

A698x family

High-performance automotive synchronous DC-DC converters



Step-down regulator featuring output current up to 2 A, switching frequency up to 2 MHz, 30 μ A consumption

ST is developing a complete family of step-down monolithic synchronous DC-DC converters, compliant with car battery voltage, dedicated to automotive applications. These devices provide continuous output current up to 2 A and a wide input voltage range from 4 to 38 V. High flexibility is given by several adjustable parameters, including output voltage, switching frequency and synchronization capability.

Moreover, the extremely low operating I_Q makes them suitable for many automotive applications, such as navigation systems, dashboards, infotainment and car body equipment.

KEY FEATURES

- Input voltage range: 4 to 38 V
- Switching frequency: up to 2 MHz
- Output current: up to 2 A
- Operating I_Q : 30 μ A
- Synchronous rectification
- Embedded current and voltage protection

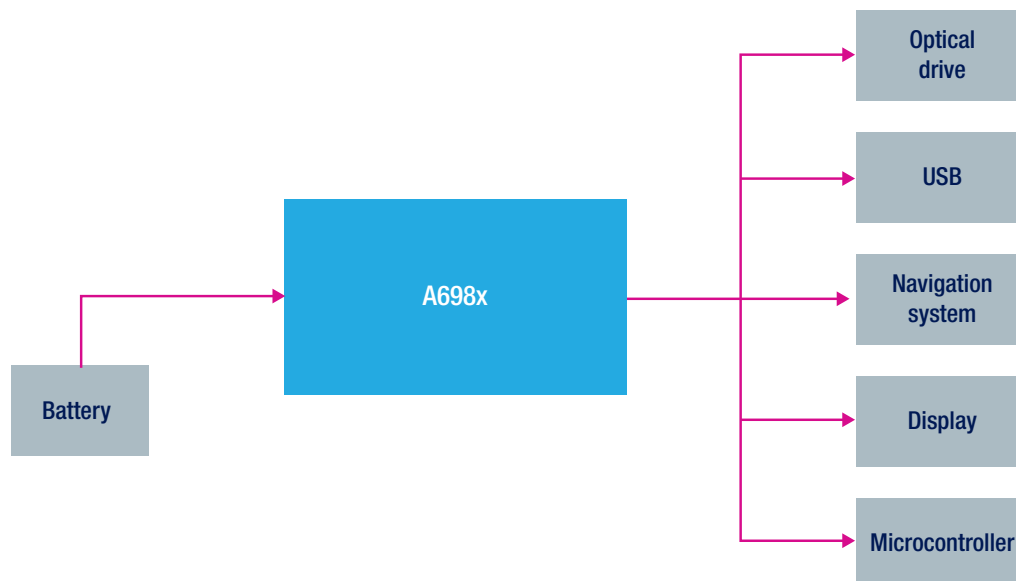
KEY BENEFITS

- High efficiency and compactness
- High design flexibility
- Reduced BOM cost
- Power saving
- Automotive qualified
- High robustness and reliability

MAIN APPLICATIONS

- Car body modules
- Navigation systems
- Car radios
- Infotainment

A698X BLOCK DIAGRAM



DEVICE SUMMARY

Part number	A6984*	A6985F	A6986F	A6986
Package	DFN 4x4 10L	HTSSOP16	HTSSOP16	HTSSOP16
Input voltage range (V)	4.5 to 36	4 to 38	4 to 38	4 to 38
Max output current (A)	0.4	0.5	1.5	2
Operating quiescent current (µA)	100	30	30	30
RDS(on) HS/LS (Ω)	1.3 / 1.0	Rdson: 0.36 / 0.15	Rdson: 0.18 / 0.15	Rdson: 0.18 / 0.15
Output voltage range (V)	3.3/0.9 to 0.95 V _{IN}	3.3/5/0.85 to V _{IN}	3.3/5/0.85 to V _{IN}	0.85 to V _{IN}
Switching frequency (kHz)	250 to 600	250 to 2000	250 to 2000	250 to 2000
External switching frequency (kHz)	N.A.	up to 1400	up to 1400	up to 1400
Other features	Enable pin, power good	Enable pin, adjustable soft start and reset	Enable pin, adjustable soft start and reset	Enable pin, adjustable soft start and reset
Operating junction temperature (Tj °C)	-40, 150	-40, 150	-40, 150	-40, 150
Low noise/low consumption selection mode	Yes	Yes	Yes	Yes

* in development



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