

## Charging control driver IC for Portable telephone **BH3890FV**

### ●Description

The BH3890FV is a charging IC developed for a lithium ion battery (1 cell). Back-up charging circuit and charging current monitor circuit are included. This IC is directed by a micro computer controller.

### ●Features

- 1) Built-in charging driver circuit
- 2) Built-in charging current monitor circuit
- 3) Built-in back-up charging circuit
- 4) Small package SSOP-B8

### ●Applications

Portable telephone, PHS, equipment involving lithium ion battery

### ●Absolute Maximum Ratings (Ta=25°C)

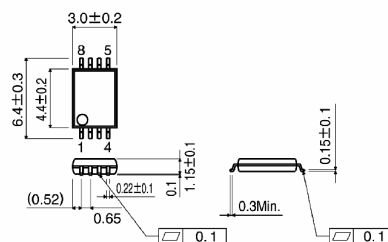
Parameter	Symbol	Limits	Unit
Maximum supply voltage	V <sub>CC</sub> MAX	-0.3 ~ +7.0	V
Power dissipation	P <sub>d</sub>	300	mW
Operating temperature range	T <sub>opr</sub>	-20 ~ +70	°C
Storage temperature range	T <sub>stg</sub>	-55 ~ +125	°C

Derating : 3.0mW/°C for operation above Ta=25°C.

### ●Recommended Operating Conditions (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	V <sub>CC</sub>	5	—	6	V

### ●Dimension (Units : mm)



SSOP-B8

● Electrical Characteristics (Unless otherwise noted, Ta=25°C, Vcc= 5.5V, BPF=20 ~ 20kHz)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
<VCC circuit current>						
Circuit current 1	IQ1	—	530	800	μA	CHG1=OFF, CHG2=OFF
Circuit current 2	IQ2	—	1.0	1.7	mA	CHG1=ON, REG=No load
Circuit current 3	IQ3	—	1.4	2.1	mA	CHG2=ON, CHARGE section=No load
<BATV circuit current> (Current influx into BATV terminal )						
Circuit current 4	IQ4	—	0	5	μA	CHG1=OFF, CHG2=OFF, Vcc=0V BATV=4.0V
<CURRENT>						
Output voltage 1	VOC1	2.37	2.57	2.77	V	VBATVH-VBATV=150mV
Output voltage 2	VOC2	0.44	0.54	0.64	V	VBATVH-VBATV=0V
Coefficient of output voltage inclination	LINC	12.7	13.5	14.3	—	LINC=(VOC1-VOC2) / 0.15
Ripple rejection rate	RRC	30	40	—	dB	VR=-20dBV, fR=100Hz, VBATVH=4.215V, VBATV=4.2V
Starting up voltage	VCCST	—	—	3.5	V	VCC (VOC2 0.4V)
<REG> (CHG1=ON, CHG2=OFF)						
Output voltage	VOR	4.35	4.45	4.55	V	IO=5mA
Ripple rejection rate	RRR	30	40	—	dB	VR=-30dBV, fR=100Hz, IO=5mA
Maximum output current	IORMAX	10	15	20	mA	VOR 4.0V
<CHARGE> (CHG1=OFF, CHG2=ON)						
Control voltage	VOB	4.15	4.20	4.25	V	IO=100mA
Ripple rejection rate	RRB	30	40	—	dB	VR=-20dBV, fR=100Hz, IO=100mA
Load regulation	VOB1	—	5	30	mV	IO=1~800mA
Input voltage stability	VOB2	—	5	30	mV	VCC=5.0~6.0V, IO=100mA

● Application circuit

