

PQ2CF1

(Under Development)

TO-220 Package, Step Up Output Chopper Regulator

■ Features

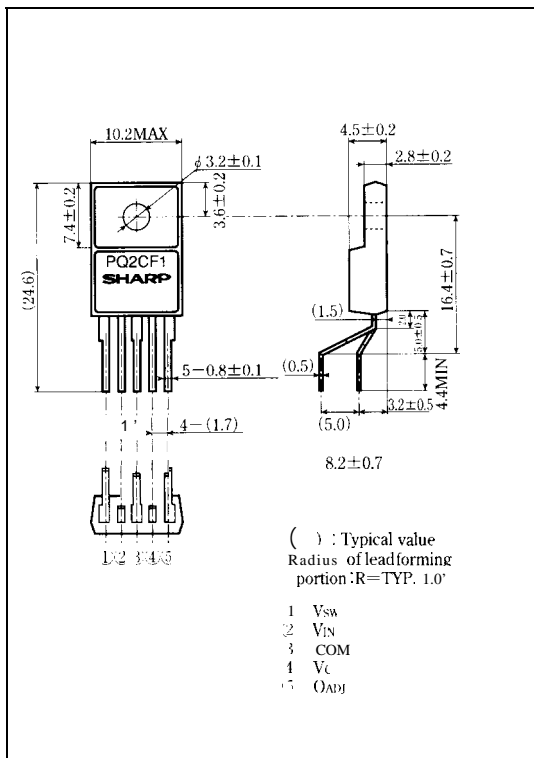
- . Maximum switching current : 2.5A
- Built-in soft start function
- Built-in oscillation circuit
(oscillation frequency: TYP.50kHz)
- Built-in overheat protection, overcurrent protection function
- . Variable output voltage (4.5 to 40V)
[Possible to choose step up output/flyback method according to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

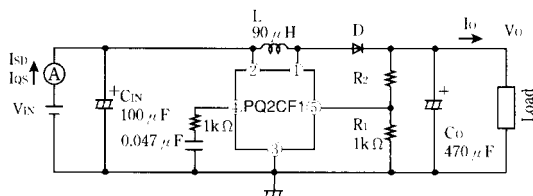
SHARP

■ Electrical Characteristics

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

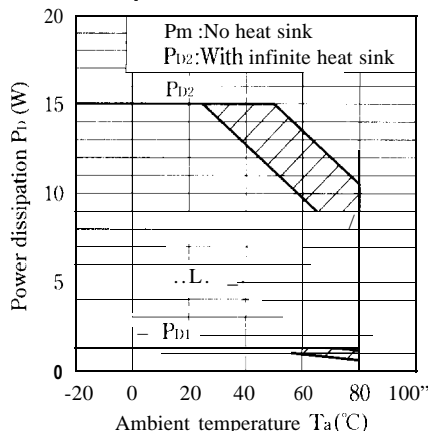
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output saturation voltage	V_{SAT}	$I_{SW}=2A$		0.6	1.2	v
Reference voltage	V_{ref}		1.235	1.26	1.285	v
Temperature change in reference voltage	ΔV_{ref}	$T_r=0$ to $125^{\circ}C$		± 0.5		%
Load regulation	R_{regL}	$I_o=70$ to $570mA$		0.1	1.5	%
Line regulation	R_{regI}	$V_{IN}=3.5$ 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
V_C terminal low level voltage	V_{CH}	1 terminal is open, 5 terminal=1.1V	1.65	1.85	2.05	v
V_C 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, R1, R2		270	400	μA
output OFF-state consumption current	I_{QS}	$V_{IN}=35V, 1$ terminal=0.5V, No L, Co, D, R1, R2		4.0	12	mA

Fig.1 Test Circuit



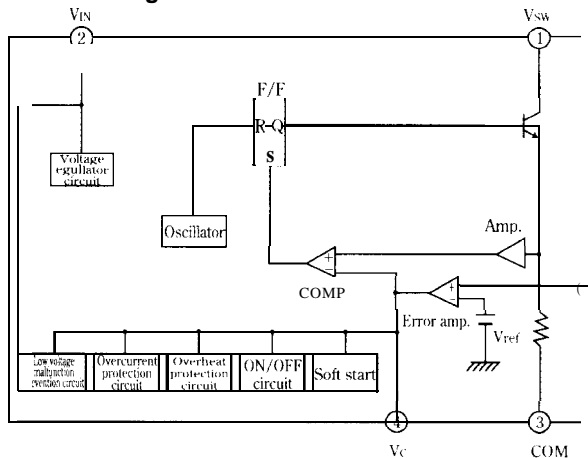
L:HK-12S100-9000 (made by Toho Co.)
 D:ERC-80-004 (made by Fuji electronics Co.)

Fig.2 Power Dissipation vs. Ambient Temperature

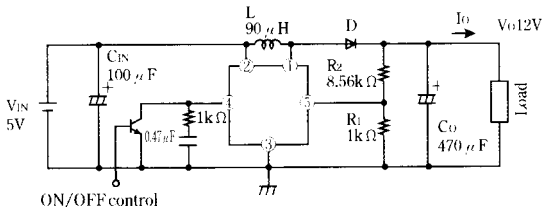


Note) Oblique line portion : Overheat protection may operate in this area.

■ Block Diagram



■ Step Up Type Circuit Diagram (12V output)



, Flyback Method Circuit Diagram

