



昌 勃 有 限 公 司
Dr. POWER CORPORATION

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零 件 規 格 書/承 認 書
SPECIFICATION FOR APPROVAL

CUSTOMER : _____

DESCRIPTION : Battery Pack

MODEL : Panasonic NCR18500 2S1P 鋰電池組

CUSTOMER PART NO : _____

APPROVED SIGNATURES

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| Rev | Date | Description | Designed | Checked | Approved |
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| A | 2016/2/3 | Release | | Kevin | |
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| | Document Name | | Rev. | 1.0 |
| | Model No. | NCR18500-21 | | |

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1. Scope

This specification shall be applied to Sonata Lithium Ion battery pack (2 series 1 parallel)

* Recharge battery after long time storage before use.

2. Composition

The Single cell consists of 2000 mAh capacity also Battery Pack 2000 mAh combines with protection circuit and thermal protection.

3. Product specification

| No | Item | Rating performance | Remark |
|----|---|--------------------------|--|
| 1 | Typical Capacity | 2000 mAh | 0.2C discharging to 4.8V |
| 2 | Nominal voltage | 7.4V | |
| 3 | Maximum charge voltage | 8.55V | |
| 4 | The end of discharging voltage | 4.8V | |
| 5 | Suggestive charging current(standard) | 400mA / 0.2C | 0°C to 40°C |
| 6 | Suggestive charging current(Max) | 2000mA / 1C | 0°C to 40°C |
| 7 | Suggestive continuous discharging current | 400mA / 0.2C | -20°C to 60°C |
| 8 | Suggestive continuous discharging current (Max) | 2000mA / 0.5C | 0°C to 40°C |
| 9 | Internal resistance | mΩ | Measured by the alternate current method (1Khz) |
| 10 | Outer Dimension(mm) (L*W*T) | 54*37*18.8mm (Max) | |
| 11 | Weight | | g |
| 12 | Gc fU[Y Temperature | !&0°C ~ +5\$°C ħ +\$F < | DY fW bHJ[Y` c ZfyWc j Y fUV Y` WUd UW]mi, \$i` " |
| | | -20°C ~ +(0°C ħ +\$F < | |
| | | -20°C ~ +&0°C , I +\$F < | |

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4. Electronic Performance.

| Function item | Test Method | Criteria |
|---|---|-------------------|
| 5.1.1 Charge (Full charge) | The charge supply 400 mA constant current until battery voltage reaches V, then be charged at constant voltage of 8.55V while tapering the charge current. Charging time is 5.0 hours in all. | |
| 5.1.2 Capacity | Within 1 hour after fully charge at 0.2C (400mA) Continuously down to 4.8V end voltage. | More than 300 min |
| | Within 1 hour after fully charge at 1C (2 A) Continuously down to 4.8 V end voltage. | More than 60 min |
| 5.1.3 Cycle Life | The cycle time is no less than 450. Charged at CC-CV (1000 mA/8.55 V) for 3.0 hours, discharge at 400mA to 4.8V end voltage. after 450 cycles, discharge time is measured as specified in paragraph 5.1.2 (Fully charge at 1.0C) | More than 36min |
| 5.1.4 Hi-temperature charge and discharge Characteristic | Within 1 hour after fully charge at 20°C, battery pack is stored at 60°C. Discharge time is measured by discharging at 400 mA continuously down to 4.8 V end voltage. | More than 48min |
| 5.1.5 Low-temperature charge and discharge characteristic | Within 1 hour after fully charge at 20°C, battery pack is stored at 0°C. Discharge time is measured by discharging at 400 mA continuously down to 4.8 V end voltage. | More than 33min |
| 5.1.6 Full charged state storage | The capacity on 1C mA discharge shall be measured after standard charge and storage at 60±2°C for 10 days. | More than 33min |
| | After above measured remaining capacity, the capacity on standard discharge shall be measured after charge. | More than 43min |
| | The capacity on 1CmA discharge shall be measured after standard charge and storage at 60±2°C for 10 days. | More than 28min |
| | After above measured remaining capacity, the capacity on standard discharge shall be measured after charge. | More than 38min |
| 5.1.7 Full discharge state storage | After fully charged and discharged as specified in paragraph 5.1.2 (Fully charge at 1.0C), then store for 20 days at 60°C and rest at room temperature for 1 hour. Discharging time is measured as specified in paragraph 5.1.2 (Fully charge at 1.0C). | More than 48min |

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11. Outer Dimension

