4-2 channels High Side Driver with STi²Fuse protection for automotive power distribution applications and standby ON functionality with companion chip (XVxF-L99SPx-VNF9Dx).

R.Mistretta

Smart mobility – Spoke 6,WP1.4.3

SAMOTHRACE 2nd Year: Experimental Prototypes Demo Showcase

SAMOTHRACE PROJECT ECS00000022

March 10th 2025

Finanziato dall'Unione europea NextGenerationEU

Ministero dell'Università e della Ricerca

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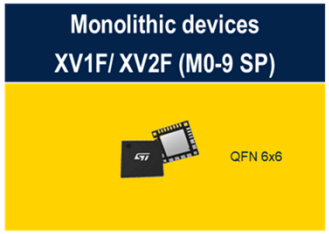
High Side Driver with STi²Fuse protection

- Innovative Device is made by using VIPower technology, and **embeds the ST proprietary i²t functionality**, featuring an intelligent circuit breaking to protect PCB traces, connectors, and wire harnesses from overheating by assuring the proper power delivery rate.
- STi2Fuse for **Power distribution** .
- No traditional fuse on power distribution box;
  in the past each fuse had to be sized according to the wire harnesses.
  A custom configuration and diagnostic is possible.



Revenue forecast 3 years	2026	2027	2028
STi²Fuse [M$]	13	25	50

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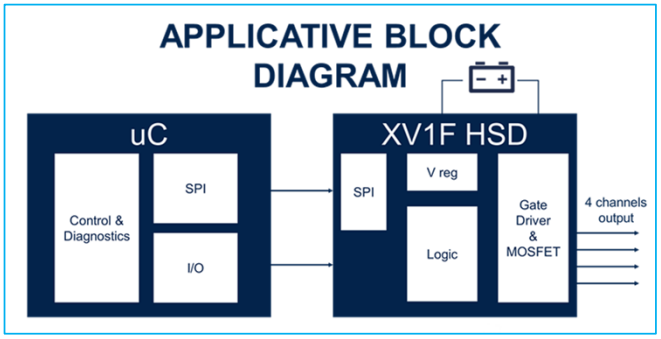
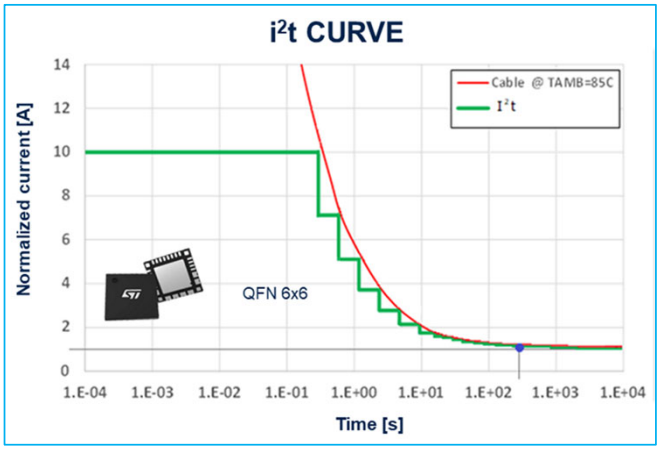
High Side Driver with STi²Fuse protection

- ST proprietary **i²t** functionality
- 13 current levels step for Inom
- 13 different choice for Tnom

- Test bench experimental result:
  - Inom = 6A Tnom 300s
  - The current that flow in the wiring harness is 13.41A with trip Time 2.34s





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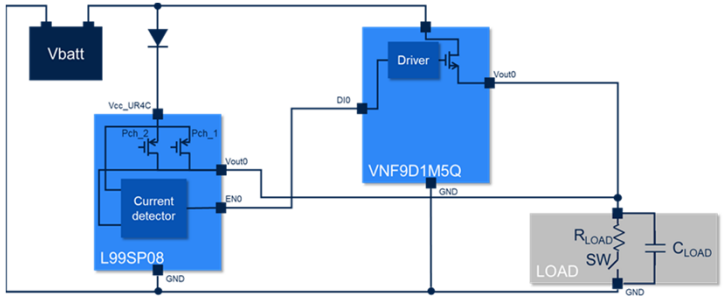
STi²Fuse and standby on with companion chip

DEVELOPMENT PLAN UNDER SAMOTHRACE ECOSYSTEM

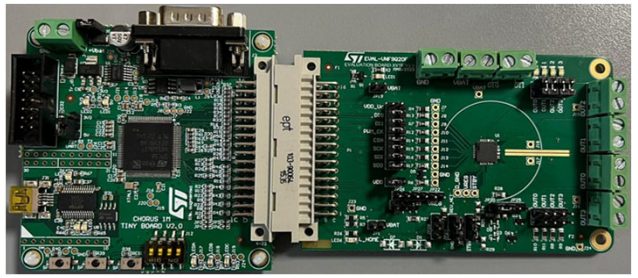
- Current Project status:
  - XVxF Commercial Maturity (MAT 30)
  - VH84 Design & Application validated (MAT 20)
  - UR4C Waiting for last silicon release, validation on going.

- **i²t** IP fully validated
- Eval board fully debugged

- Current **TRL: 6**



Standby-on application diagram



MCU board + evaluation XVxF

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NEXT STEP UNDER SAMOTHRACE ECOSYSTEM

- Commercial maturity MAT 30
  - April 2025 (VNF9Dx-VH84)
  - End of 2025 (L99Spx-Ur4c)

- **TRL: 8**

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