

PQ1CZ21H2Z

Low Dissipation Current at OFF-state Chopper Regulator

■ Features

1. Maximum switching current: 1.5A
2. Low dissipation current at OFF-state ($I_{qs} = \text{Max. } 1\mu\text{A}$)
3. Built-in oscillation circuit
(Oscillation frequency: TYP. 100kHz)
4. Built-in overheat/overcurrent protection function
5. Variable output voltage
(Output variable range: V_{ref} to $35V - V_{\text{ref}}$ to $-30V$)
[Possible to select step-down output/inverting output according to external connection circuit]
PQ1CZ21H2ZZ: sleeve-packaged product
PQ1CZ21H2ZP: tape-packaged product

■ Applications

1. Facsimiles
2. Printers
3. Switching power supplies

■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
*1 Input voltage	V_{IN}	40	V
Output adjustment terminal voltage	V_{ADJ}	7	V
Dropout voltage	$V_{\text{I-O}}$	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}	1.5	A
*4 Power dissipation	P_{D}	8	W
*5 Junction temperature	T_{J}	150	°C
Operating temperature	T_{opr}	-40 to +85	°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

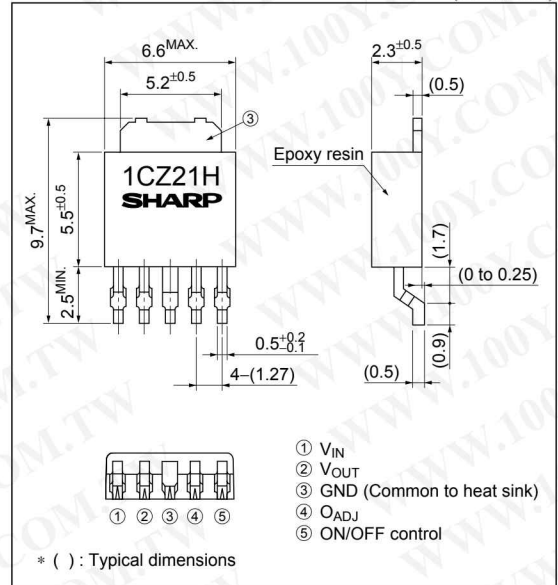
*4 P_{D} : With infinite heat sink

*5 Overheat protection may operate at the condition T_{J} : 125°C to 150°C

*6 For 10s

■ Outline Dimensions

(Unit : mm)



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Electrical Characteristics

(Unless otherwise specified, condition shall be $V_{IN}=12V$, $I_o=0.2A$, $V_o=5V$, ON-OFF terminal=2.7V, $T_a=25^\circ C$)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output saturation voltage	V_{SAT}	$I_{sw}=1A$	—	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 $125^\circ C$	—	± 0.5	—	%
Load regulation	$ R_{egL} $	$I_o=0.2$ to $1A$	—	0.1	1.5	%
Line regulation	$ R_{egI} $	$V_{IN}=8$ to $35V$	—	0.5	2.5	%
Efficiency	η	$I_o=1A$	—	82	—	%
Oscillation frequency	f_o	—	80	100	120	kHz
Oscillation frequency temperature fluctuation	Δf_o	$T_j=0$ to $125^\circ C$	—	± 3	—	%
Overcurrent detecting level	I_L	No L, C, D	1.55	2	2.6	A
ON threshold voltage	$V_{TH(ON)}$	④ terminal=0V, ⑤ terminal	0.8	1.5	2	V
Output ON control current	$I_{C(ON)}$	⑤ terminal=2.7V	—	—	200	μA
Output OFF control current	$I_{C(OFF)}$	⑤ terminal=0.4V	—	—	2	μA
Stand-by current	I_{SD}	$V_{IN}=40V$, ⑤ terminal=0V	—	—	1	μA
Output OFF-state consumption current	I_{QS}	$V_{IN}=40V$, ④ terminal=3V	—	8	12	mA

Fig.1 Standard Test Circuit

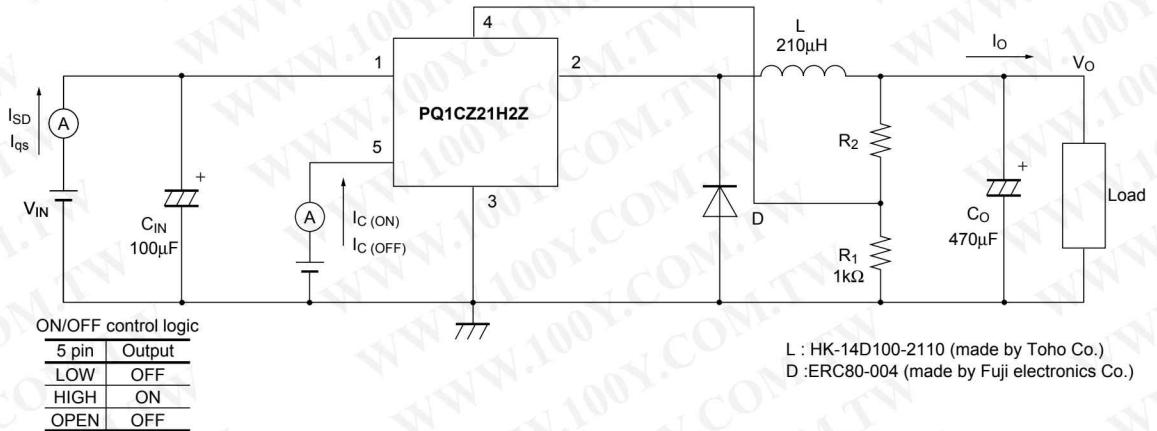
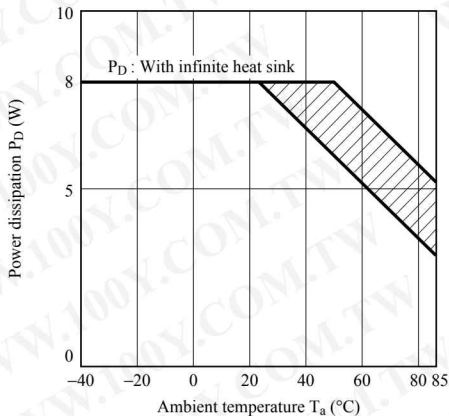


Fig.2 Power Dissipation vs. Ambient Temperature



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

Fig.3 Overcurrent Protection Characteristics (Typical value)

