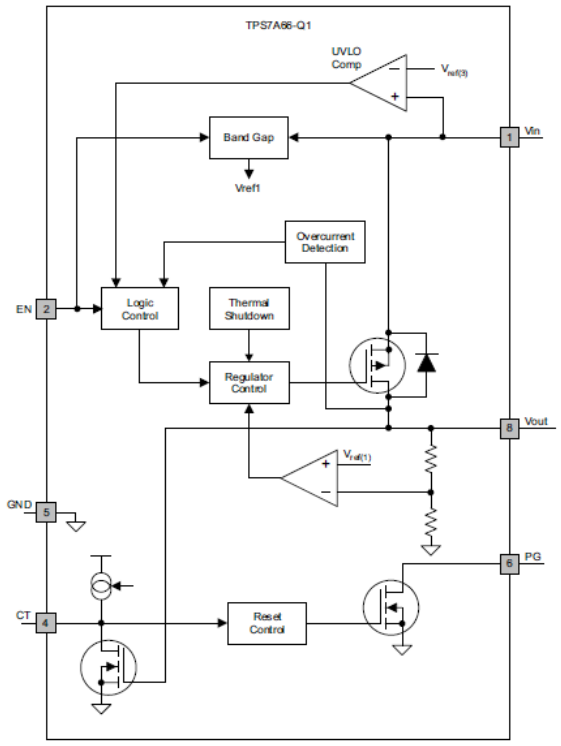
Functional Safety FIT Rate, Failure Mode Distribution TPS7A66-Q1

High-Voltage Ultralow-I(q) Low-Dropout Regulator

Functional Block Diagram



Failure Rate Mission Profile (1)	Per 10^9 Hours (FIT)
Total FIT Rate	8
Die FIT Rate	4
Package FIT Rate	4

Failure Modes	Failure Mode Distribution (%)
VOUT high (following VIN)	15%
VOUT not in specification – voltage or timing	60%
VOUT low (no output)	15%
PG false trigger, fails to trigger	5%
Short circuit any two pins	5%

(1)Failure Rate, Mission Profile and Failure Modes Distribution

The failure rate and mission profile information comes from the Reliability data handbook IEC TR 62380 using the reliability modeling for Integrated circuits
Mission Profile Automotive Control IEC TR 62380
Power dissipation 250mW
Climate type: World-wide Table 8
Package factor lambda 3 Table 17b
Substrate Material: FR4
EOS FIT rate assumed = 0

The failure mode distribution estimation comes from the combination of common failure modes listed in standards such as IEC 61508 and ISO 26262, the ratio of sub-circuit function size and complexity and from best engineering judgment.

TPS7A66-Q1 are catalog products and not compliant to ISO-26262 standards.

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