

Keywords: PowerCap, surface-mount package

APPLICATION NOTE 507

PowerCap Package Allows for Density Upgrades, Surface Mount Assembly

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Abstract: This application note provides an overview of the PowerCap product line. The PowerCap products allows surface-mounting of the component base, while keeping the temperature sensitive crystal and/or battery in a separate, snap-on assembly.

Memory Densities from 8k x 8 through 512k x 8 in the Same Footprint

The PowerCap package provides for an easy memory density upgrade without having to change the PCB hardware layout. When designing this package into a system, the higher order address signals should be connected to the package so that a higher density NV RAM can be added to the system without hardware modifications. All three family types have power, ground, address, data, and control signals on the same pins. Depending on the family type, pins 1, 4, 33, and 34 have other functions associated with them.

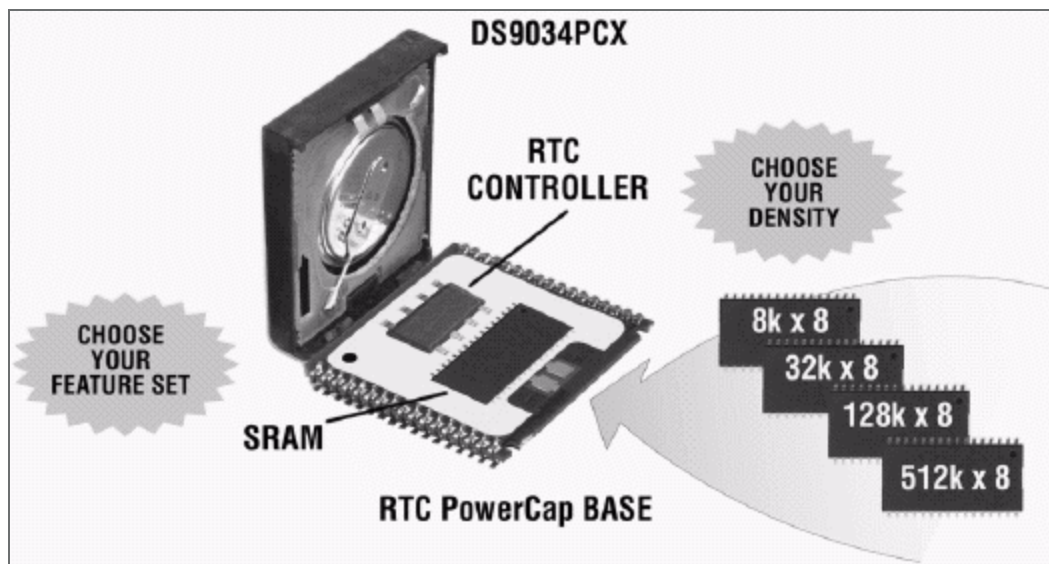


Figure 1. Powercap and module base generic diagram.

Table 1. Part numbers by family and density

Phantom Clocks	Watchdog Clocks	Bytewide Clocks	Bytewide NV SRAM	NV SRAM Density (Bytes)	Addresses Required
	DS1386-8	DS1643		8k	A12-A0
DS1553		DS1743		8k	A12-A0
DS1244	DS1386-32	DS1644	DS1230	32k	A14-A0
DS1544		DS1744	DS1330	32k	A14-A0
DS1248	DS1486	DS1646	DS1245	128k	A16-A0
	DS1556	DS1746	DS1345	128k	A16-A0
DS1251		DS1647	DS1250	512k	A18-A0
	DS1557	DS1747	DS1350	512k	A18-A0

The two-piece assembly protects the lithium battery, contained in the PowerCap (upper half) from the high temperatures of reflow soldering. The module base (lower half) is a small PCB with surface-mount leads, SRAM, and controller ICs. After the module base is surface-mounted, the PowerCap is snapped onto the base to complete the module.

The PowerCap is ordered separately from the base. The DS9034 PowerCap contains a battery for bytewide module bases. The DS9034PCX contains a battery and crystal to operate the real-time clock in the clock bases.

PowerCap	Module Base
DS9034PC	Bytewide NV SRAM
DS9034PCX	Bytewide Clock
DS9034PCX	Phantom Clock
DS9034PCX	Watchdog Clock

Related Parts		
DS1244	256k NV SRAM with Phantom Clock	Free Samples
DS1248	1024K NV SRAM with Phantom Clock	Free Samples
DS1251	4096K NV SRAM with Phantom Clock	Free Samples
DS1386	RAMified Watchdog Timekeeper	
DS1486	RAMified Watchdog Timekeeper	
DS1553	64kB, Nonvolatile, Year-2000-Compliant Timekeeping RAM	Free Samples
DS1554	256k Nonvolatile, Y2K-Compliant Timekeeping RAM	Free Samples
DS1556	1M, Nonvolatile, Y2K-Compliant Timekeeping RAM	Free Samples
DS1557	4Meg, Nonvolatile, Y2K-Compliant Timekeeping RAM	Free Samples
DS1643	Nonvolatile Timekeeping RAM	Free Samples

DS1644	Nonvolatile Timekeeping RAM	Free Samples
DS1646	Nonvolatile Timekeeping RAM	Free Samples
DS1647	Nonvolatile Timekeeping RAM	Free Samples
DS1743	Y2K-Compliant, Nonvolatile Timekeeping RAMs	Free Samples
DS1743	Y2K-Compliant, Nonvolatile Timekeeping RAMs	Free Samples
DS1744	Y2K-Compliant, Nonvolatile Timekeeping RAMs	Free Samples
DS1746	Y2K-Compliant, Nonvolatile Timekeeping RAMs	Free Samples
DS1747	Y2K-Compliant, Nonvolatile Timekeeping RAMs	Free Samples
DS3065WP	3.3V, 8Mb, Nonvolatile SRAM with Clock	
DS9034PC	PowerCap	Free Samples
DS9034PCX	PowerCap with Crystal	Free Samples

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