

Battery Distribution & Charge-Port Blocking Board

The BAM-PCB-10001 combines a fused battery output with an active one-way charging input. Its MOSFET circuit is designed to pass current from a compatible charger toward the battery while blocking steady reverse current back into the charging port. Four solder tabs simplify integration into compact battery-powered equipment.

3 A charge-input target | 20 A continuous-output target | 30 A fuse

The 3 A and 20 A figures are design targets pending hardware validation, not verified product ratings.

Specification	BAM-PCB-10001 / Hardware Rev 5
Charge-input current	3 A design target through TB3; total charger current, including any simultaneous load demand.
Continuous load output	20 A design target on the pack-to-load path.
Peak / surge current	Not specified. No published 30 A continuous or peak PCB rating.
Installed fuse	30 A , Bel 0678H9300-02. Fuse rating is not a PCB current rating or an electronic current limit.
Operating voltage	Qualified board range not yet established. Original example: 25.2 V fully charged pack.
Battery compatibility	No fixed cell count. Select by full-charge voltage, charger tolerance and external BMS compatibility.
Circuit / connections	Active ideal-diode controller and N-channel MOSFET; four solder tabs, TB1-TB4.
PCB size / construction	22 x 55 mm ; 1.6 mm nominal PCB thickness, excluding components. Two layers, 2 oz copper per layer specified.
Environment / other limits	Operating temperature, leakage, transient and fault ratings are not yet published. External insulation and mechanical support required.

1 · CONNECTIONS

TB1: pack + | **TB2:** load + | **TB3:** charger + | **TB4:** protected common -

2 · INTEGRATION REQUIREMENTS & LIMITATIONS

External charger and BMS required as appropriate to the battery. No charging-voltage/current regulation, cell balancing, or individual-cell over/undervoltage protection is provided.

TB4 is a reference/TVS return. Connect load - and charger - directly to the external common-port BMS P- junction, with a separate branch to TB4. Do not route main load return through PCB copper.

Blocking applies toward the charge port. TB1 and TB2 are linked through the fuse; an energized charge input can also power TB2. This is not a load disconnect or galvanic isolator.

Component ratings are not board ratings. The fitted SMAJ30A devices have 30 V standoff; this does not establish a 30 V operating rating or a precise 30 V clamp. Higher-voltage use requires engineering review.