GLF3002

Single Cell Li-Ion/Polymer Battery Protection IC

Preliminary Specification

DESCRIPTION

The GLF3002 is a highly integrated solution for single cell rechargeable battery protection. It incorporates a low on-resistance power NFET along with high precision over voltage, over current, over discharge, and short circuit protection.

When the battery voltage exceeds the over-voltage detection threshold, the GLF3002 turns off the charging switch after a preset delay. Similarly, if the load current surpasses the over discharge current threshold, the discharge switch is turned off after a preset delay. If the discharge current reaches the short circuit protection level (I_{SC}), the GLF3002 immediately shuts down and remains off to prevent serious system damage. A short circuit delay is included to avoid false triggering.

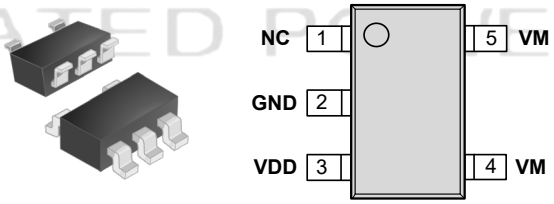
FEATURES

- Over Charge Voltage Detection, V_{OC} : 4.30 V V_{DD} Typ.
  - Accuracy : ± 1%
- Over Discharge Voltage Detection, V_{OD} : 2.39 V V_{DD} Typ.
- Over Charge Current Detection, I_{OC} : 3 A Typ.
  - I_{OC} with 12 ms Delay Time to avoid false trigger
- Over Discharge Current Detection, I_{OD} : 6 A Typ.
  - I_{OD} with 10 ms Delay Time to avoid false trigger
- Load Short Circuit Protection, I_{SC} : 15 A Typ.
- Thermal Shutdown Protection
- Battery and Charger Reverse Polarity Connection Protection
- Low R_{ON} : 27 mΩ Typ. at 3.6 V_{DD}
- Low Quiescent Current, I_Q : 2.6 μA Typ. at 3.6 V_{DD}

APPLICATIONS

- Portable BLDC Motor Applications
- Electric Toothbrush
- E-cigarette
- Smart IoT Device

PACKAGE

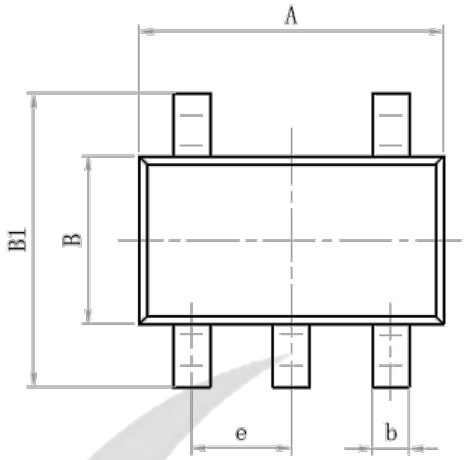


SOT23 - 5L

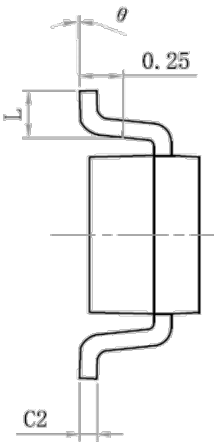
DEVICE INFORMATION

Part Number	Top Mark	R_{ON} (Typ.)	Over Charge Detection, V_{OC} (Typ.)	Over Discharge Voltage, V_{OD} (Typ.)	Over Charge Current, I_{OC} (Typ.)	Over Discharge Current, I_{OD} (Typ.)	Short Circuit Current, I_{SC} (Typ.)
GLF3002-T17	GQ	27 mΩ	4.30 V	2.39 V	3 A	6 A	15 A

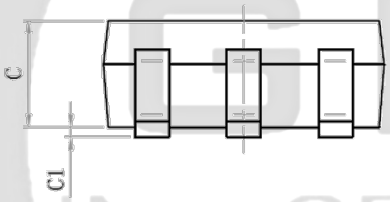
PACKAGE OUTLINE



TOP VIEW

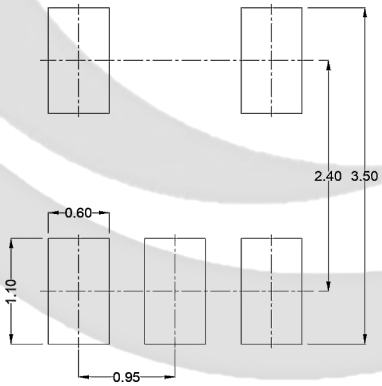


SIDE VIEW



FRONT VIEW

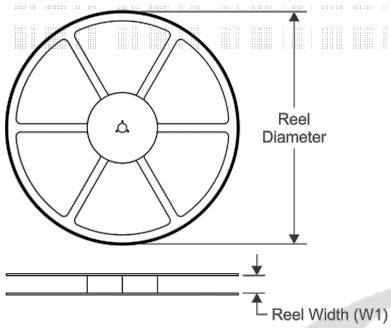
Recommended Footprint



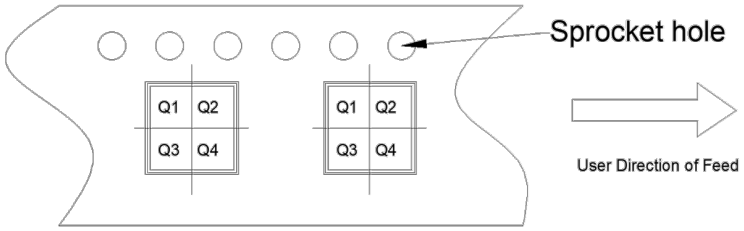
REF.	Dimensions Ref.		
	Min.	Nom.	Max.
C1	0.03	0.08	0.15
C	1.05	1.10	1.15
b	0.27	-	0.35
C2	0.135	-	0.23
A	2.82	2.92	3.02
B1	2.60	2.90	3.00
B	1.50	1.62	1.70
e	0.95 BSC		
L	0.35	0.45	0.55
θ	0°	-	8°

TAPE AND REEL DIMENSIONS

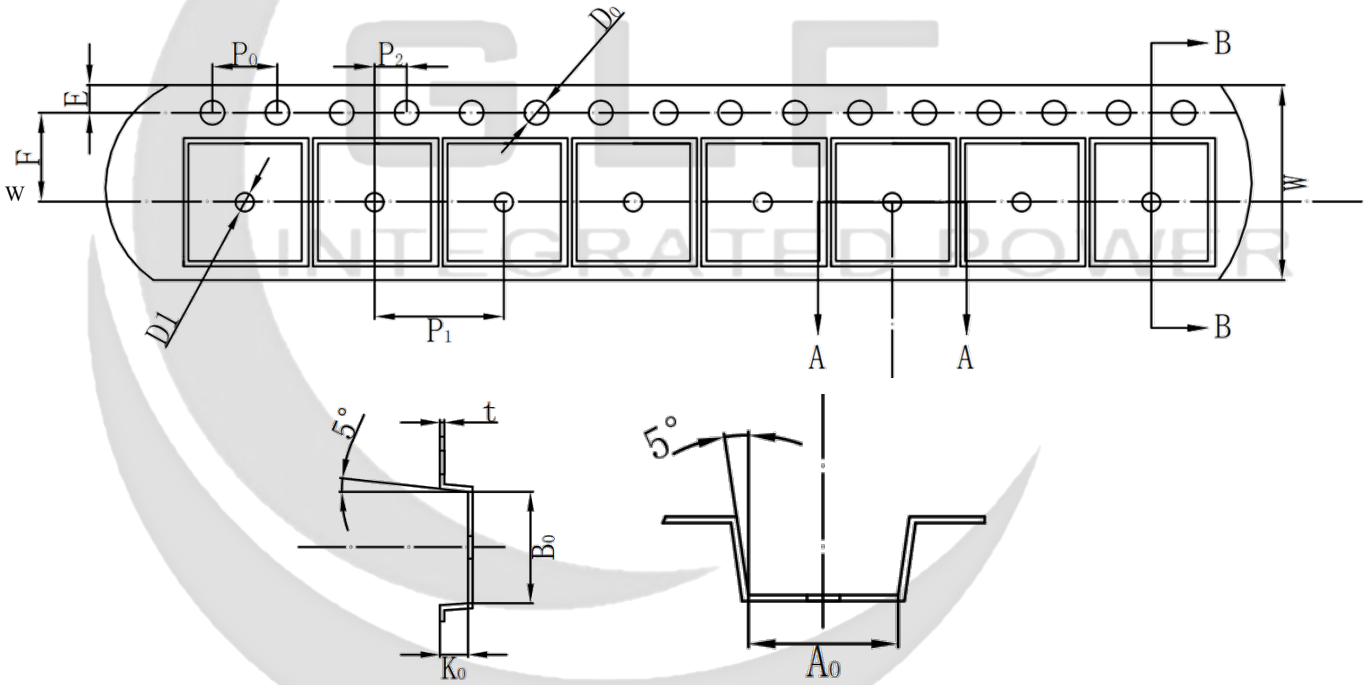
REEL DIMENSIONS



QUADRANT ASSIGNMENTS PIN 1 ORIENTATION TAPE



TAPE DIMENSIONS



Device	Package	Pins	SPQ	Reel Diameter (mm)	Reel Width W1	A0	B0	K0	P1	W	Pin1
GLF3002-T17	SOT23-5	5	3000	178	9	3.25	3.30	1.38	4	8	Q3

Remark:

A0: Dimension designed to accommodate the component width

B0: Dimension designed to accommodate the component length

K0: Dimension designed to accommodate the component thickness

W: Overall width of the carrier tape

P1: Pitch between successive cavity centers