

PQ2CF1 (Under Development)

TO-220 Package, Step Up Output Chopper Regulator

■ Features

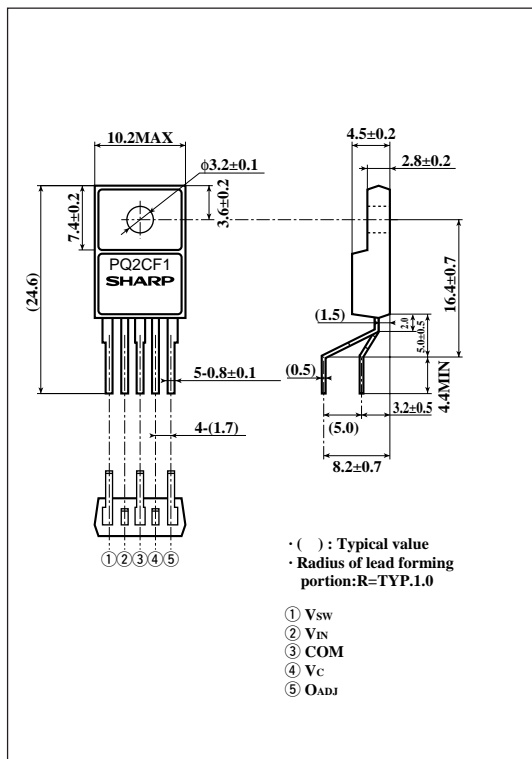
- Maximum switching current : 2.5A
- Built-in soft start function
- Built-in oscillation circuit
(oscillation frequency : TYP.50kHz)
- Built-in overheat protection, overcurrent protection function
- Variable output voltage (4.5 to 40V)
[Possible to choose step up output/flyback method according to external connection circuit]

■ Applications

- Personal computers/Word processors
- Printers
- Switching power supplies
- Facsimiles

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(T_a=25°C)

Parameter	Symbol	Rating	Unit
*1 Input voltage	V _{IN}	35	V
*2 Switching voltage	V _{SW}	35	V
Error input voltage	V _{ADJ}	7	V
*3 ON/OFF control voltage	V _C	7	V
Switching current	I _{SW}	2.5	A
Power dissipation (No heat sink)	P _{D1}	1.5	W
Power dissipation (With infinite heat sink)	P _{D2}	15	W
*4 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 Voltage between V_{IN} terminal and COM terminal*2 Voltage between V_{SW} terminal and COM terminal*3 Voltage between V_C terminal and COM terminal*4 Overheat protection may operate at 125=<T_j=<150°C.

· Please refer to the chapter "Handling Precautions".

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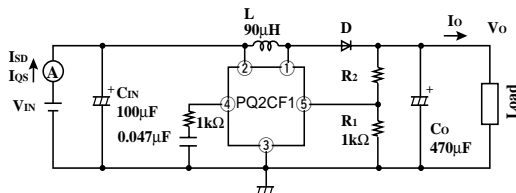
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■ Electrical Characteristics

(Unless otherwise specified, conditions shall be $V_{IN}=5V, I_o=0.2A, V_C=12V, T_a=25^{\circ}C$)

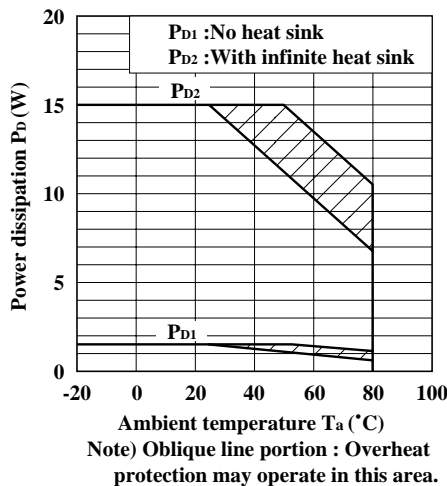
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output saturation voltage	V_{SAT}	$I_{SW}=2A$	-	0.6	1.2	V
Reference voltage	V_{ref}	-	1.235	1.26	1.285	V
Temperature change in reference voltage	ΔV_{ref}	$T_j=0$ to $125^{\circ}C$	-	± 0.5	-	%
Load regulation	$ R_{egL} $	$I_o=70$ to $570mA$	-	0.1	1.5	%
Line regulation	$ R_{egI} $	$V_{IN}=3.5$ to $10V$	-	0.2	1.5	%
Efficiency	η	$I_o=0.5A$	-	85	-	%
Oscillation frequency	f_o	-	40	50	60	kHz
Oscillation frequency temperature fluctuation	Δf_o	$T_j=0$ to $125^{\circ}C$	-	± 5	-	%
Maximum duty	D_{MAX}	⑤ terminal is open	90	-	-	%
Over current detecting level	I_L	Duty=50%,	2.7	4.4	5.8	A
Charge current 1	I_{CHG1}	④ terminal=0V, ④ terminal	-80	-50	-20	μA
Charge current 2	I_{CHG2}	④ terminal=0.5V, ④ terminal	-150	-100	-50	μA
Input threshold voltage	V_{THL}	Duty=0%, ④ terminal	0.55	0.75	0.95	V
Vc terminal low level voltage	V_{CH}	① terminal is open, ⑤ terminal=1.1V	1.65	1.85	2.05	V
Vc terminal high level voltage	V_{CL}	① terminal is open, ⑤ terminal=1.4V	0.3	0.45	0.6	V
On threshold voltage	V_{THON}	① terminal is open, ④ terminal	0.1	0.2	0.3	V
Stand-by current	I_{SD}	$V_{IN}=35V$, ④ terminal=0V, No L, Co, D, R ₁ , R ₂	-	270	400	μA
Output OFF-state consumption current	I_{qS}	$V_{IN}=35V$, ④ terminal=0.5V, No L, Co, D, R ₁ , R ₂	-	4.0	12	mA

Fig.1 Test Circuit

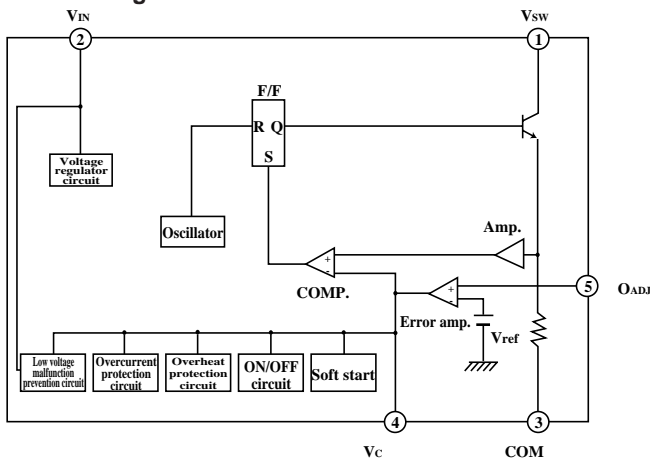


L : HK-12S100-9000 (made by Toho Co.)
 D : ERC80-004 (made by Fuji electronics Co.)

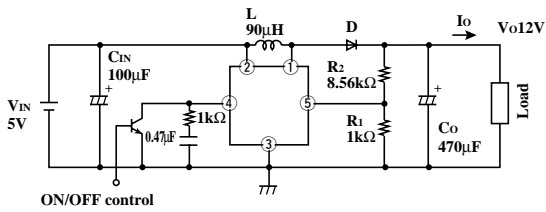
Fig.2 Power Dissipation vs. Ambient Temperature



■ Block Diagram



■ Step Up Type Circuit Diagram (12V output)



■ Flyback Method Circuit Diagram

