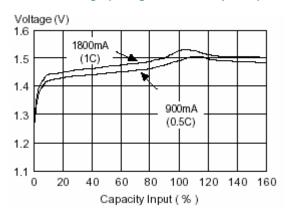


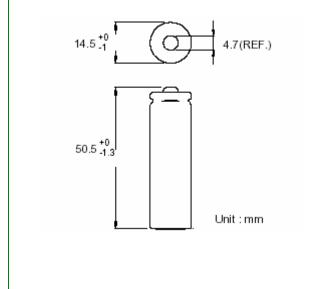
# **DATA SHEET**

Rechargeable Nickel Metal Hydride Cylindrical Cell		
Nominal Dimension (with Sleeve)	Type :	Rechargeable Nickel Metal
Mapplications   H = 50.5mm		Hydride Cylindrical Cell
Applications       : Recommended discharge current 180 to 5400mA         Nominal Voltage       : 1.2V         Capacity       : Rated: 1800mAh Typical: 1850mAh When discharged at 360mA to 1.0V at 20°C         Charging Condition       : 180mA for 16 hrs at 20°C         Charging Retention       80% of nominal capacity after cell storage at 20°C for 12 months When discharged at 360mA to 1.0V at 20°C         Fast Charge       : 900mA to 1800mA (0.5 to 1C) charge termination control recommended control parameters: -ΔV : 0-5mV DT/dt : 0.8°C/min (0.5 to 0.9C) 0.8 - 1°C/min (1C)         TCO       : 45 - 50°C Timer : 105% nominal input (for ref. only)         Service Life       : >500 cycles (IEC standard)         Continuous       : 180mA maximum current for 1 year. No conspicuous deformation and/or leakage         Weight       : 28.0g         Internal Resistance       : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz         Max. Charging Voltage       : 1.5V at 180mA charging         Ambient Temperature       : Standard Charge : 0 to 45°C Fast Charging : 10 to 45°C Discharge : -20 to 50°C		$\Phi$ = 14.5mm
180 to 5400mA   Nominal Voltage   : 1.2V   Capacity   : Rated: 1800mAh   Typical: 1850mAh   When discharged at 360mA to 1.0V at 20℃   Charging Condition   : 180mA for 16 hrs at 20℃   Charging Retention   80% of nominal capacity after cell storage at 20℃ for 12 months   When discharged at 360mA to 1.0V at 20℃   Fast Charge   : 900mA to 1800mA (0.5 to 1C)   charge termination control recommended control parameters: -ΔV : 0-5mV   DT/dt : 0.8℃/min (0.5 to 0.9C)   0.8 - 1℃/min (1C)   TCO : 45 - 50℃   Timer : 105% nominal input (for ref. only)   Service Life   : >500 cycles (IEC standard)   Continuous   : 180mA maximum current for 1 year. No conspicuous deformation and/or leakage   Weight   : 28.0g   Internal Resistance   : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz   Max. Charging Voltage   : 1.5V at 180mA charging   : Standard Charge : 0 to 45℃   Fast Charging : 10 to 45℃   Discharge : -20 to 50℃   Discharge : -20 to 50℃	(with Sleeve)	H = 50.5mm
Nominal Voltage       : 1.2V         Capacity       : Rated: 1800mAh         Typical: 1850mAh       When discharged at 360mA to        OV at 20°C       : 180mA for 16 hrs at 20°C         Charging Retention       : 80% of nominal capacity after cell storage at 20°C for 12 months         When discharged at 360mA to       1.0V at 20°C         Fast Charge       : 900mA to 1800mA (0.5 to 1C)         charge termination control recommended control parameters:       -ΔV : 0-5mV         DT/dt : 0.8°C/min (0.5 to 0.9C)       0.8 - 1°C/min (1C)         TCO : 45 - 50°C       Timer : 105% nominal input (for ref. only)         Service Life :>500 cycles (IEC standard)         Continuous Overcharge       : 180mA maximum current for 1 year.         No conspicuous deformation and/or leakage         Weight : 28.0g         Internal Resistance : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz         Max. Charging Voltage : 1.5V at 180mA charging         Ambient Temperature Range       Standard Charge : 0 to 45°C         Fast Charging : 10 to 45°C       Discharge : -20 to 50°C	Applications :	Recommended discharge current
Rated: 1800mAh         Typical: 1850mAh         When discharged at 360mA to         1.0V at 20°C         Charging Condition         Charging Retention         80% of nominal capacity after cell storage at 20°C for 12 months         When discharged at 360mA to         1.0V at 20°C         Fast Charge         990mA to 1800mA (0.5 to 1C)         charge termination control recommended control parameters:         -ΔV : 0-5mV         DT/dt : 0.8°C/min (0.5 to 0.9C)         0.8 - 1°C/min (1C)         TCO : 45 - 50°C         Timer : 105% nominal input (for ref. only)         Service Life :>500 cycles (IEC standard)         Continuous       : 180mA maximum current for 1 year.         Overcharge       : 180mA maximum current for 1 year.         No conspicuous deformation and/or leakage         Weight : 28.0g         Internal Resistance : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz         Max. Charging Voltage : 1.5V at 180mA charging         Ambient Temperature Range : Standard Charge : 0 to 45°C         Fast Charging : 10 to 45°C         Discharge : -20 to 50°C		
Typical: 1850mAh When discharged at 360mA to 1.0V at 20°C  Charging Condition: 180mA for 16 hrs at 20°C Charging Retention: 80% of nominal capacity after cell storage at 20°C for 12 months When discharged at 360mA to 1.0V at 20°C  Fast Charge: 900mA to 1800mA (0.5 to 1C) charge termination control recommended control parameters: -ΔV: 0-5mV DT/dt: 0.8°C/min (0.5 to 0.9C) 0.8 - 1°C/min (1C) TCO: 45 - 50°C Timer: 105% nominal input (for ref. only)  Service Life: >500 cycles (IEC standard)  Continuous: 180mA maximum current for 1 year. No conspicuous deformation and/or leakage  Weight: 28.0g Internal Resistance: Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz  Max. Charging Voltage: 1.5V at 180mA charging  Ambient Temperature Range: Standard Charge: 0 to 45°C Fast Charging: 10 to 45°C Discharge: -20 to 50°C		1.2V
When discharged at 360mA to 1.0V at 20°C         Charging Condition       : 180mA for 16 hrs at 20°C         Charging Retention       80% of nominal capacity after cell storage at 20°C for 12 months When discharged at 360mA to 1.0V at 20°C         Fast Charge       : 900mA to 1800mA (0.5 to 1C) charge termination control recommended control parameters: -ΔV : 0-5mV DT/dt : 0.8°C/min (0.5 to 0.9C) 0.8 - 1°C/min (1C)         TCO       : 45 - 50°C Timer : 105% nominal input (for ref. only)         Service Life       : >500 cycles (IEC standard)         Continuous       : 180mA maximum current for 1 year. No conspicuous deformation and/or leakage         Weight       : 28.0g         Internal Resistance       : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz         Max. Charging Voltage       : 1.5V at 180mA charging         Ambient Temperature Range       Standard Charge : 0 to 45°C Fast Charging : 10 to 45°C Discharge : -20 to 50°C	Capacity :	
1.0V at 20°C		
Charging Condition       : 180mA for 16 hrs at 20°C         Charging Retention       80% of nominal capacity after cell storage at 20°C for 12 months         When discharged at 360mA to 1.0V at 20°C         Fast Charge       : 900mA to 1800mA (0.5 to 1C) charge termination control recommended control parameters: -ΔV : 0-5mV         DT/dt       : 0.8°C/min (0.5 to 0.9C)         0.8 - 1°C/min (1C)       TCO : 45 - 50°C         Timer       : 105% nominal input (for ref. only)         Service Life       : >500 cycles (IEC standard)         Continuous       : 180mA maximum current for 1 year. No conspicuous deformation and/or leakage         Weight       : 28.0g         Internal Resistance       : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz         Max. Charging Voltage       : 1.5V at 180mA charging         Ambient Temperature       : Standard Charge : 0 to 45°C         Past Charging : 10 to 45°C       Discharge : -20 to 50°C		
Charging Retention  80% of nominal capacity after cell storage at 20°C for 12 months When discharged at 360mA to 1.0V at 20°C  Fast Charge  900mA to 1800mA (0.5 to 1C) charge termination control recommended control parameters: -ΔV : 0-5mV DT/dt : 0.8°C/min (0.5 to 0.9C) 0.8 - 1°C/min (1C)  TCO : 45 - 50°C Timer : 105% nominal input (for ref. only)  Service Life :>500 cycles (IEC standard)  Continuous : 180mA maximum current for 1 year. No conspicuous deformation and/or leakage  Weight : 28.0g  Internal Resistance : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz  Max. Charging Voltage : 1.5V at 180mA charging  Ambient Temperature : Standard Charge : 0 to 45°C Fast Charging : 10 to 45°C Discharge : -20 to 50°C		1.0V at 20℃
storage at 20°C for 12 months When discharged at 360mA to 1.0V at 20°C  Fast Charge : 900mA to 1800mA (0.5 to 1C) charge termination control recommended control parameters: -ΔV : 0-5mV DT/dt : 0.8°C/min (0.5 to 0.9C) 0.8 - 1°C/min (1C) TCO : 45 - 50°C Timer : 105% nominal input (for ref. only)  Service Life : >500 cycles (IEC standard)  Continuous : 180mA maximum current for 1 year. No conspicuous deformation and/or leakage  Weight : 28.0g  Internal Resistance : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz  Max. Charging Voltage : 1.5V at 180mA charging  Ambient Temperature : Standard Charge : 0 to 45°C Fast Charging : 10 to 45°C Discharge : -20 to 50°C	Charging Condition	180mA for 16 hrs at 20°C
storage at 20°C for 12 months When discharged at 360mA to 1.0V at 20°C  Fast Charge : 900mA to 1800mA (0.5 to 1C) charge termination control recommended control parameters: -ΔV : 0-5mV DT/dt : 0.8°C/min (0.5 to 0.9C) 0.8 - 1°C/min (1C) TCO : 45 - 50°C Timer : 105% nominal input (for ref. only)  Service Life : >500 cycles (IEC standard)  Continuous : 180mA maximum current for 1 year. No conspicuous deformation and/or leakage  Weight : 28.0g  Internal Resistance : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz  Max. Charging Voltage : 1.5V at 180mA charging  Ambient Temperature : Standard Charge : 0 to 45°C Fast Charging : 10 to 45°C Discharge : -20 to 50°C	Charging Retention	
1.0V at 20°C		storage at 20°C for 12 months
Fast Charge  : 900mA to 1800mA (0.5 to 1C) charge termination control recommended control parameters: -ΔV : 0-5mV DT/dt : 0.8°C/min (0.5 to 0.9C) 0.8 - 1°C/min (1C) TCO : 45 - 50°C Timer : 105% nominal input (for ref. only)  Service Life : >500 cycles (IEC standard)  Continuous : 180mA maximum current for 1 year. No conspicuous deformation and/or leakage  Weight : 28.0g  Internal Resistance : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz  Max. Charging Voltage : 1.5V at 180mA charging  Ambient Temperature : Standard Charge : 0 to 45°C Fast Charging : 10 to 45°C Discharge : -20 to 50°C		When discharged at 360mA to
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-ΔV : 0.5mV DT/dt : 0.8°C/min (0.5 to 0.9C) 0.8 - 1°C/min (1C) TCO : 45 - 50°C Timer : 105% nominal input (for ref. only)  Service Life : >500 cycles (IEC standard)  Continuous : 180mA maximum current for 1 year. No conspicuous deformation and/or leakage  Weight : 28.0g  Internal Resistance : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz  Max. Charging Voltage : 1.5V at 180mA charging  Ambient Temperature : Standard Charge : 0 to 45°C Fast Charging : 10 to 45°C Discharge : -20 to 50°C		
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0.8 - 1°C/min (1C)  TCO : 45 - 50°C  Timer : 105% nominal input (for ref. only)  Service Life : >500 cycles (IEC standard)  Continuous : 180mA maximum current for 1 year. No conspicuous deformation and/or leakage  Weight : 28.0g  Internal Resistance : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz  Max. Charging Voltage : 1.5V at 180mA charging  Ambient Temperature : Standard Charge : 0 to 45°C  Fast Charging : 10 to 45°C  Discharge : -20 to 50°C		4
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(for ref. only)   Service Life		TCO : 45 - 50°C
Service Life       : >500 cycles (IEC standard)         Continuous       : 180mA maximum current for 1 year.         Overcharge       No conspicuous deformation and/or leakage         Weight       : 28.0g         Internal Resistance       : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz         Max. Charging Voltage       : 1.5V at 180mA charging         Ambient Temperature       : Standard Charge : 0 to 45°C         Range       Fast Charging : 10 to 45°C         Discharge : -20 to 50°C		Timer : 105% nominal input
Continuous       : 180mA maximum current for 1 year.         Overcharge       No conspicuous deformation and/or leakage         Weight       : 28.0g         Internal Resistance       : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz         Max. Charging Voltage       : 1.5V at 180mA charging         Ambient Temperature       : Standard Charge : 0 to 45°C         Range       Fast Charging : 10 to 45°C         Discharge : -20 to 50°C		(for ref. only)
Overcharge       No conspicuous deformation and/or leakage         Weight       : 28.0g         Internal Resistance       : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz         Max. Charging Voltage       : 1.5V at 180mA charging         Ambient Temperature       : Standard Charge : 0 to 45°C         Range       Fast Charging : 10 to 45°C         Discharge : -20 to 50°C		
leakage	Continuous :	
Weight       : 28.0g         Internal Resistance       : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz         Max. Charging Voltage       : 1.5V at 180mA charging         Ambient Temperature       : Standard Charge : 0 to 45°C         Range       Fast Charging : 10 to 45°C         Discharge : -20 to 50°C	Overcharge	No conspicuous deformation and/or
Internal Resistance       : Average 25mΩ upon fully charged (Max. 35mΩ) at 1000Hz         Max. Charging Voltage       : 1.5V at 180mA charging         Ambient Temperature       : Standard Charge : 0 to 45°C         Range       Fast Charging : 10 to 45°C         Discharge : -20 to 50°C		leakage
(Max. 35mΩ) at 1000Hz  Max. Charging Voltage: 1.5V at 180mA charging  Ambient Temperature: Standard Charge: 0 to 45°C  Range: Fast Charging: 10 to 45°C  Discharge: -20 to 50°C		J
Max. Charging Voltage: 1.5V at 180mA chargingAmbient Temperature: Standard Charge : 0 to 45°CRangeFast Charging : 10 to 45°CDischarge : -20 to 50°C	Internal Resistance	
Ambient Temperature : Standard Charge : 0 to 45°C Range : Standard Charge : 0 to 45°C Fast Charging : 10 to 45°C Discharge : -20 to 50°C		
Range Fast Charging : 10 to 45℃ Discharge : -20 to 50℃		
Discharge : -20 to 50°C	•	_
	Range	Fast Charging : 10 to 45°C
Storage : -20 to 35℃		Discharge : -20 to 50°C
		Storage : -20 to 35°C

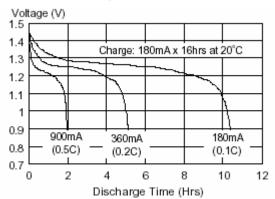
### Fast Charge (Charge Control Required)



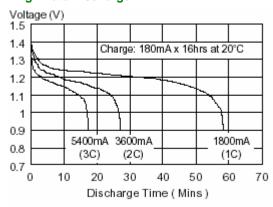
# Model No.: GP180AAHC



#### **Low Rate Discharge**



### **High Rate Discharge**



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MRS6220 rev.01

