

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 ($T_a=25^{\circ}C$)

Parameter	Symbol	Rating	Unit
*1 Input voltage	V_{IN}	40	V
Output adjustment terminal voltage	V_{ADJ}	7	V
Dropout voltage	V_{L-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	$^{\circ}C$
Operating temperature	T_{opr}	-20 to +80	$^{\circ}C$
Storage temperature	T_{stg}	-40 to +150	$^{\circ}C$
*6 Soldering temperature	T_{sol}	260	$^{\circ}C$

*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

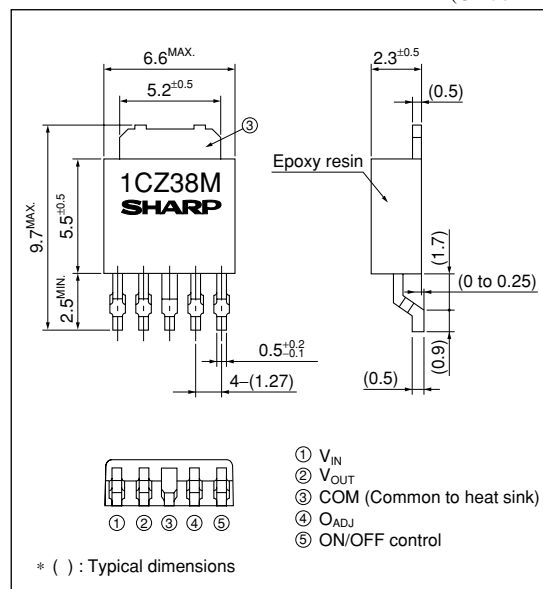
*4 P_D : With infinite heat sink

*5 Overheat protection may operate at the condition T_j : 125 $^{\circ}C$ to 150 $^{\circ}C$

*6 For 10s

■ Outline Dimensions

(Unit : mm)

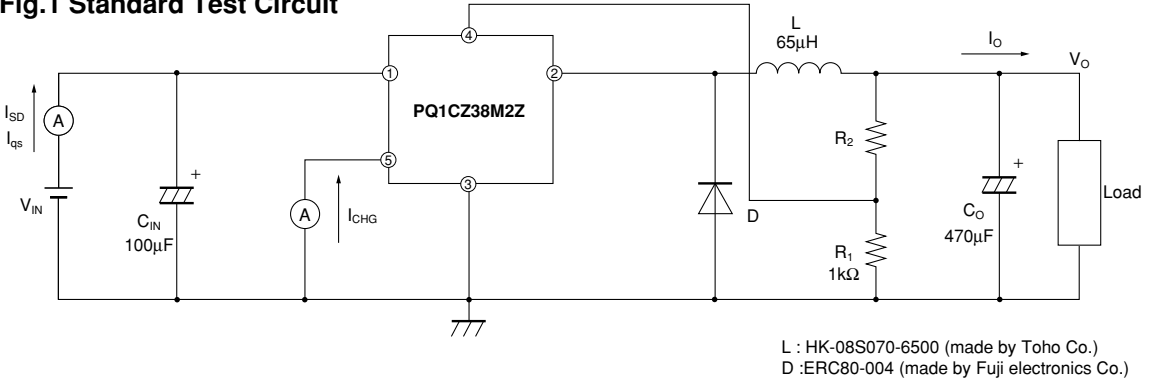


■ Electrical Characteristics

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

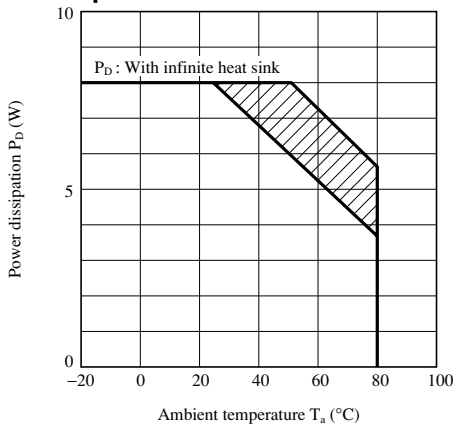
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output saturation voltage	V_{SAT}	$I_{SW}=0.5A$	—	0.9	1.5	V
Reference voltage	V_{REF}	—	1.235	1.26	1.285	V
Reference voltage temperature fluctuation	ΔV_{REF}	$T_f=0 \text{ to } 125^{\circ}C$	—	± 0.5	—	%
Load regulation	$ R_{cgL} $	$I_O=0.1 \text{ to } 0.5A$	—	0.2	1.5	%
Line regulation	$ R_{cgH} $	$V_{IN}=8 \text{ to } 35V$	—	1	2.5	%
Efficiency	η	$I_O=0.5A$	—	80	—	%
Oscillation frequency	f_0	—	270	300	330	kHz
Oscillation frequency temperature fluctuation	Δf_0	$T_f=0 \text{ to } 125^{\circ}C$	—	± 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 prion:Overheat protection may operate in this area

Fig.3 Block Diagram

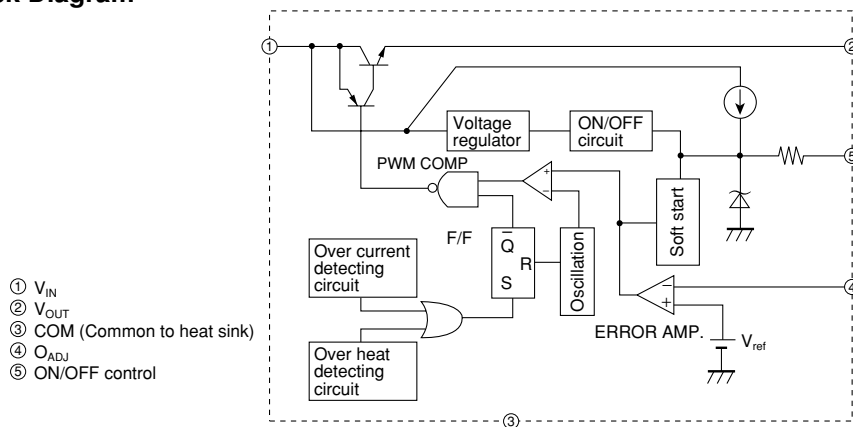


Fig.4 Step Down Type Circuit Diagram (5V output)

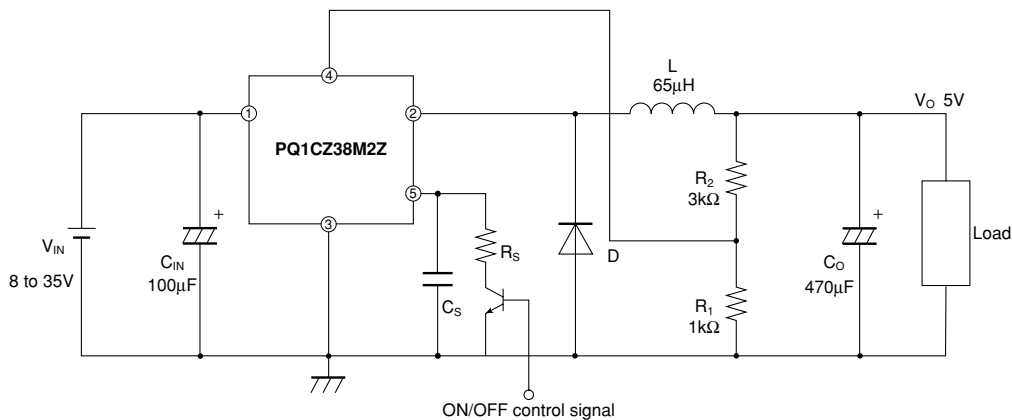
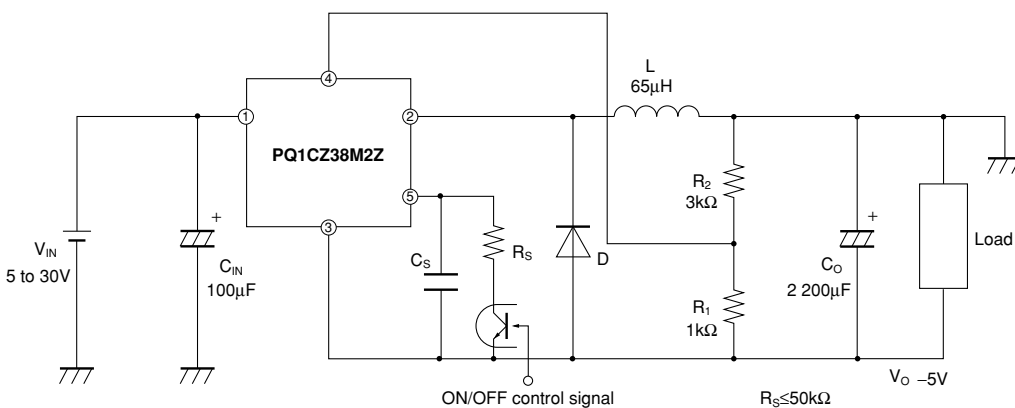


Fig.5 Polarity Inversion Type Circuit Diagram (-5V output)



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 - Various safety devices, etc.
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