit.
   (Oscillation frequency:TYP. 300kHz)
5. Built-in overheat/overcurrent protection function.
6. Variable output voltage.
   (Output variable range:V_{REF} to 35V/$-V_{REF}$ to -30V)
   [Possible to select step-down output/inverting output according to external connection circuit]

■ Applications

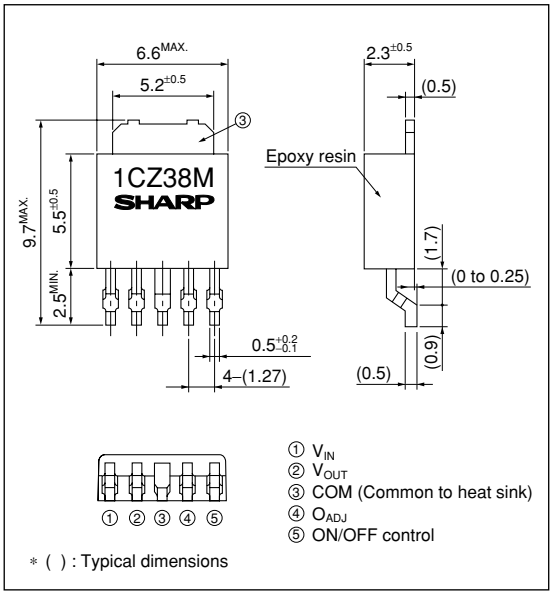
1. Facsimiles.
2. Printers.
3. Switching power supplies.

■ Absolute Maximum Ratings (T_a=25°C)

Parameter	Symbol	Rating	Unit
*1 Input voltage	V_{IN}	40	V
Output adjustment terminal voltage	V_{ADJ}	7	V
Dropout voltage	V_{I-O}	41	V
*2 Output-COM voltage	V_{OUT}	−1	V
*3 ON/OFF control voltage	V_C	−0.3 to +40	V
Switching current	I_{SW}	0.8	A
*4 Power dissipation	P_D	8	W
*5 Junction temperature	T_j	150	°C
Operating temperature	T_{opr}	−20 to +80	°C
Storage temperature	T_{stg}	−40 to +150	°C
*6 Soldering temperature	T_{sol}	260	°C

*1 Voltage between V_{IN} terminal and COM terminal
*2 Voltage between V_{OUT} terminal and COM terminal
*3 Voltage between ON/OFF control and COM terminal
*4 P_D:With infinite heat sink
*5 Overheat protection may operate at the condition T_j:125°C to 150°C
*6 For 10s

■ Outline Dimensions (Unit : mm)

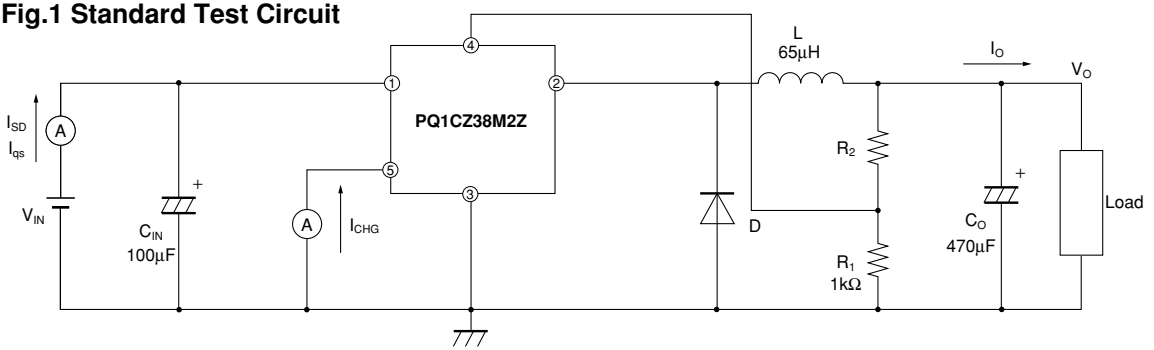


■ Electrical Characteristics

(Unless otherwise specified, condition shall be V_{IN}=12V, I_O=0.2A, V_O=5V, ⑤ terminal is open, T_a=25°C)

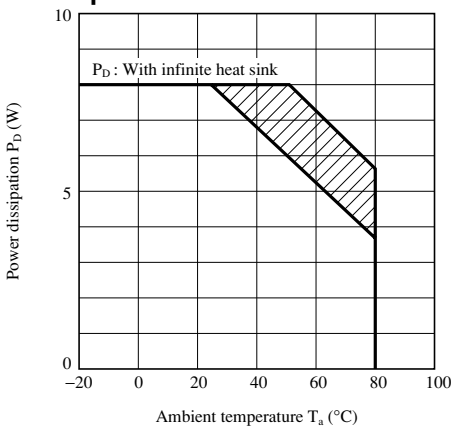
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output saturation voltage	V_{SAT}	I_{SW}=0.5A	–	0.9	1.5	V
Reference voltage	V_{REF}	–	1.235	1.26	1.285	V
Reference voltage temperature fluctuation	ΔV_{REF}	T_j=0 to 125°C	–	±0.5	–	%
Load regulation	$\lvert R_{eg}L \rvert$	I_O=0.1 to 0.5A	–	0.2	1.5	%
Line regulation	$\lvert R_{eg}I \rvert$	V_{IN}=8 to 35V	–	1	2.5	%
Efficiency	η	I_O=0.5A	–	80	–	%
Oscillation frequency	f_0	–	270	300	330	kHz
Oscillation frequency temperature fluctuation	Δf_0	T_j=0 to 125°C	–	±3	–	%
Overcurrent detecting level	I_L	–	0.85	1.2	1.6	A
Charge current	I_{CHG}	②, ④ terminals are open, ⑤ terminal	–	–10	–	µA
Input threshold voltage	V_{THL}	Duty=0%, ④ terminal=0V, ⑤ terminal	–	1.3	–	V
	V_{THH}	Duty=100%, ④ terminal=1.1V, ⑤ terminal	–	2.1	–	
ON threshold voltage	$V_{TH\ (ON)}$	④ terminal=0V, ⑤ terminal	0.7	0.8	0.9	V
Stand-by current	I_{SD}	V_{IN}=40V, ⑤ terminal=0V	–	140	400	µA
Output OFF-state consumption current	I_{QS}	V_{IN}=40V, ④ terminal=0V, ⑤ terminal=0.9V	–	5	10	mA

Fig.1 Standard Test Circuit



L : HK-08S070-6500 (made by Toho Co.)
D :ERC80-004 (made by Fuji electronics Co.)

Fig.2 Power Dissipation vs. Ambient Temperature



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

Fig.3 Block Diagram

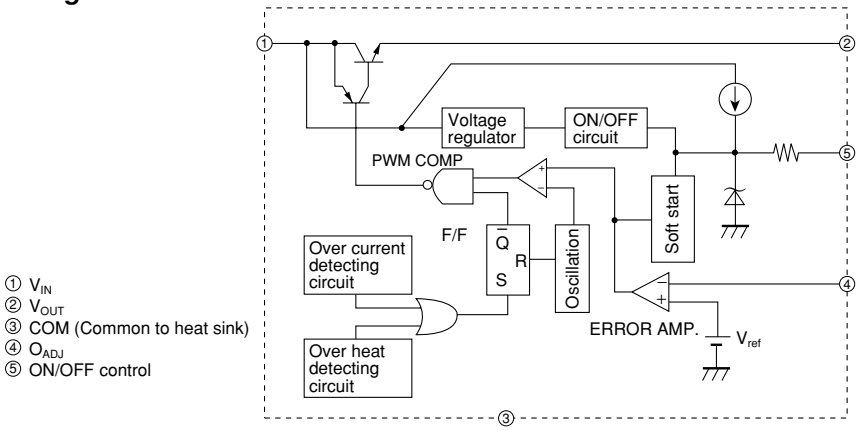


Fig.4 Step Down Type Circuit Diagram (5V output)

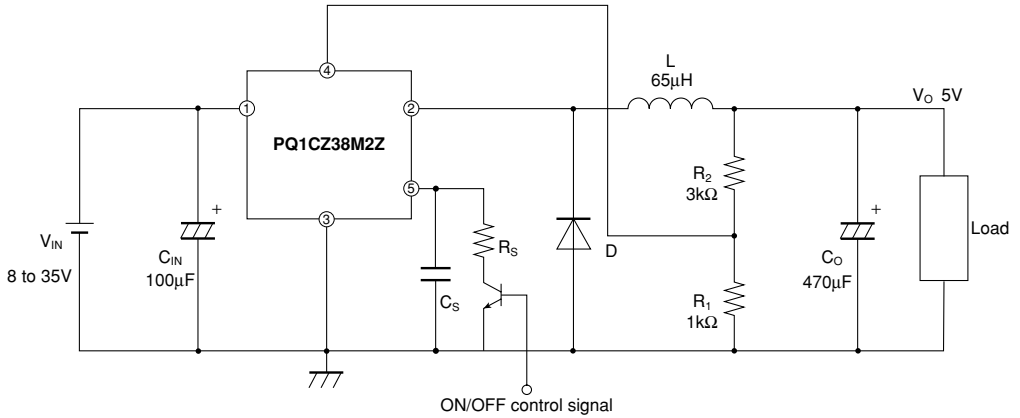
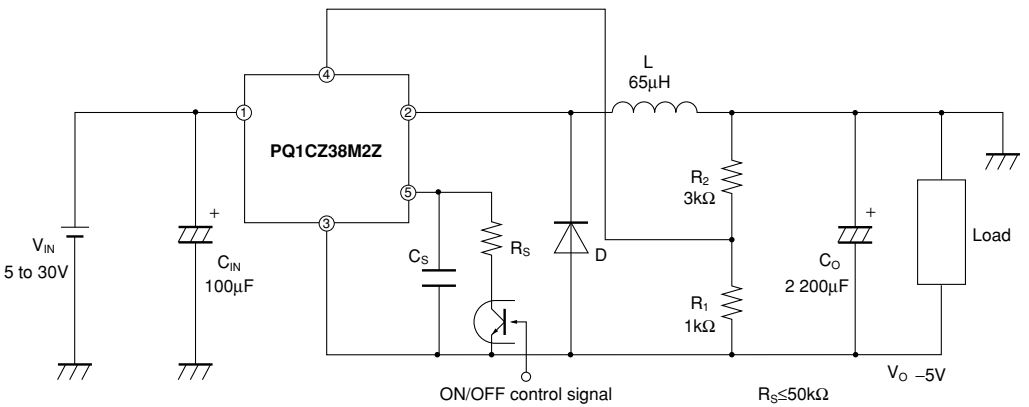


Fig.5 Polarity Inversion Type Circuit Diagram (-5V output)



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  --- Office automation equipment
  --- Telecommunication equipment [terminal]
  --- Test and measurement equipment
  --- Industrial control
  --- Audio visual equipment
  --- Consumer electronics

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  --- Alarm equipment
  --- Various safety devices, etc.

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