

# A798x, A597x switching regulators for car power management



## Complete offer of compact monolithic buck switching regulators for automotive applications up to 38 V and 3 A

To satisfy the specific requirements of the automotive market, ST offers a comprehensive portfolio of monolithic buck asynchronous regulators, qualified in compliance with AEC-Q100 specifications. The low  $R_{DS(on)}$  (typical value of 200 m $\Omega$ ) and the fast conduction times of the power element, combined with the high switching frequency (programmable up to 1 MHz), ensure the best trade-off between application efficiency and compactness. The high thermal performance of SO8 and HSOP8 packages, together with their compactness make them ideal solutions for in-vehicle applications.

### KEY FEATURES

- AEC-Q100 qualified
- Operating input voltage range from 4 to 38 V
- Output voltage can be adjustable from 0.6 V
- Up to 3 A DC output current
- 250 kHz to 1 MHz programmable switching frequency
- Synchronization function
- Inhibit/Enable for zero current consumption
- P-MOS high-side with 100 % duty cycle for cold crank events
- Voltage feed-forward
- Zero load current operation

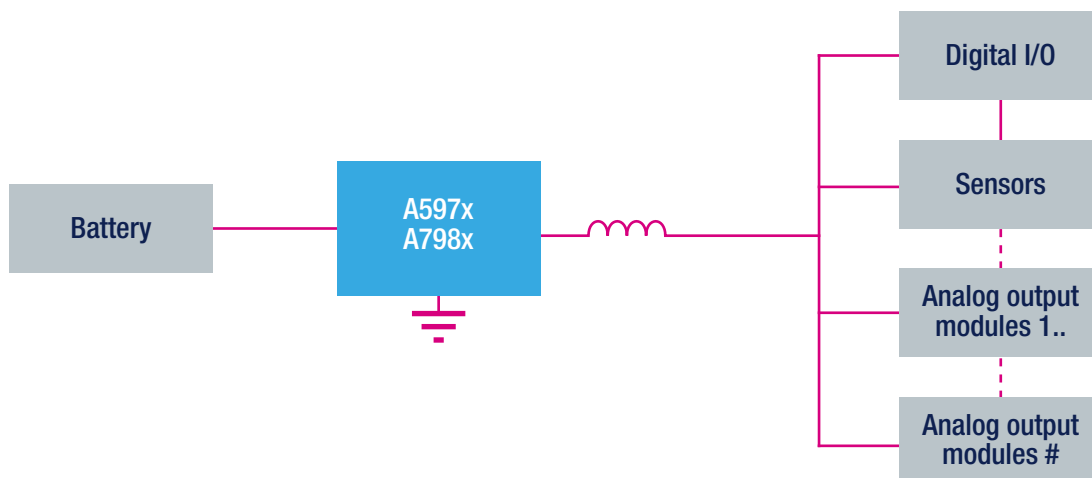
- Overcurrent, overvoltage and thermal protection

- Small SO-8 and HSOP8 packages

### IDEAL FOR

- Body: air conditioning, wiper control, power windows, seat control and car alarms
- Car infotainment: car radios, navigation systems and telematics boxes
- Power train: engine cooling and management and throttle driving
- Safety and chassis: airbag systems, anti-lock brakes, traction control, electric power steering and suspension

## BLOCK DIAGRAM



## DEVICE SUMMARY

Part number	Package	Min. input voltage (V)	Max. input voltage (V)	Absolute maximum rating (V)	Min. input voltage (V)	Max. output current (A)	Typ. quiescent current (mA)	Inhibit / Enable Pin	Soft-start	Switching frequency (Hz)	External switching frequency (Hz)
A5975D	PowerSO-8	4	36	40	1.235	3	2.5	INH	N	250	250 - 700
A5975AD	PowerSO-8	4	36	40	1.235	2.5	2.5	INH	N	500	500 - 700
A5974D	PowerSO-8	4	36	40	1.235	2.5	2.5	INH	N	250	250 - 700
A5974AD	PowerSO-8	4	36	40	1.235	2	2.5	INH	N	500	500 - 700
A5973D	PowerSO-8	4	36	40	1.235	2	2.5	INH	N	250	250 - 700
B5973D	PowerSO-8	4	36	40	1.235	2	2.5	INH	N	250	250 - 700
A5973AD	PowerSO-8	4	36	40	1.235	1.5	2.5	INH	N	500	500 - 700
A5972D	SO-8	4	36	40	1.235	1.5	2.5	No	N	250	250 - 700
A5970D	SO-8	4	36	40	1.235	1	2.5	INH	N	250	250 - 700
A5970AD	SO-8	4	36	40	1.235	1	2.5	INH	N	500	500 - 700
A7986A	PowerSO-8	4.5	38	45	0.6	3	2.4	EN	Y	250 - 1000	250 - 1000
A7985A	PowerSO-8	4.5	38	45	0.6	2	2.4	EN	Y	250 - 1000	250 - 1000
A6902D	SO-8	8	36	40	1.235	1	2.5	No	N	250	-

