

Panasonic® Nickel-Metal Hydride Batteries and Tabbed Versions

Features:

- **Superior Energy Density:** Nickel-metal hydride batteries have approximately double the capacity compared with Panasonic's standard Ni-Cad batteries
- **High Cycle Life:** Like Ni-Cad batteries, nickel-metal hydride batteries can be repeatedly charged and discharged up to approximate 500 cycles (under ideal conditions).

Because a specially designed charger will be necessary, please consult the Panasonic Technical Handbook (P001-ND) regarding the charge system • **Flat trickle charge cannot be used** • **Excellent Discharge Characteristics:** Since the internal resistance of nickel-metal hydride batteries is low, continuous high-rate discharge up to 3C (10C for 4/5SC, SC) is possible in the same way as for Ni-Cad batteries. • **Excellent Reliability:** Self-discharge performance is the same or better than that of nickel-cadmium batteries. In addition, charging batteries after extended storage restores original battery capacity. Battery safety has also been improved and verified through testing under a wide range of conditions of use.

Applications:

- Communication • Office Automation • Audio Visual Equipment • Other High-Tech Products.

Caution for Safety:

- Improper usage may cause battery liquid leakage, heat generation or explosion, resulting in equipment failure or injury • Do not disassemble or rework the battery • Do not solder the battery directly • Do not use new batteries together with old batteries, or different type batteries mixed together
- Follow the specified charge conditions.

"H" Type:

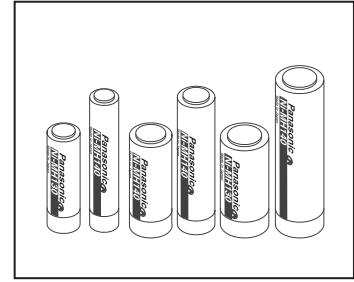
- Improved low rate charge characteristics at higher temperatures.
- Ideal for back-up applications (with appropriate charge control circuitry).

Notes:

- **Battery Packs made with NiMH Cells include a thermostat from Texas Instrument.**
- **Nickel-metal hydride batteries are not a drop-in replacement for Ni-Cad batteries.**
- **Recycling information available on Digi-Key website.**
- **See following page for Battery Pack information.**

It is the responsibility of each user to ensure that each battery application system is adequately designed safe and compatible with all conditions encountered during use, and in conformance with existing standards and requirements.

Digi-Key is not approved by any state or federal agency as an authorized supplier of product for medical, life support or life sustaining devices or systems.



P001-ND NiMH Technical Handbook \$2.95

Size	(V)	Capacity C/5 (mAh)	Dimensions Inch (mm) Diameter x Height	Weight▲ oz. (gram)	Std. Chg. @ 16 hrs. (mA)	(Control Req.) Quick Charge (mA)	Digi-Key Part No.	(Regular Version)			Digi-Key Part No.	(Solder Tabbed Version)			Panasonic Part No.
								1	Pricing 10	Carton		1	Pricing 10	Carton	
AAA	1.2	700	0.41 x 1.75 (10.5 x 44.5)	0.46 (13)	70	650	P213-ND†	2.88	25.88	2380.50/1380	P213T-ND	3.18	26.58	2628.90/1380	HHR-70AAA88
AAA	1.2	700	0.41 x 1.75 (10.5 x 44.5)	0.42 (12)	70	450	P008-ND	3.33	29.93	2753.10/1380	P008T-ND	3.63	32.63	3001.50/1380	HHR-75AAA
4/5AA	1.2	1150	0.57 x 1.69 (14.5 x 43.0)	0.81 (23)	115	1150	P013-ND†	3.53	31.73	1692.00/800	P013T-ND	3.83	34.43	1836.00/800	HHR-120AA
AA	1.2	1500	0.57 x 1.97 (14.5 x 50.0)	0.92 (26)	150	1500	P015-ND†	3.60	32.40	1728.00/800	P015T-ND	3.80	34.20	1824.00/800	HHR-150AA
AA	1.2	1550	0.57 x 1.97 (14.5 x 50.0)	0.95 (27)	155	1500	P060-ND	4.00	36.00	1920.00/800	P060T-ND	4.30	38.70	2064.00/800	HHR-160AA
AA	1.2	2000	0.57 x 1.99 (14.5 x 50.5)	1.02 (29)	200	1200	P220-ND	4.48	40.28	2148.00/800	P220T-ND	4.78	42.98	2292.00/800	HHR-210AA
4/5A	1.2	2000	0.67 x 1.71 (17.0 x 43.5)	1.20 (34)	200	2000	P010-ND†	5.35	48.15	1733.40/540	P010T-ND	5.65	50.85	1830.60/540	HHR-200A
A	1.2	2100	0.67 x 1.97 (17.0 x 50.0)	1.34 (38)	210	2100	P017-ND†	6.20	55.80	2678.40/720	P017T-ND	6.50	58.50	2808.00/720	HHR-210A
4/3A	1.2	3700	0.67 x 2.64 (17.0 x 67.0)	1.87 (53)	370	2000	P018-ND†	7.43	66.83	1603.80/360	P018T-ND	7.73	69.53	1668.60/360	HHR-380A
4/3A	1.2	4200	0.72 x 2.64 (18.2 x 67.0)	2.12(60)	420	2000	P214-ND†	9.83	88.43	2358.00/300	P214T-ND	10.13	91.13	2430.00/300	HHR-450A
4/5SC	1.2	2000	0.91 x 1.34 (23.0 x 34.0)	1.48 (42)	200	2000	P020-ND†	6.88	61.88	1980.00/480	P020T-ND	7.18	64.58	2066.40/480	HHR-20SCPY14
SC	1.2	2450	0.91 x 1.69 (23.0 x 43.0)	1.94 (55)	260	2600	P641-ND	6.35	57.15	1828.80/480	P641T-ND	6.35	57.15	1828.80/480	HHR-26SCPY01
SC	1.2	3000	0.91 x 1.69 (23.0 x 43.0)	1.94 (55)	300	3000	P021-ND†	9.20	82.80	2649.60/480	P021T-ND	9.50	85.50	2736.00/480	HHR-30SCPY20
D	1.2	6500	1.30 x 2.39 (33.0 x 60.8)	6.00 (170)	650	6500	P019-ND†	23.53	211.73	1882.00/100	P019T-ND	23.83	214.43	1906.00/100	HHR-650D
D	1.2	8250	1.30 x 2.40 (33.0 x 61.0)	6.00 (170)	900	4500	P640-ND	24.23	218.03	1938.00/100	P640T-ND	24.53	220.73	1962.00/100	HHR-900DA01
"H" Type															
AAA	1.2	500	0.41 x 1.75 (10.5 x 44.5)	0.46 (13)	50	250	P634-ND†	2.98	26.78	2463.30/1380	P634T-ND	3.28	29.48	2711.70/1380	HHR-60AAA
A	1.2	1900	0.67 x 1.97 (17.0 x 50.0)	1.34 (38)	210	—	P635-ND†	6.85	61.65	1479.60/360	P635T-ND	7.15	64.35	1544.40/360	HHR-210AH
A	1.2	3200	0.72 x 2.64 (18.2 x 67.0)	2.12 (60)	330	1650	P636-ND†	11.33	101.93	4077.00/600	P636T-ND	11.63	104.63	4185.00/600	HHR-330APH
A	1.2	3500	0.72 x 2.64 (18.2 x 67.0)	2.12 (60)	370	1750	P637-ND†	11.38	102.38	4095.00/600	P637T-ND	11.68	105.08	4203.00/600	HHR-370AH
SC	1.2	2500	0.91 x 1.69 (23.0 x 43.0)	1.94 (55)	250	1250	P638-ND†	10.08	90.68	2901.60/480	P638T-ND	10.38	93.38	2988.00/480	HHR-250SCH
C	1.2	3100	1.02 x 1.97 (25.8 x 50.0)	2.82 (80)	300	1500	P639-ND†	9.08	81.68	2776.95/510	P639T-ND	9.38	84.38	2868.75/510	HHR-300CH

† Non-extending positive terminals. ▲ See "Ordering Information" for note on shipping charges on prepaid orders. ‡ Use dT/dT charge termination method.

Energizer® Nickel-Metal Hydride Chargers and Rechargeable Batteries



Equipped with intelligent features such as safety timers, temperature monitors and trickle charge technologies, these chargers are the smart way to keep plenty of energy on hand. Energizer is the leader in rechargeable technology, offers a complete line of high capacity batteries and technologically advanced chargers to fit any lifestyle. These batteries are engineered to work with your most advanced, high-drain devices such as digital cameras, PDAs, hand-held games, portable CD players and MP3 players. Since they are renewable and reusable, Energizer Rechargeable batteries work hard for you.

Note: Recycling information available on Digi-Key website.

Digi-Key is not approved by any state or federal agency as an authorized supplier of product for medical, life support or life sustaining devices or systems.

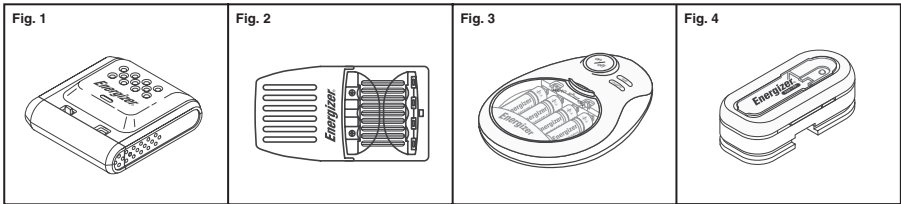


Fig.	Size	Capacity (mAh)	Charge Time	Dimensions Inch (mm)	Digi-Key Part No.	Price Each	Energizer Part No.
Chargers - RoHS Compliant							
1	AA/AAA(4)	2,500/850	4.5 - 8 hours	3.268 x 2.992 x 1.181 (83 x 76 x 30)	N310-ND	14.88	CHDCWOB
2	AA/AAA(4)	2,200/700	20 minutes	1.575 x 5.157 x 3.071 (40 x 131 x 78)	N312-ND†	45.84	CH15MNC4
3	AA/AAA(4)	2,500/900	5.7 - 9 hours	5.236 x 3.504 x 1.260 (133 x 89 x 32)	N314-ND	31.46	CHFMWB-4
4	AA/AAA(2)	2,500/900	1.5 - 5.5 hours	1.299 x 3.976 x 1.575 (33 x 101 x 40)	N315-ND	20.00	CHUSBWB-2
5	AA/AAA/9V/C/D	—	3 - 7 hours	2.835 x 7.992 x 4.370 (72 x 203 x 111)	N316-ND	39.98	CHFC

Size	(V)	Capacity C/5 (mAh)	Dimensions Inch (mm) Diameter x Height	Weight▲ oz. (gram)	Digi-Key Part No.	(Regular Version)			Digi-Key Part No.	(Solder Tabbed Version)			Energizer Part No.
						1	Pricing 10	Carton		1	Pricing 10	Carton	
Batteries													
AAA	1.2	850	0.413 x 1.752 (10.50 x 44.50)	0.5 (13)	N704-ND	2.78	24.98	1476.30/1,000	—	—	—	—	NH12VP
AA	1.2	2,450	0.571 x 1.988 (14.50 x 50.50)	1.1 (30)	N703-ND	4.08	36.68	1173.60/480	N703T-ND	4.38	39.38	1260.00/480	NH15VP
C	1.2	2,500	26.2 x 1.969 (26.20 x 50.0)	2.3 (66)	N702-ND‡	15.33	82.76/6	294.24/24	N702T-ND‡	15.63	84.38/6	300.00/24	NH35BP-2
D	1.2	2,500	1.346 x 2.421 (34.20 x 61.50)	2.6 (73)	N701-ND‡	15.33	82.76/6	294.24/24	N701T-ND‡	15.63	84.38/6	300.00/24	NH50BP-2
9V	7.2	150	1.909 x 0.689 x 26.5 (48.50 x 17.50 x 26.50)	1.5 (42)	N705-ND	10.88	97.88	1957.50/225	—	—	—	—	NH22VP

‡ Package of two ▲ See "Ordering Information" for note on shipping charges on prepaid orders. † Includes 4AA 2200mAh NiMH Batteries

More Product Available Online: www.digkey.com

Toll-Free: 1-800-344-4539 • Phone 218-681-6674 • Fax: 218-681-3380

(T091) 2335