SGS-THOMSON MICROELECTRONICS

GSCC-8.507BC

BATTERY CHARGER

Type	V_i	V_o	I_o
GSCC-8.507BC	10.8 to 16 V	8.5 V	700 mA

FEATURES

- Charge of NiCd or NiMH batteries
- Switch mode constant current generation
- Three level charging current (fast, trickle, zero charging current)
- Overcharge detection by - Δ V and $\Delta T/\Delta t$ under internal microprocessor control
- No discharge of the battery when charger is turned off
- Initial trickle charge for deeply discharged batteries
- Maximum battery voltage protection
- Maximum battery temperature protection
- Timer back up protection
- Output short circuit protection
- Detection of fault battery
- Charge status displayed by LED

DESCRIPTION

The GSCC-8.507BC is a high efficiency battery charger for IN CAR application to be used with 5 cell NiCd or NiMH batteries.

Two versions of the INPUT PLUG ADAPTOR are available:

WASHER TIP VERSION: **GSCC-8.507BC-E** (Ordering Number)

SPRING-LOADED TIP VERSION: **GSCC-8.507BC-A** (Ordering Number)

(See pag. 3 for mechanical data)

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_i	Input Voltage	I_{ch} = 0 to 0.7A	10.8	14.4	16	V
I_{chf}	Fast Charge Current	V_i = 10.8 to 16V $V_{battery}$ = 5 to 8.2V	0.65	0.70	0.75	A
I_{cht}	Trickle Charge Current	V_i = 10.8 to 16V $V_{battery}$ = 1 to 5V or 0°C < Tbatt < 10°C or charge completed	20	30	40	mA
C	Returned Charge	V_i = 10.8 to 15V		95		%
V_{batt}	Maximum Battery Voltage Protection	V_i = 10.8 to 16V I_{ch} = 0.7A	8.2	8.5	8.7	V
T_{co}	Battery Temperature Cut Off	V_i = 10.8 to 16V I_{ch} = 0.0A		50		°C
tout	Time Out Protection Duration	V_i = 10.8 to 16V I_{ch} = 0.7A		2		hours
f_S	Switching Frequency	V_i = 10.8 to 16V I_{ch} = 0.03 to 0.7A		100		kHz
T_{op}	Operating Ambient Temperature Range		– 20		+60	°C
T_{stg}	Storage Temperature Range		– 25		+85	°C

Status	Condition
Red ON	- Fast charge (Ich = 0,7A)
Green ON	- Charge Completed (Ich = 0.03A) - Timer elapsed
Red Flashing	Anomalous battery conditions (Ich = 0.0A) - Initial $T_{battery}$ < 0 °C - Initial $T_{battery}$ > 40 °C - $T_{battery}$ > 50 °C - Faulty battery
Green Flashing	(Ich = 0.03A) - Initial charge of deeply discharged batteries - 0 °C < T_{batt} < 10 °C
OFF	Battery not connected

NOTES

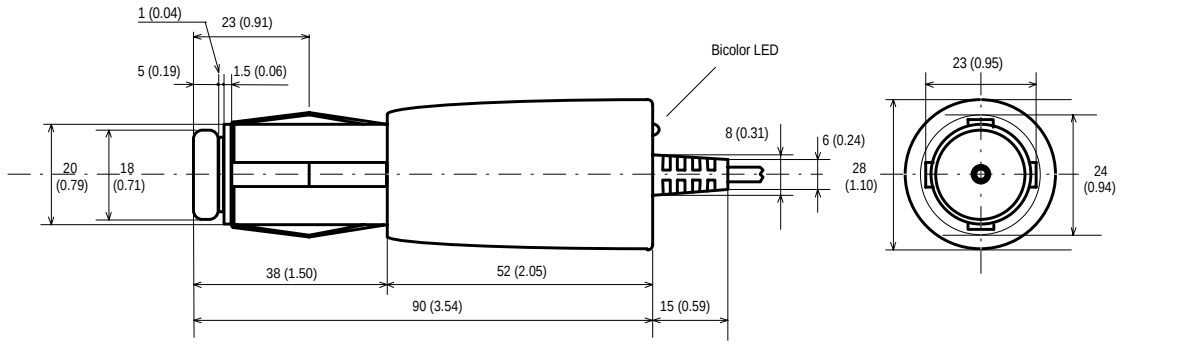
1 - The battery temperature detection is a function of the characteristics of the NTC resistor used inside the battery pack. Please consult factory.

2 - Different fast charge and trickle charge currents, and different time out are available on request (Maximum charge current cannot exceed 1A).

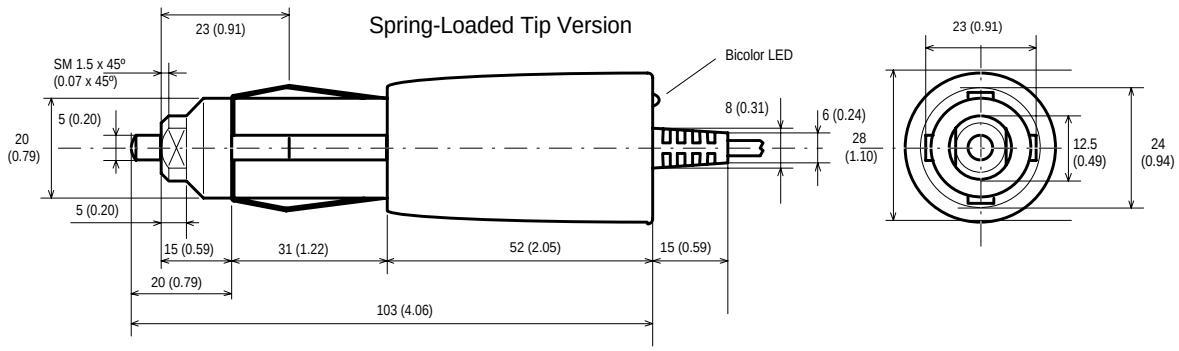
3 - For connector to the battery pack please consult factory.

CONNECTION DIAGRAM AND MECHANICAL DATA

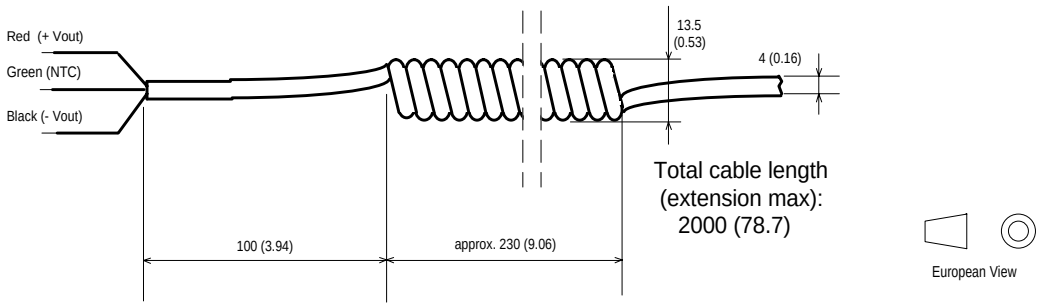
Washer Tip Version



Spring-Loaded Tip Version



Coiled cable (both versions)



Output connector to be defined according to customer specifications
Dimensions in mm (inches).