OPTIREG™ linear

Q4/2023

General purpose

General Purpose

High performances

High Performance

Trackers

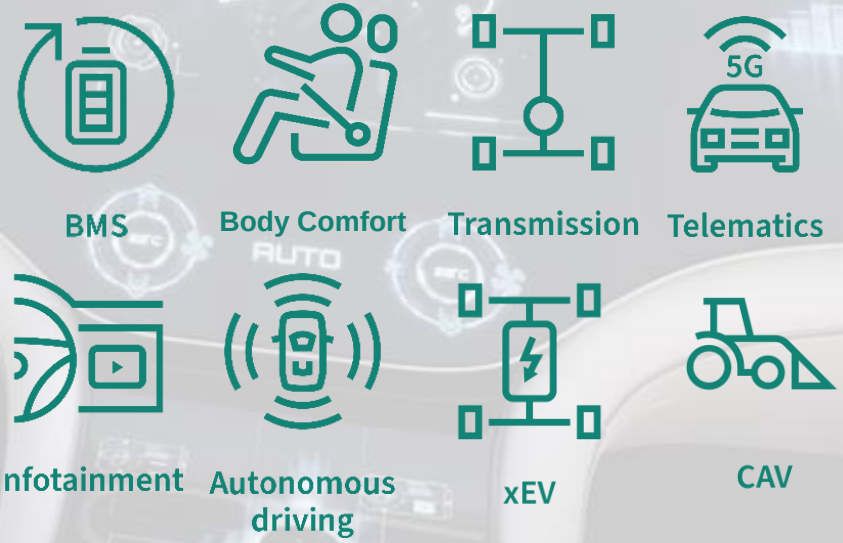
Trackers

Linear post regulators

Linear Post Regulators

Application Specifics

Application Specifics



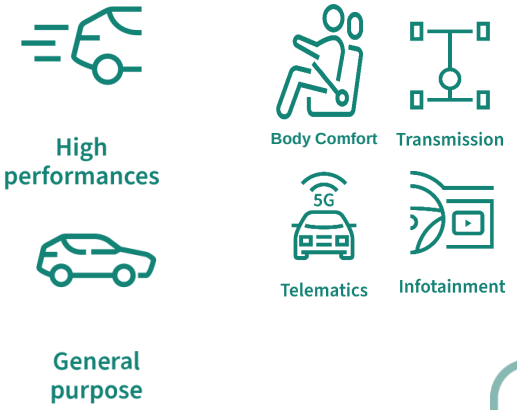
Click on Family logo to access its web page

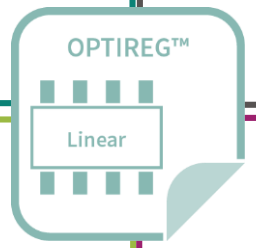
OPTIREG™ linear: for every IC and each target application, we've got the suitable linear voltage regulator (LDO) for you!

High Performance General Purpose

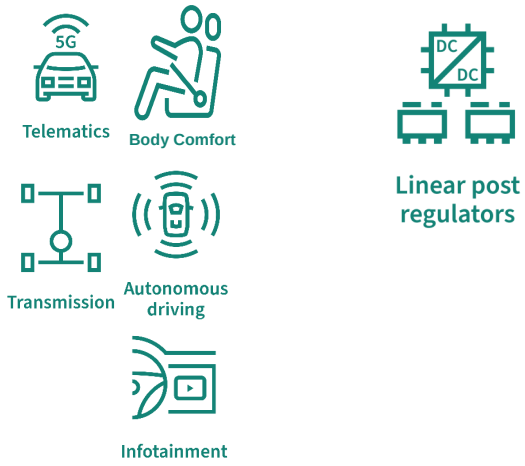
Best suited for supplying :

- Microcontrollers
- Transceivers (CAN,LIN,…)
- Sensors (on-board)
- Actuator ICs
- Stand-by supply
- Low-load LEDs
- Microphones





Post Regulators



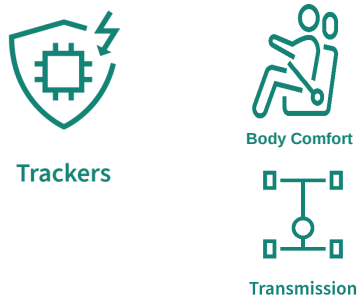
Best suited for supplying :

- Radar (MMIC)
- Flash Memory
- RAM Memory
- Camera
- SoC core supply
- I/O supply
- Ethernet PHY
- Cluster supply
- Low noise supply

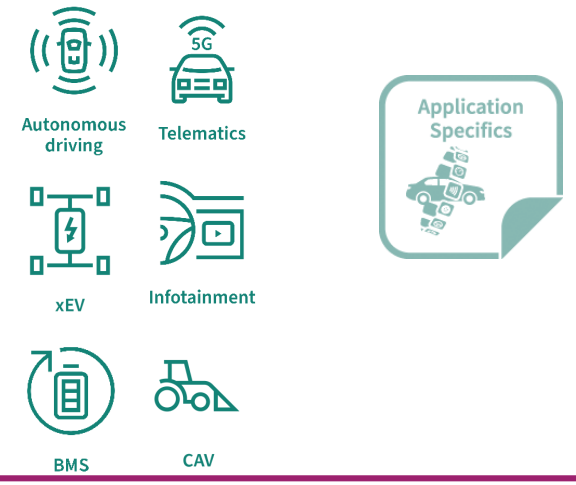
Trackers

Best suited for supplying :

- Sensors
- Microphones
- Satellite ECUs (off-board)
- Small lamps (LED)
- Protected loads



Application Specific



Best suited for supplying :

- Antenna (with current Sense)
- Surround-view Camera
- Battery Monitoring/Management
- 24V Standby supply
- Monitoring IC

Click on Family logo to access its web page

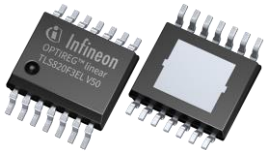
What is new in the OPTIREG™ linear portfolio?

High Performance

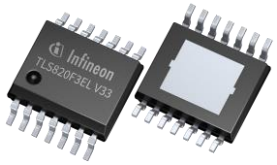
TLS820F3xx

TLS850F3xx

High performances



TLS820F3EL V50



TLS820F3EL V33

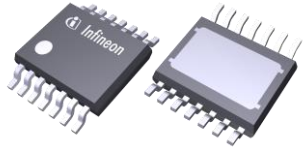
- Low dropout linear voltage regulator with watchdog and reset
- Ultra low current consumption: typically 26 µA, power saving for battery
- Separate outputs for reset and watchdog

High Performance

TLS8x0A4xx

High performances

Low quiescent current (I_q)



- Ultra low quiescent current, typically 4.3 µA at light loads
- Wide input voltage range from 3.7 V to 40 V
- Low dropout voltage, typically 190 mV, at output current below 100 mA

Application Specific

TLF4477-3LA

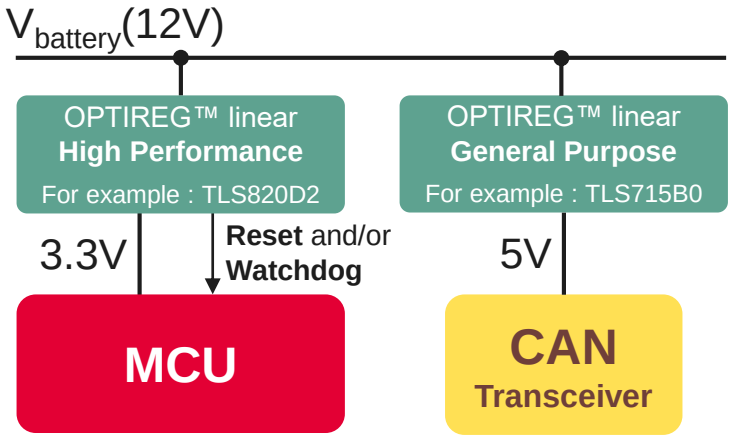
Application Specifics

Car antenna

- Designed to supply active antenna
- Dual channel output
- Smaller package, TSON-14, saves board space.

General Purpose and High Performance portfolios perfectly complement each other, giving you a full flexibility

Typical use case



2 product families

1 Mission

Best fit LDO to supply your MCU and CAN Transceiver

High performances	General purpose
TL**S8**xx	TLE4**2**xxx
TL**F80511**	TLE4**4**xxx
	TLE4**6**xxx
	TLE**7xxx**
	TL**F4949**
	TL**S71**x

Target applications

Powertrain · Body Comfort · Chassis and Transmission · 5G Telematics · Infotainment · Transmission

Topology

12V / 12V Battery

Best suited to supply

Micro-controller

Transceiver
CAN
CAN PN
CAN FD

Also suitable to supply

- Sensors (on-board)
- Actuator ICs
- Stand-by supply
- Low-load LEDs
- Microphones

Feature set

Always On · Enable · Reset

Key strengths

Fast Response · Ultra-low Drop-out (V_{in}, V_{out}) · Very good Heat dissipating package · Reduced cost

Temperature Range

AEC-Q100 Grade 1 (T_j = 150°C)

Unique differentiators

Infineon Automotive Quality · Current Limitation (I_{out}) · Over-Temperature shutdown

General Purpose or High Performance ?
Which product family is best for my application/project?

General purpose | High performances

The switch depends on

Package Size → **Performance** → **Total Solution cost**

General Purpose

Good

- Well-established Reliability
- Good device performance
- No new product developments for this family

TLE42xxx
TLE44xxx
TLE46xxx
TLE7xxx
TLF4949
TLS71x

General purpose

High Performance

Best

- Newest Front-end Technology
- Smaller and better Packages
- Enhanced device performance

TLS8xx
TLF80511

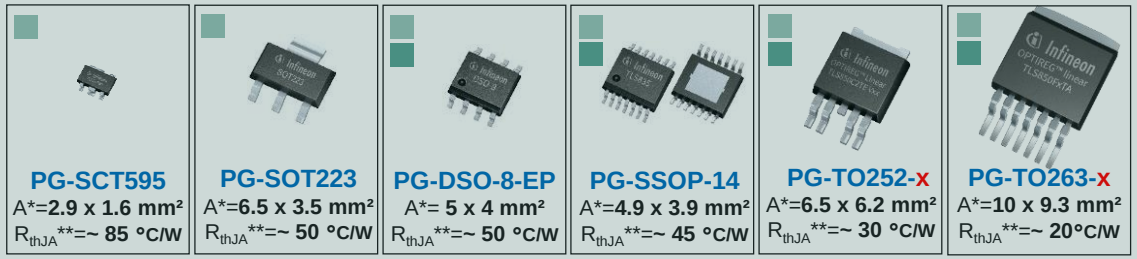
High performances

Key Strengths

General Purpose: Reverse polarity proof; Very good Heat dissipating package

High Performance: Fast Response; Suitable for severe Cranking; Ultra-low Drop-out; Low quiescent current (I_q); Cost saving on passive components; Very good Heat dissipating package

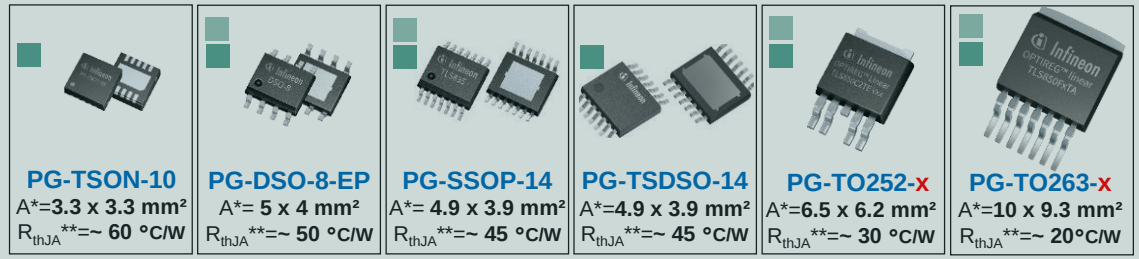
Main Packages



PG-SCT595	PG-SOT223	PG-DSO-8-EP	PG-SSOP-14	PG-TO252-x	PG-TO263-x
A*=2.9 x 1.6 mm²	A*=6.5 x 3.5 mm²	A*= 5 x 4 mm²	A*=4.9 x 3.9 mm²	A*=6.5 x 6.2 mm²	A*=10 x 9.3 mm²
R_{thJA}**=~ 85 °C/W	R_{thJA}**=~ 50 °C/W	R_{thJA}**=~ 50 °C/W	R_{thJA}**=~ 45 °C/W	R_{thJA}**=~ 30 °C/W	R_{thJA}**=~ 20°C/W

-x : **PG-252** and **PG-263** Packages are available in **3-pin**, **5-pin** and **7-pin** variants

Available in: General Purpose; High Performance; Both families



PG-TSON-10	PG-DSO-8-EP	PG-SSOP-14	PG-TSDSO-14	PG-TO252-x	PG-TO263-x
A*=3.3 x 3.3 mm²	A*= 5 x 4 mm²	A*= 4.9 x 3.9 mm²	A*=4.9 x 3.9 mm²	A*=6.5 x 6.2 mm²	A*=10 x 9.3 mm²
R_{thJA}**=~ 60 °C/W	R_{thJA}**=~ 50 °C/W	R_{thJA}**=~ 45 °C/W	R_{thJA}**=~ 45 °C/W	R_{thJA}**=~ 30 °C/W	R_{thJA}**=~ 20°C/W

* **A** = **Body Area** : Length x Width

** R_{thJA} : **Thermal Resistance** Junction to ambient on FR4 2s2p board

OPTIREG™ linear: General Purpose and High Performance
Portfolio of always-on LDOs (without ENABLE)

General purpose | High performances

Always On








PG-SCT595	PG-TSON-10	PG-SOT223	PG-DSO-8-EP	PG-SSOP-14	PG-TSDSO-14	PG-TO252-x	PG-TO263-x
A*=2.9 x 1.6 mm²	A*=3.3 x 3.3 mm²	A*=6-5 x 3.5 mm²	A*=5 x 4 mm²	A*=4.9 x 3.9 mm²	A*=4.9 x 3.9 mm²	A*=6.5 x 6.2 mm²	A*=10 x 9.3mm²
R_{thJA}**= ~ 85°C/W	R_{thJA}**= ~ 60°C/W	R_{thJA}**= ~ 50°C/W	R_{thJA}**= ~ 50°C/W	R_{thJA}**= ~ 45°C/W	R_{thJA}**= ~ 45°C/W	R_{thJA}**= ~ 30°C/W	R_{thJA}**= ~ 20°C/W

* **A** = **Body Area** : Length x Width

** R_{thJA} : **Thermal Resistance** Junction to ambient on FR4 2s2p board

-x :**PG-252** and **PG-263** Packages are available in **3-pin**, **5-pin** and **7-pin** variants

xV **Fixed** V_{OUT} = xV

ADJ **Adjustable** V_{OUT}

Iq Low quiescent current (Iq)

Not For New Design

Device maximum output current ($I_{out,max}$)

100 mA	300 mA	400 mA	500 mA
General purpose			
TLE4264-2G 5V		TLE42744E V50 5V TLE42744GSV33 3.3V TLE42744D Vxx 3.3V 5V	
High performances			
TLS810A1LD Vxx 3.3V 5V Iq	TLS830A4EP V50 5V Iq Coming soon	TLF80511EJ Vxx 3.3V 5V TLF80511TF Vxx 5V TLF80511TC 5V	new TLS850A4TE V50 5V Iq

Alternative Packages

Alternative Packages

Click on the part to access its website

OPTIREG™ linear : General Purpose and High Performance Portfolio of LDOs with ENABLE only (INHIBIT)

General purpose | High performances

Enable

xV **Fixed** V_{OUT} = xV

ADJ **Adjustable** V_{OUT}

SEL 3.3V/5V Selectable V_{OUT}= **5V** or **3.3V**

Iq Low quiescent current (Iq)

Not For New Design







PG-SCT595
A*=**2.9 x 1.6 mm²**
R_{thJA}**= ~ **85°C/W**

PG-TSON-10
A*=**3.3 x 3.3 mm²**
R_{thJA}**= ~ **60°C/W**

PG-SOT223
A*=**6-5 x 3.5 mm²**
R_{thJA}**= ~ **50°C/W**

PG-DSO-8-EP
A*=**5 x 4 mm²**
R_{thJA}**= ~ **50°C/W**

PG-SSOP-14
A*=**4.9 x 3.9 mm²**
R_{thJA}**= ~ **45°C/W**

PG-TO252-x
A*=**6.5 x 6.2 mm²**
R_{thJA}**= ~ **30°C/W**

PG-TO263-x
A*=**10 x 9.3mm²**
R_{thJA}**= ~ **20°C/W**

* **A** = **Body Area** : Length x Width

** R_{thJA} : **Thermal Resistance** Junction to ambient on FR4 2s2p board

:PG-252 and **PG-263** Packages are available in **3-pin**, **5-pin** and **7-pin** variants

Device maximum output current ($I_{out,max}$)

30 mA	50 mA	100 mA	150 mA	350 mA	400 mA	500 mA

General purpose

TLE4296-2G Vxx — 3.3V | 5V

TLE42644G — 5V

TLE42664G — 5V

TLS710B0EJ V50 — 5V

Newer Generation

TLE4266-2G — 3.3V | 5V

TLS715B0EJ V50 — 5V

Newer Generation

TLE42764DVxx — ADJ | 5V

High performances

TLS805B1LD V50 — 5V — Iq

TLS805B1SJV — ADJ — Iq

TLS810B1LD Vxx — 3.3V | 5V — Iq

TLS810B1EJ Vxx — 3.3V | 5V — Iq

Alternative Packages

TLS835B2EL VSE — SEL 5V/3.3V — Iq

TLS835B2ELV — ADJ — Iq

TLS850B0TE Vxx — 3.3V | 5V — Iq

TLS850B0TB Vxx — 3.3V | 5V — Iq

Click on the part to access its website

OPTIREG™ linear : General Purpose and High Performance Portfolio of LDOs with RESET functionality

General purpose | High performances

Low quiescent current (Iq)
EN With ENABLE
AO Always-ON
Reset
xV **Fixed** V_{OUT} = xV
ADJ **Adjustable** V_{OUT}
SEL 3.3V/5V Selectable V_{OUT}= **5V** or **3.3V**
Not For New Design







PG-TSON-10	PG-DSO-8	PG-DSO-8-EP	PG-SSOP-14	PG-DSO-14	PG-TO252-x	PG-TO263-x
A*=3.3 x 3.3 mm²	A*= 5 x 4 mm²	A*=5 x 4 mm²	A*=4.9 x 3.9 mm²	A*=8.65 x 3.9 mm²	A*=6.5 x 6.2 mm²	A*=10 x 9.3mm²
R_{thJA}**= ~ 60°C/W	R_{thJA}**=~ 110°C/W	R_{thJA}**= ~ 50°C/W	R_{thJA}**= ~ 45°C/W	R_{thJA}**= ~ 63°C/W	R_{thJA}**= ~ 30°C/W	R_{thJA}**= ~ 20°C/W

* **A** = **Body Area** : Length x Width

** R_{thJA} : **Thermal Resistance** Junction to ambient on FR4 2s2p board

-x :**PG-252** and **PG-263** Packages are available in **3-pin**, **5-pin** and **7-pin** variants

Device maximum output current ($I_{out,max}$)

100 mA

General purpose

Adj. RES Timing | Fixed RESET Voltage

- TLF4949EJ — AO — 5V
- TLF4949SJ — AO — 5V

Alternative Packages

High performances

Adj. RES Timing | Fixed RESET Voltage

- TLS810D1LD Vxx — 3.3V | 5V — Iq — EN
- TLS810D1EJ Vxx — 3.3V | 5V — Iq — EN

Alternative Packages

150 mA

● Adj. Reset Timing ● Adjustable Reset Voltage

- TLE42694G — AO — 5V
- TLE42694-2EL — AO — 5V
- TLE42694E — AO — 5V
- TLE42994G — AO — 5V
- TLE42694GM — AO — 5V
- TLE42994E — 3.3V | 5V — EN
- TLE42994GM — 5V — EN

Alternative Packages

Newer Generation

350 mA

Adj. RESET Timing | Adj. RESET Voltage

- TLS835D2EL VSE — SEL 5V/3.3V — Iq — EN

450 mA

Adj. RESET Timing | Fixed RESET Voltage

- TLE42754G — AO — 5V
- TLE42754D — AO — 5V

Alternative Packages

500 mA

new

Adj. RESET Timing | Fixed RESET Voltage

- TLS850C2TE Vxx — AO — 3.3V | 5V — Iq

Click on the part to access its website

OPTIREG™ linear : General Purpose and High Performance Portfolio of LDOs with Reset+Watchdog functionality

General purpose | High performances

Reset + Watchdog






PG-DSO-8	PG-DSO-8-EP	PG-SSOP-14	PG-DSO-14	PG-TO252-x	PG-TO263-x
A*= 5 x 4 mm²	A*=5 x 4 mm²	A*=4.9 x 3.9 mm²	A*=8.65 x 3.9 mm²	A*=6.5 x 6.2 mm²	A*=10 x 9.3mm²
R_{thJA}**=~ 110°C/W	R_{thJA}**= ~ 50°C/W	R_{thJA}**= ~ 45°C/W	R_{thJA}**= ~ 63°C/W	R_{thJA}**= ~ 30°C/W	R_{thJA}**= ~ 20°C/W

* **A** = **Body Area** : Length x Width

** R_{thJA} : **Thermal Resistance** Junction to ambient on FR4 2s2p board

-x :**PG-252** and **PG-263** Packages are available in **3-pin**, **5-pin** and **7-pin** variants

xV **Fixed** V_{OUT} = **x**V

SEL 3.3V/5V Selectable V_{OUT}= **5V** or **3.3V**

EN With ENABLE

AO Always-ON

Not For New Design

Device maximum output current ($I_{out,max}$)

180 mA

General purpose

- Adj. RES & WD Timing
- Fixed RESET Voltage
- **TLE4263-2ES** 5V AO

200 mA

General purpose

- **TLE4263GM** 5V AO
- **TLE4263GS** 5V AO
- Alternative Packages: Adj. RES & WD Timing; Fixed RESET Voltage
- **TLE4678-2EL** 5V AO: Adj. RES & WD Timing; Adj. RESET Voltage; Adj. WD Threshold; Separate RES & WD Outputs
- Newer Generation

High performances

- **TLS820F0EL Vxx** 3.3V EN
- Different **Reset** and **Watchdog Timings**: Prog. RESET Timing; Prog. Watchdog Timing; Adj. RESET Voltage; Separate RES & WD Outputs
- **TLS820F3EL Vxx** 3.3V 5V Iq EN (new): Adj. RES & WD Timing; Adj. RESET Voltage; WD ON/OFF; Separate RES & WD Outputs
- Newer Generation

450 mA

General purpose

- Adj. RES & WD Timing; Adj. RESET Voltage; Separate RES & WD Outputs
- **TLE4291E** 5V EN

500 mA

High performances

- **TLS850F0TA Vxx** 5V EN
- **TLS850F1TA V50** 5V EN
- **TLS850F2TA V50** 5V EN
- Different **Reset** and **Watchdog Timings**: Fixed RESET Timing; Fixed Watchdog Timing; Adj. RESET Voltage
- **TLS850F3TU Vxx** 3.3V 5V Iq EN (new): Adj. RES & WD Timing; Fixed RESET Voltage; Watchdog ON / OFF
- Newer Generation

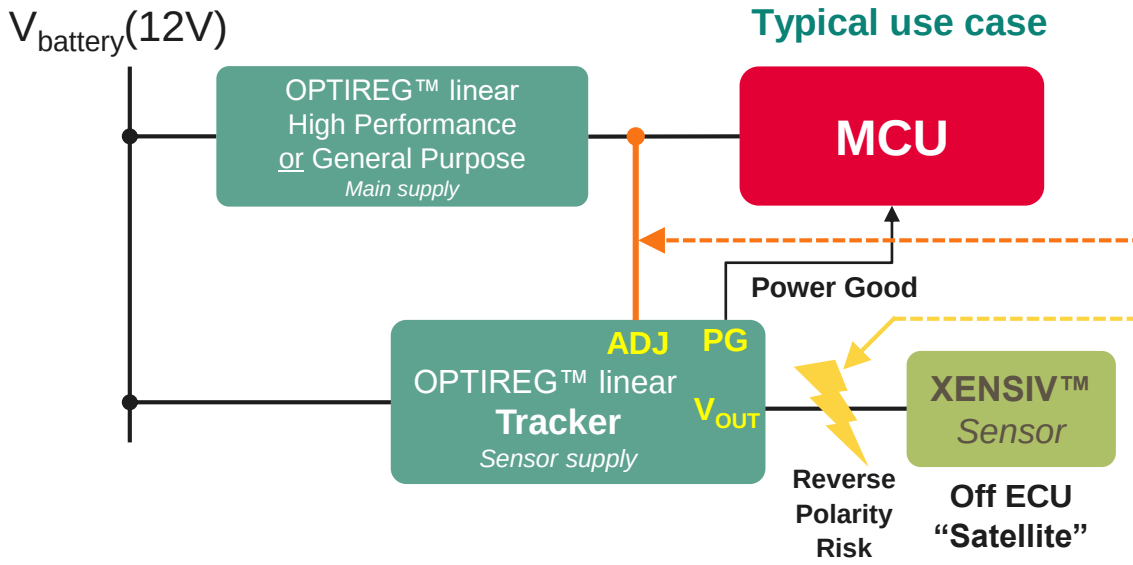
550 mA

General purpose

- Adj. RES & WD Timing; Fixed RESET Voltage
- **TLE4271-2G** 5V EN

Click on the part to access its website

If you need to supply a sensor (off-board), a satellite ECU or a microphone with power, then you need to get a Tracker!



Trackers fulfill 2 functions

Voltage Tracking
Follows the reference with very high accuracy

Protection
Protection against short-circuits, overvoltage or reverse polarity

Trackers

TLS1xx
TLT1xx
TLE425x

Target applications

Powertrain

Body Comfort

Chassis and Transmission

Topology

12V
12V
Battery

Suitable as post-regulator
Pre-Reg.
Post-Reg.

Best suited to supply

Sensor solutions

Microphone

Also suitable to supply

Small lamps (LED)
Loads which need protection

Feature set

Enable

Power Good
V_{out}

Feedback
$V_{OUT} > V_{ADJ}$
IN
OUT
ADJ
FB
GND

Key strengths

Reverse polarity protection

High Accuracy

Soft Start

Fast Response

Temperature Range

AEC-Q100 Grade 1
T_j = 150°C

Extended Temperature Range
T_j = 160°C

Unique differentiators

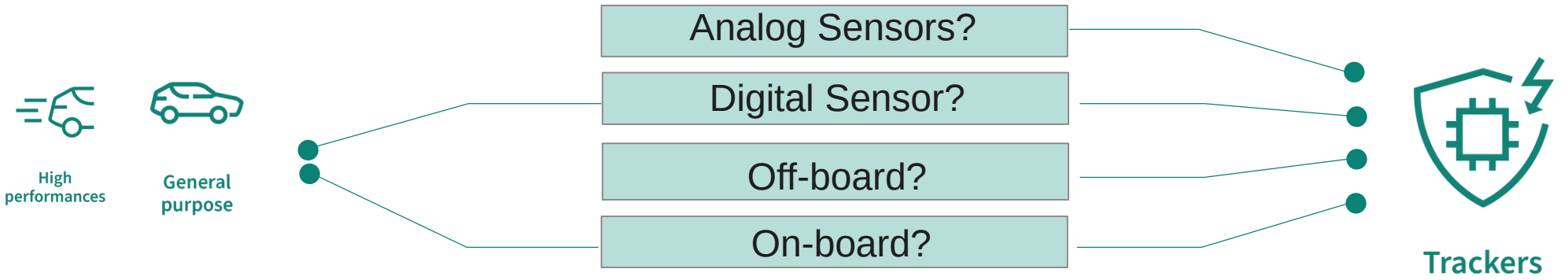
Infineon Automotive Quality

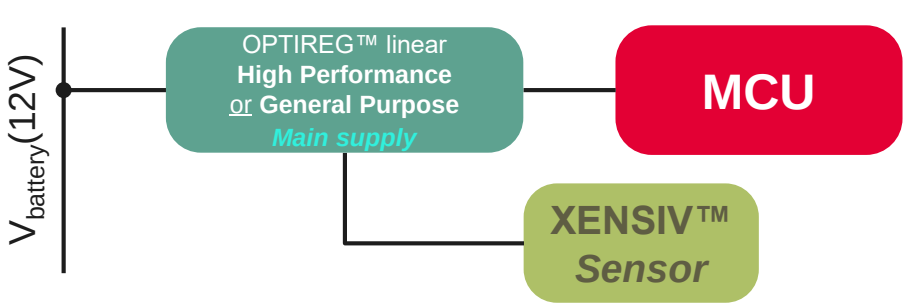
Current Limitation
I_{out}

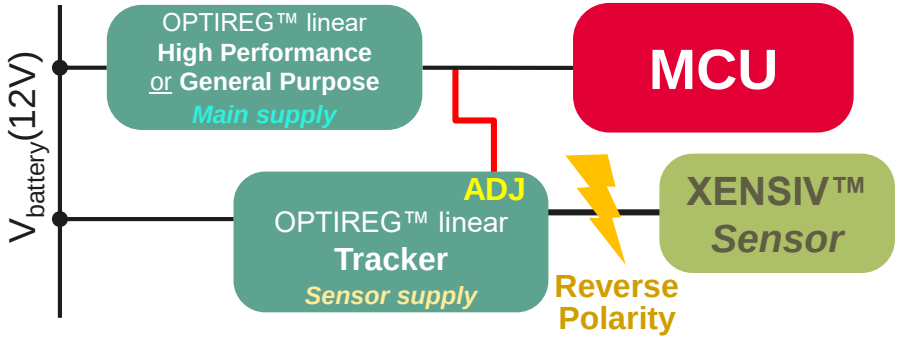
Over-Temperature shutdown
°C

When do I need a Tracker? The different use cases for Trackers and battery-connected LDOs.

Trackers



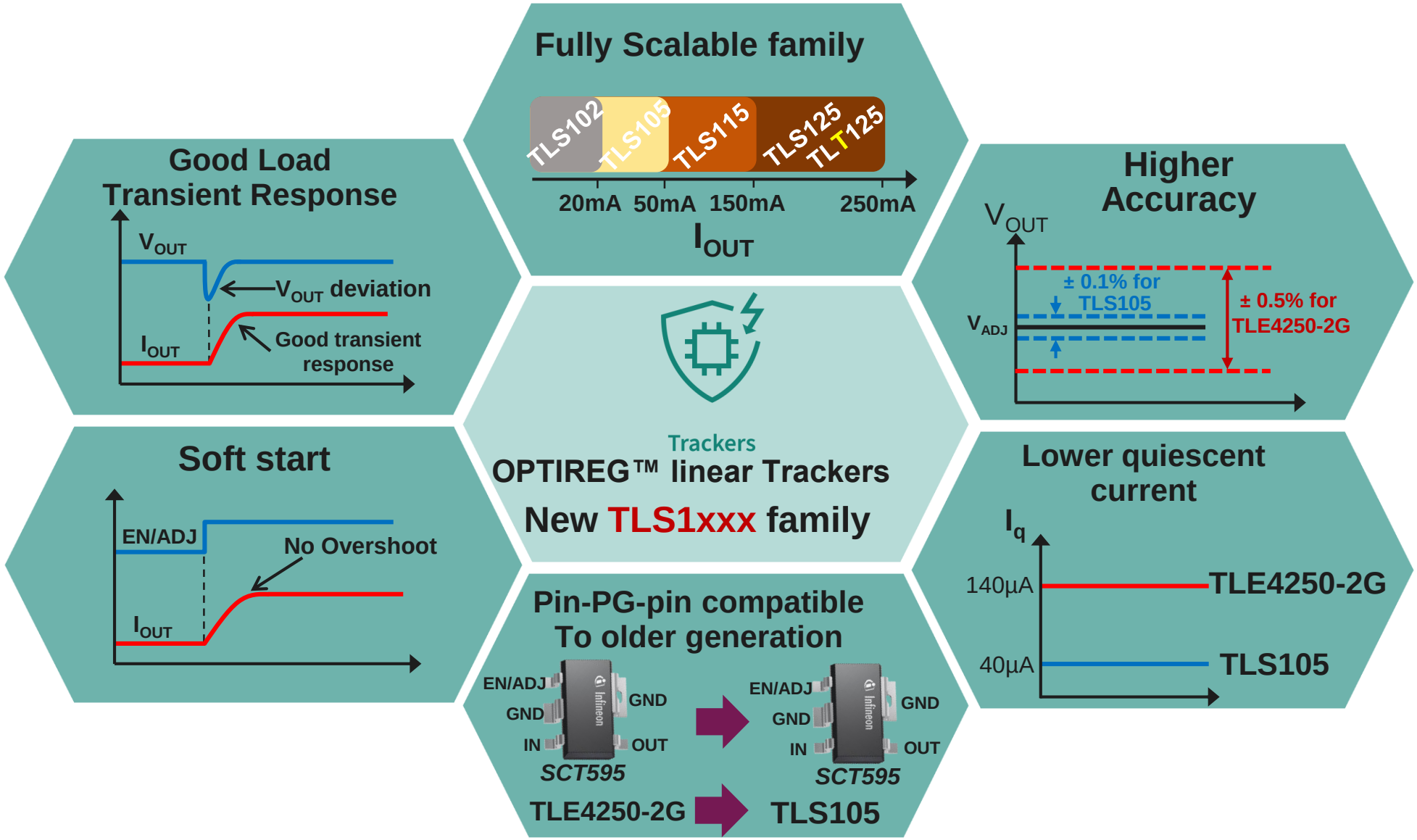




Only **Digital** Sensors (non-ratiometric)	**Fixed** Output Voltage with **lower** Accuracy (~ 2%)	**Accuracy**	High **Tracking** Output Voltage **Accuracy** (~ 0.1%) Trackers	• Mandatory for **analog** Sensors (ratiometric) • Works for **digital** Sensors (non-ratiometric)
Only **On-board** Sensors	Protection often missing against short-circuits	**Protection**	Protection against **short-circuits**, **overvoltage,** or **reverse polarity** Trackers	• Mandatory for **analog** Sensors (ratiometric) • Works for **digital** Sensors (non-ratiometric) (“satellite”)

New TLS1xxx Tracker family
We bring the Tracker performance to the next level!

Trackers



OPTIREG™ linear Tracker family
A fully scalable family with the broadest portfolio on the market

Trackers

Alt. Pkg. — Alternative Package

- **EN** : Enable
- **ADJ** : Reference Voltage
- **EN/ADJ** : Single pin for Enable + Reference
- **FB** : Feedback
- **PG** : Power Good






PG-SCT595	PG-TSON-10	PG-DSO-8	PG-DSO-8-EP	PG-TO252-x	PG-TO263-x
A*=2.9 x 1.6 mm²	A*=3.3 x 3.3 mm²	A*= 5 x 4 mm²	A*=5 x 4 mm²	A*=6.5 x 6.2 mm²	A*=10 x 9.3mm²
R_{thJA}**= ~ 85°C/W	R_{thJA}**= ~ 60°C/W	R_{thJA}**=~ 110°C/W	R_{thJA}**= ~ 50°C/W	R_{thJA}**= ~ 30°C/W	R_{thJA}**= ~ 20°C/W

* **A** = **Body Area** : Length x Width

** R_{thJA} : **Thermal Resistance** Junction to ambient on FR4 2s2p board

x :**PG-252** and **PG-263** Packages are available in **3-pin**, **5-pin** and **7-pin** variants

Next Gen. — Next Generation

Device maximum output current ($I_{out,max}$)

Feature Set	20 mA	50 mA	70 mA	150 mA	250 mA	400 mA
– EN/ADJ	TLS102B0MB Accuracy **0.1%**	TLE4250-2G Accuracy **0.5%**; TLS105B0MB Accuracy **0.1%** (Next Gen.)				
– EN – ADJ				TLS115B0LD Accuracy **0.1%**; TLS115B0EJ Accuracy **0.1%** (Alt. Pkg.)		
– EN/ADJ – FB			TLE4254GA Accuracy **0.1%**; TLE4254EJ A Accuracy **0.1%** (Alt. Pkg.)		TLE4253GS Accuracy **0.2%**; TLE4253E Accuracy **0.2%** (Alt. Pkg.)	
– EN/ADJ – PG			TLE4254GS Accuracy **0.1%**; TLE4254EJ S Accuracy **0.1%** (Alt. Pkg.)		TLE4252D Accuracy **0.2%**	TLE4251D Accuracy **0.2%**; TLE4251G Accuracy **0.2%** (Alt. Pkg.)
– EN – ADJ – PG				TLS115D0LD Accuracy **0.1%**; TLS115D0EJ Accuracy **0.1%** (Alt. Pkg.)	TLS125D0EJ Accuracy **0.1%**; TLT125D0EJ Accuracy **0.1%**	

Tj,max = 160°C

Click on the part to access its website

Get **OPTIREG™ linear** for your **XENSIV™**

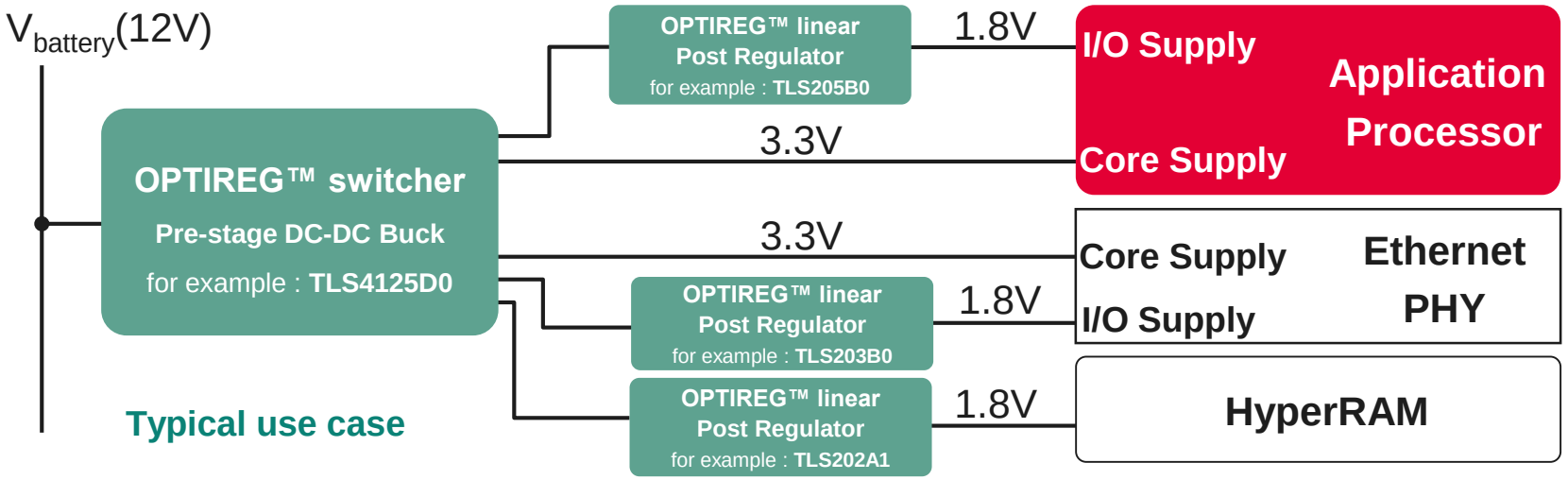
Sensor to Sensor supply mapping

Body			Powertrain								Safety			
Seat Comfort	General		Engine Management (ECU)			Fuel Injection			Inverters		Battery Management	Transmission	Electric power steering (EPS)		Braking / ABS	Airbag / Pedestrian protection
Barometric Press. Sensors	Magnet. position sensors (Non RM)	3D Magnet. sensors (Non RM)	Barometric Press. sensors (RM)	Engine Speed sensors (Non RM)	Linear Hall Magnet. Position (RM)	Engine Speed sensors (Non RM)	Manifold Pressure sensors (RM)	Angle sensor (Non RM)	Current sensors (Non RM)	Angle sensors (Non RM)	Barometric Pressure Sensors (RM)	Trans. speed sensor (Non RM)	Linear Hall Magne. Position (RM)	Angle Sensors (Non RM)	Wheel speed sensor (Non RM)	Side Airbag / Pedestrian Protect. Sensors (Non RM)
KP236 (RM) KP256 (Non RM) TLS805 TLS810 TLS710 TLS715 TLE429x TLE425x TLS1xx	TLE4961 TLE4966 TLE4946 TLE4964 TLS805 TLS810 TLS710 TLS715 TLE429x TLE425x TLS1xx	TLE493D TLE425x TLS1xx TLE429x	KP234 KP254 KP255 TLS805 TLS810 TLS710 TLS715 TLE429x TLE425x TLS1xx	TLE498x TLE425x TLS1xx TLE429x	TLE4997 TLS1xx	TLE492x TLE425x TLS1xx TLE429x	KP21x KP22x KP27x TLS1xx	TLE502 TLE425x TLS1xx TLE429x	TLI427x TLE425x TLS1xx TLE429x	TLE5309 TLE5009 TLE5012 TLE5014 TLE425x TLS1xx TLE429x	KP23x TLS805 TLS810 TLS710 TLS715 TLE429x TLE425x TLS1xx	TLE495x TLE494x TLS805 TLS810 TLS710 TLS715 TLE429x TLE425x TLS1xx	TLE4997 TLS1xx	TLE5309 TLE425x TLS1xx TLE429x TLE5012 TLE5013 TLE5014 TLS805 TLS810 TLS710 TLS715 TLE429x TLE425x TLS1xx	TLE494x TLE504x TLE425x TLS1xx TLE429x	KP200 KP201 KP204 TLS805 TLS810 TLS710 TLS715 TLE429x TLE425x TLS1xx

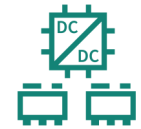
*RM = Ratiometric

Legend: Power supply for On ECU(on board) Power supply for Off ECU("Satellite")

If you need to supply a voltage rail in post-regulator topology, then get your OPTIREG™ linear Post Regulator LDO



Typical use case

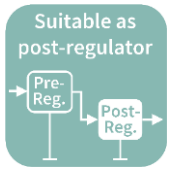


Linear post regulators

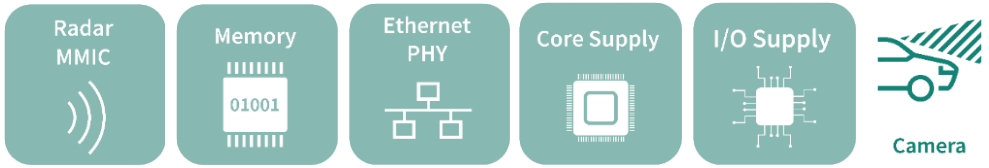
TLS2xx
TLF1963

Target applications

Topology



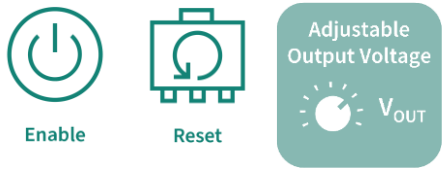
Best suited to supply



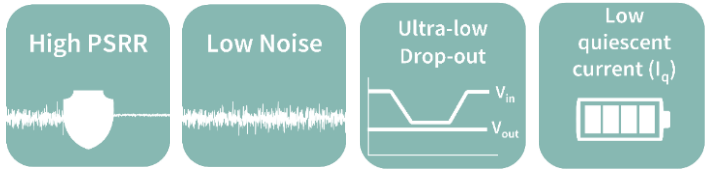
Also suitable to supply

Cluster Supply
Low noise supply

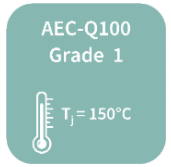
Feature set



Key strengths



Temperature Range



Unique differentiators

OPTIREG™ linear Post Regulator Family
Choosing your Post Regulator has never been simpler!

Linear post regulators

5V **Fixed** output Voltage V_{OUT} = **5V**

3.3V **Fixed** output Voltage V_{OUT} = **3.3V**

ADJ **Adjustable** output Voltage

PG-SCT595
A*=**2.9 x 1.6 mm²**
R_{thJA}**= ~ 85°C/W

PG-TSON-10
A*=**3.3 x 3.3 mm²**
R_{thJA}**= ~ 60°C/W

PG-DSO-8-EP
A*=**5 x 4 mm²**
R_{thJA}**= ~ 50°C/W

PG-TO252-x
A*=**6.5 x 6.2 mm²**
R_{thJA}**= ~ 30°C/W

* **A** = **Body Area** : Length x Width

** R_{thJA} : **Thermal Resistance** Junction to ambient on FR4 2s2p board

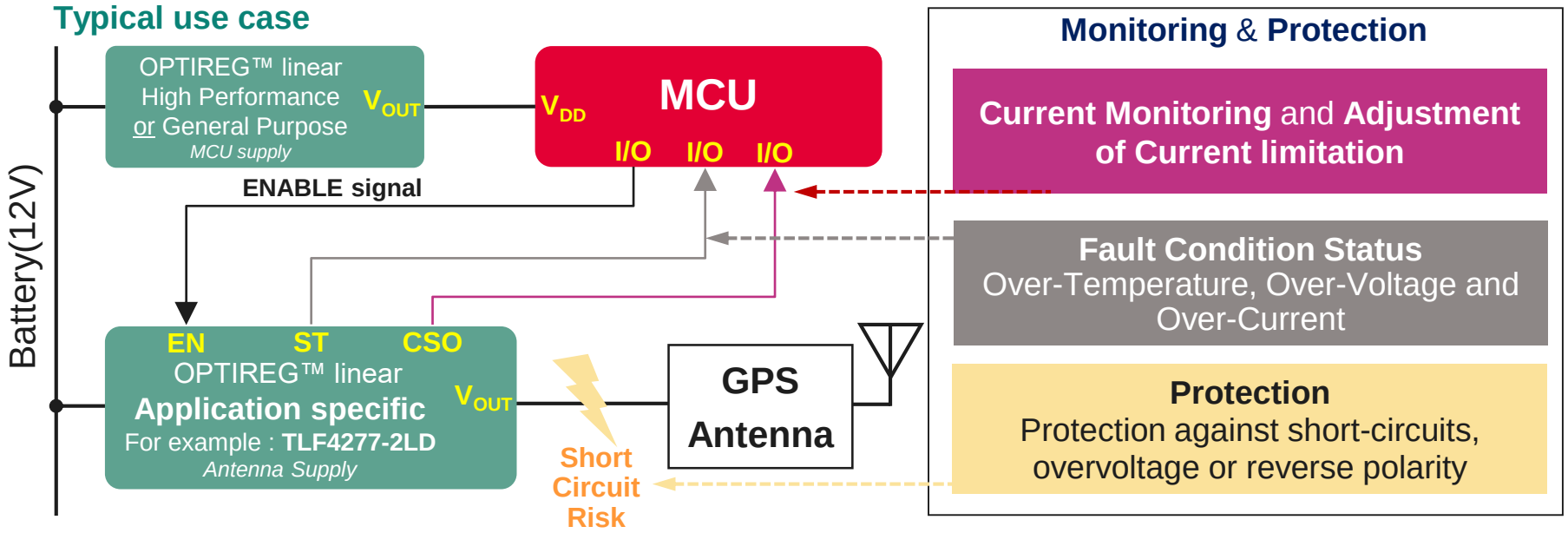
-x :PG-252 and **PG-263** Packages are available in **3-pin**, **5-pin** and **7-pin** variants

Feature Set	Device maximum output current ($I_{out,max}$)				
	150 mA	**300 mA**	**500 mA**	**800 mA**	**1500 mA**
Always On	**TLS202A1MBV** ADJ				
Enable	**TLS202B1MB Vxx** 3.3V 5V	**TLS203B0EJ Vxx** 3.3V 5V ADJ	**TLS205B0EJ Vxx** 3.3V 5V ADJ		**TLF1963TE** ADJ
Reset				**TLS208D1EJ Vxx** 3.3V ADJ	

Click on the part to access its website

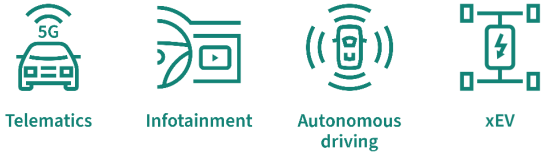
If you need an LDO with current sense, advanced monitoring and reverse polarity protection, then get an LDO of the Application Specific family

Typical use case

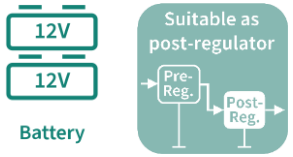


TL**F4277xx** (single channel)
TL**F4477xx** (dual channel)

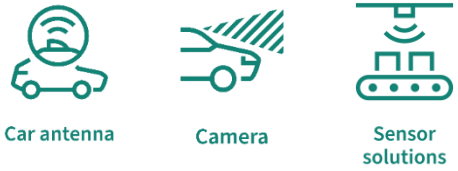
Target applications



Topology



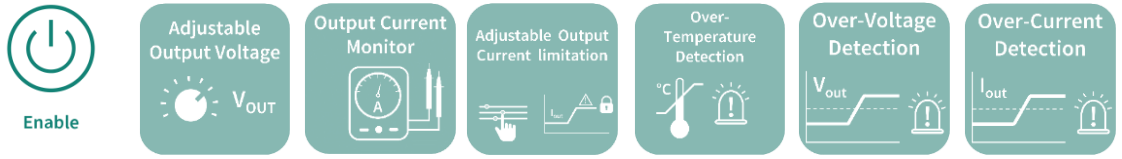
Best suited to supply



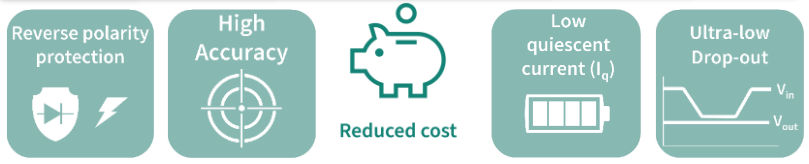
Also suitable to supply

Unique differentiators

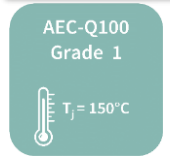
Feature set



Key strengths



Temperature Range



OPTIREG™ linear Application specific

Scalable Family of LDOs with Current Sense, monitoring & Protection

Active Antenna

PG-TSON-8	PG-TSON-10	PG-TSON-14	PG-SSOP-14	PG-TSDSO-14
A*= 3 x 3 mm²	A*=3.3 x 3.3 mm²	A*= 4.5 x 3 mm²	A*=4.9 x 3.9 mm²	A*=4.9 x 3.9 mm²
R_{thJA}**= ~ 54°C/W	R_{thJA}**= ~ 60°C/W	R_{thJA}**= ~ 45°C/W	R_{thJA}**= ~ 45°C/W	R_{thJA}**= ~ 45°C/W

* **A** = **Body Area** : Length x Width

** R_{thJA} : **Thermal Resistance** Junction to ambient on FR4 2s2p board

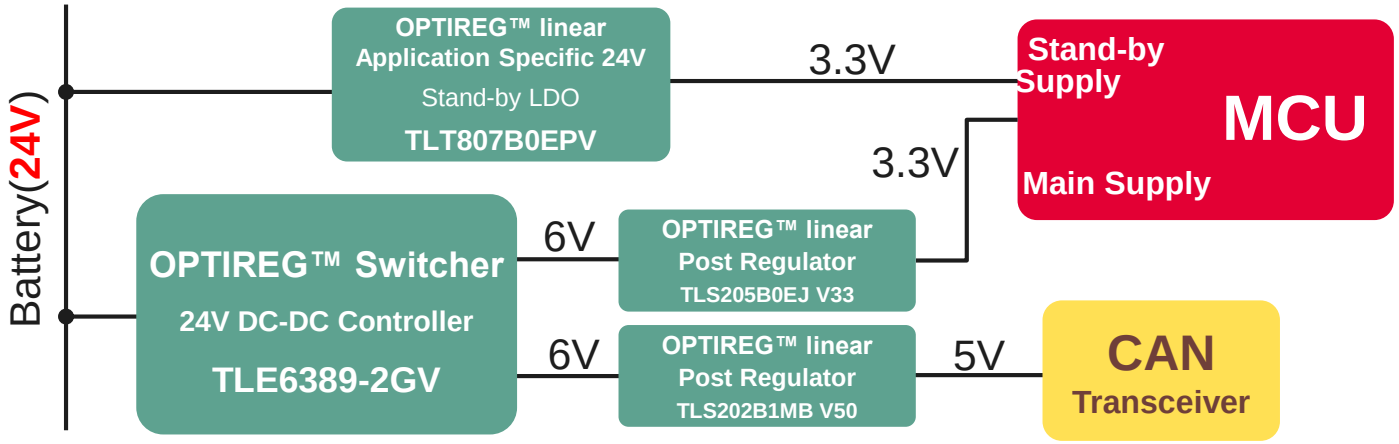
Application specific

Output Channel	Device maximum output current ($I_{out,max}$)			
	200 mA	300 mA	400 mA	600 mA (300mA / Channel)
Single Output Channel	Newer Generation → **TLF4277EL** Adjustable V_{OUT}	**TLF4277-2EL** Adjustable V_{OUT}; **TLF4277-2LD** Adjustable V_{OUT} (Alternative Packages)	new **TLF4277-2EP** Adjustable V_{OUT}	
Dual Output Channel				new **TLF4477-3LA** Adjustable V_{OUT}

Click on the part to access its website

OPTIREG™ 24V LDOs and 24V Switching Controllers are best fit for Truck and CAV Applications

Typical use case



24V LDO

TL**T807**
TL**E447xx**

Portfolio of LDOs for 24V Battery Applications

TLE6389xx

Portfolio of Switchers for 24V Battery Applications

Target applications

Truck CAV

Topology

24V
24V

Battery

Best suited to supply

Micro-controller

Transceiver
CAN
CAN PN
CAN FD

Sensor solutions

Satellite ECU supply

Feature set

Adjustable Output Voltage V_{OUT}

Enable

Reset

Key strengths

Reverse polarity protection

Ultra-low Drop-out V_{in} V_{out}

Reduced cost

Very good Heat dissipating package

AEC-Q100 Grade 1 T_j = 150°C

Temperature Range

Unique differentiators

Infineon Automotive Quality

Current Limitation I_{out}

Over-Temperature shutdown °C

OPTIREG™ 24V LDOs and 24V Switching Controllers are best fit for Truck and CAV Applications

Linear post regulators

Application specific

Battery | Truck | CAV

PG-TSDSO-14
A*=4.9 x 3.9 mm²
R_{thJA}**= ~ 45°C/W

PG-DSO-14
A*=8.65 x 3.9 mm²
R_{thJA}**= ~ 63°C/W

PG-TO252-x
A*=6.5 x 6.2 mm²
R_{thJA}**= ~ 30°C/W

PG-TO263-x
A*=10 x 9.3mm²
R_{thJA}**= ~ 20°C/W

PG-DSO-20
A*=15.9 x 11mm²
R_{thJA}= ~ 17°C/W

* **A** = **Body Area** : Length x Width

** R_{thJA} : **Thermal Resistance** Junction to ambient on FR4 2s2p board

-x :PG-252 and **PG-263** Packages are available in **3-pin**, **5-pin** and **7-pin** variants

5V **Fixed V_{OUT} = 5V**

ADJ **Adjustable V_{OUT}**

LDO

Single Output

Multiple Output

Feature Set

Always On

TLT807B0EPV
- $I_{OUT,MAX}$ = **70mA**
- **Adjustable V_{OUT}**
- OV Protection up to **58V (<400ms)**

TLE4476D
2-Channel
- OUTPUT 1 : **350mA , 3.3V**
- OUTPUT 2 **: 430mA , 5V**
- OV Protection up to **65V (<400ms)**

Enable

TLE4267GM
- $I_{OUT,MAX}$ = **400mA ; Fixed 5V V_{OUT}**
- OV Protection up to **60V (<400ms)**

TLE4267G
- $I_{OUT,MAX}$ = **400mA ; Fixed 5V V_{OUT}**
- OV Protection up to **60V (<400ms)**

TLE4270-2D
- $I_{OUT,MAX}$ = **650mA ; Fixed 5V V_{OUT}**
- OV Protection up to **65V (<400ms)**

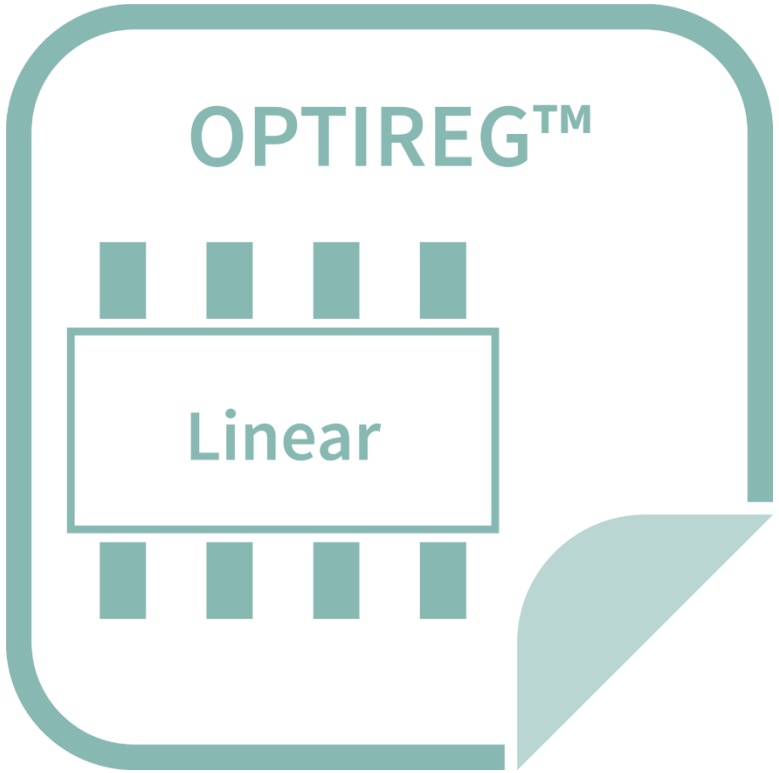
TLE4270-2G
- $I_{OUT,MAX}$ = **650mA ; Fixed 5V V_{OUT}**
- OV Protection up to **65V (<400ms)**

Reset

TLE4271-2G
- $I_{OUT,MAX}$ = **550mA**
- **Fixed 5V V_{OUT}**
- OV Protection up to **65V (<400ms)**

TLE4471G
3-Channel
- OUTPUT 1 : **450mA , 5V**
- OUTPUT 2 **: 100mA , Tracking V_{OUT}**
- OUTPUT 3 **: 50mA , Tracking V_{OUT}**
- OV Protection up to **60V (<400ms)**

Click on the part to access its website



Device naming Nomenclature

OPTIREG™ linear
Device naming nomenclature

This nomenclature is valid for the following **3 families** of OPTIREG™ linear

Linear post regulators

High performances

Trackers

D : digit
L : letter

TL **S / M / T** **8 / 2 / 1** **DD** **L** **D** **LL** **V50 / V33 / VSE / V**

Output type
S : Single
M : Multiple
T : ENDURANCE

Family
8 : High Performance
2 : Post Regulator
1 : Tracker

Output Current
For High Performance & Tracker:
DD x 10mA
For Post Regulator:
DD x 100mA

Feature
A : No feature
B : EN
C : RES
D : EN + RES
E : RES + WD
F : EN + RES + WD
G : EN + RST + WWD
H : EN + Current Sense
For Tracker:
D : EN + PG

Device Generation
0 : 1st generation
1 : 2nd generation
2 : 3rd generation
etc.

Package
MB : SCT595
LD : TSON-10
SJ : DSO-8
EJ : DSO-8-EP
EL : SSOP-14-EP
EP : PG-TSDSO-14
TE : PG-252
TA : PG-263
TB : PG-263

For High performance & Post Regulator:
Output Voltage
V50 : 5V
V33 : 3.3V
VSE : Selectable 5V/3.3V
V : Adjustable
For Tracker:
No suffix : always adjustable!

Abbreviations and Terminology:			
	● **No feature :** Vin,Vout,GND	● **EN :** Enable	● **RES :** Reset
	● **PG :** Power good	● **WD :** Watchdog	● **WWD :** Window Watchdog

OPTIREG™ linear
Device naming nomenclature

High performances

TLS820F1EL V50

Single Output	Family	Output Current	Feature	Device Generation	Package	Output Voltage
	8 : High Performance	**20 x 10mA = 200mA**	**F** : EN + RES + WD	**1** : 2nd generation	**EL** : SSOP-14-EP	**V50** : 5V

Abbreviations and Terminology:	● **No feature :** Vin,Vout,GND	● **EN :** Enable	● **RES :** Reset
	● **PG :** Power good	● **WD :** Watchdog	● **WWD :** Window Watchdog

OPTIREG™ linear
Device naming nomenclature

Linear post regulators

TLS205B0LDV

Single Output

Family
8 : Post Regulator

Output Current
05 x 100mA = 500mA

Feature
B : EN

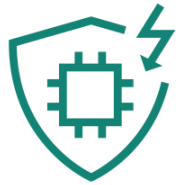
Device Generation
0 : 1st generation

Package
LD : TSON-10

Output Voltage
V : Adjustable

Abbreviations and Terminology:	● **No feature :** Vin,Vout,GND	● **EN :** Enable	● **RES :** Reset
	● **PG :** Power good	● **WD :** Watchdog	● **WWD :** Window Watchdog

OPTIREG™ linear
Device naming nomenclature



Trackers

TLS115D0EJ__

Single Output

Family
1 : Trackers

Output Current
15 x 10mA = 150mA

Feature
D : EN + PG

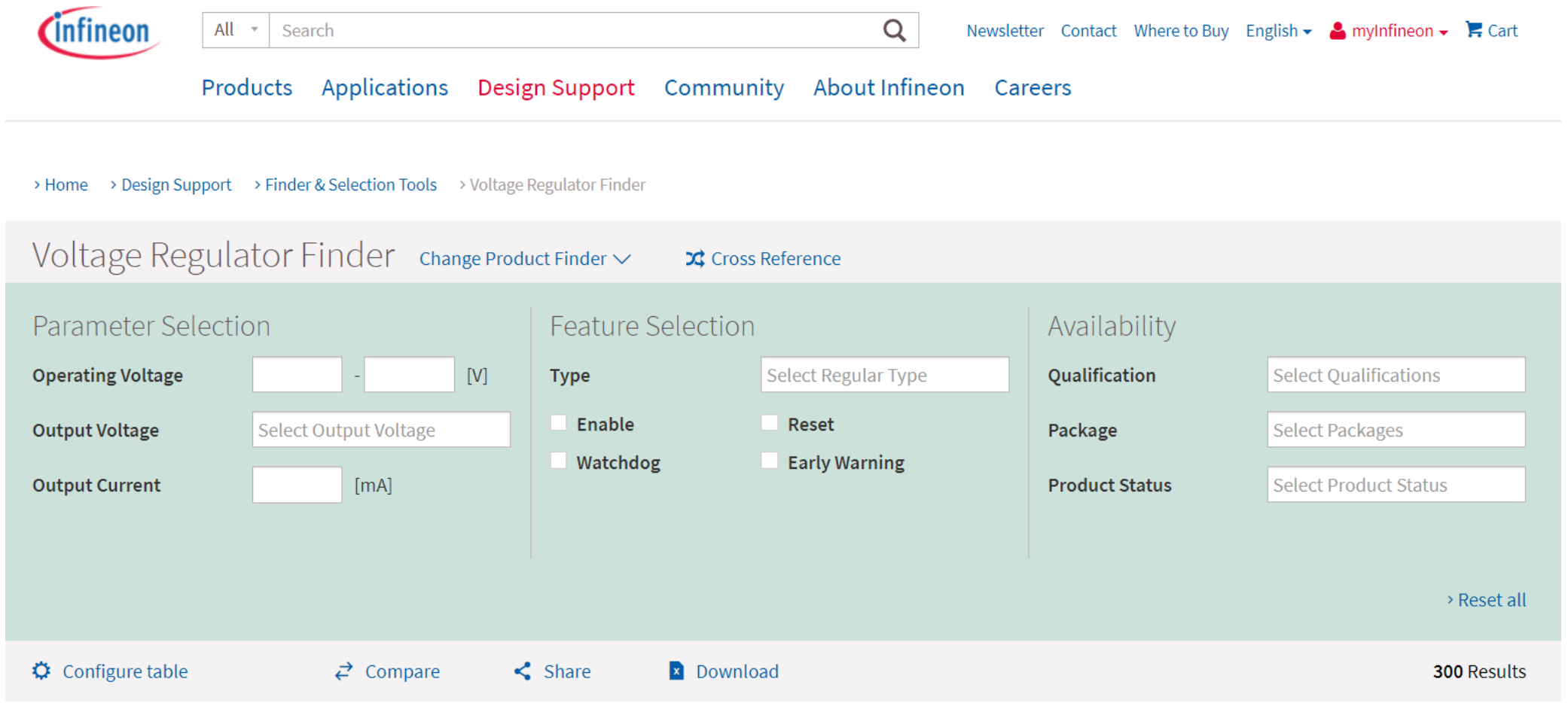
Device Generation
0 : 1st generation

Package
EJ : DSO-8-EP

Output Voltage
No Suffix : always adjustable for Trackers!

Abbreviations and Terminology:	● **No feature :** Vin,Vout,GND	● **EN :** Enable	● **RES :** Reset
	● **PG :** Power good	● **WD :** Watchdog	● **WWD :** Window Watchdog

OPTIREG™ linear
Finding the right LDO for your specifications in just a few clicks!



Use our voltage regulator finder LINK


Infineon