

Automotive Transceivers

CAN / LIN / LIN LDO
Product presentation

Infineon Automotive Division
Q3 2026

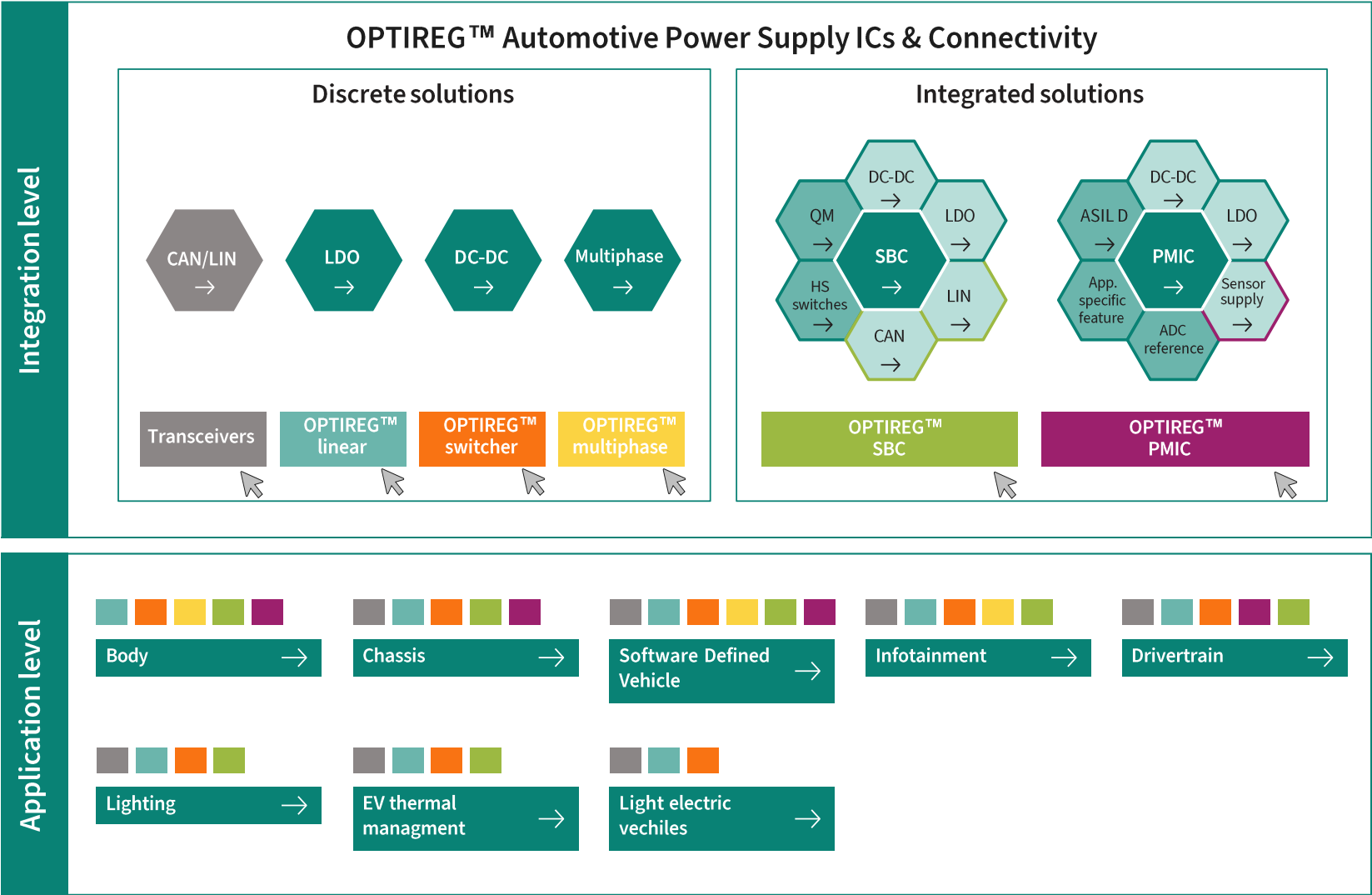


Table of contents

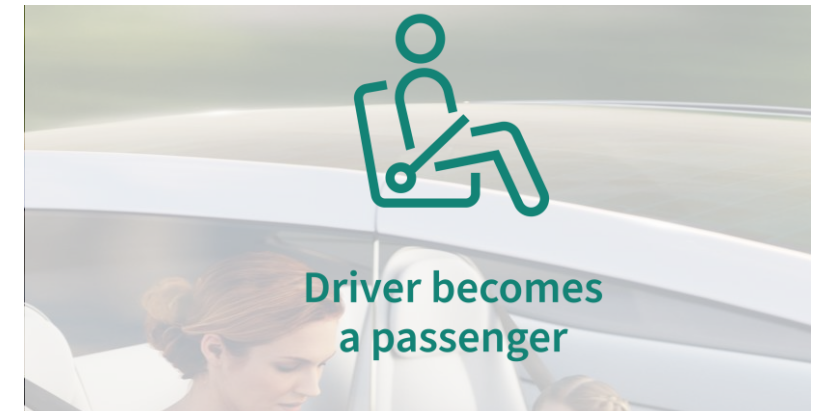
1	OPTIREG™	3
2	Transceivers	6
	LIN Transceivers	13
	CAN Transceivers with Flexible Data (FD)	22
	CAN FD with Grade "0+" Capability	38
	CAN FD with Signal Improvement Concept (SIC)	44
3	Cross-selling	54
4	Trainings	57
5	Supporting Tools & Documents	59
6	Device Naming Nomenclature	62

OPTIREG™

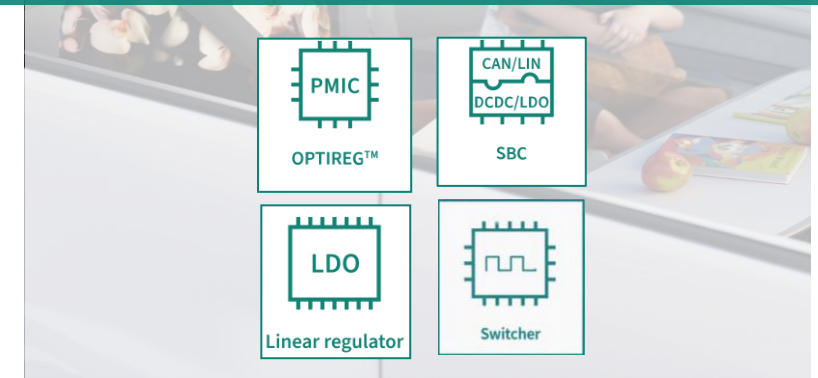
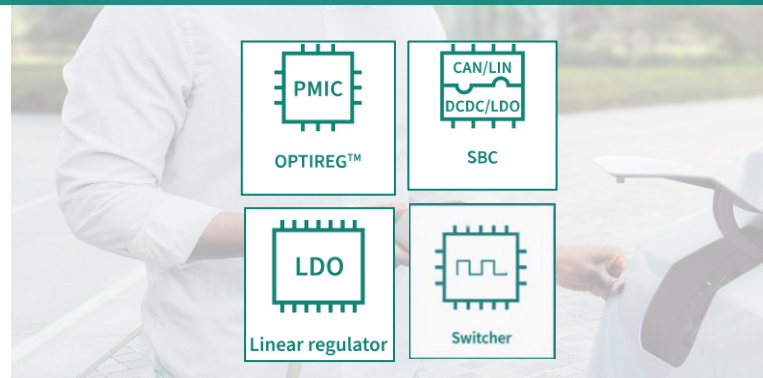
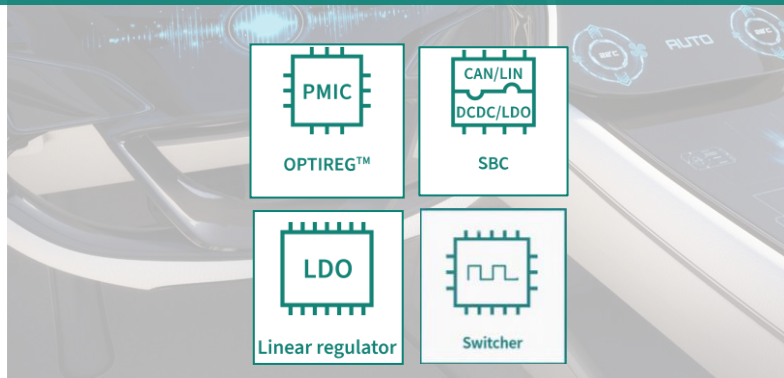
OPTIREG™ Portfolio



OPTIREG™ Power Supply fits in all automotive relevant trends



OPTIREG™ provides the right products



to support all these trends

Traditional applications

Efficient supply concepts

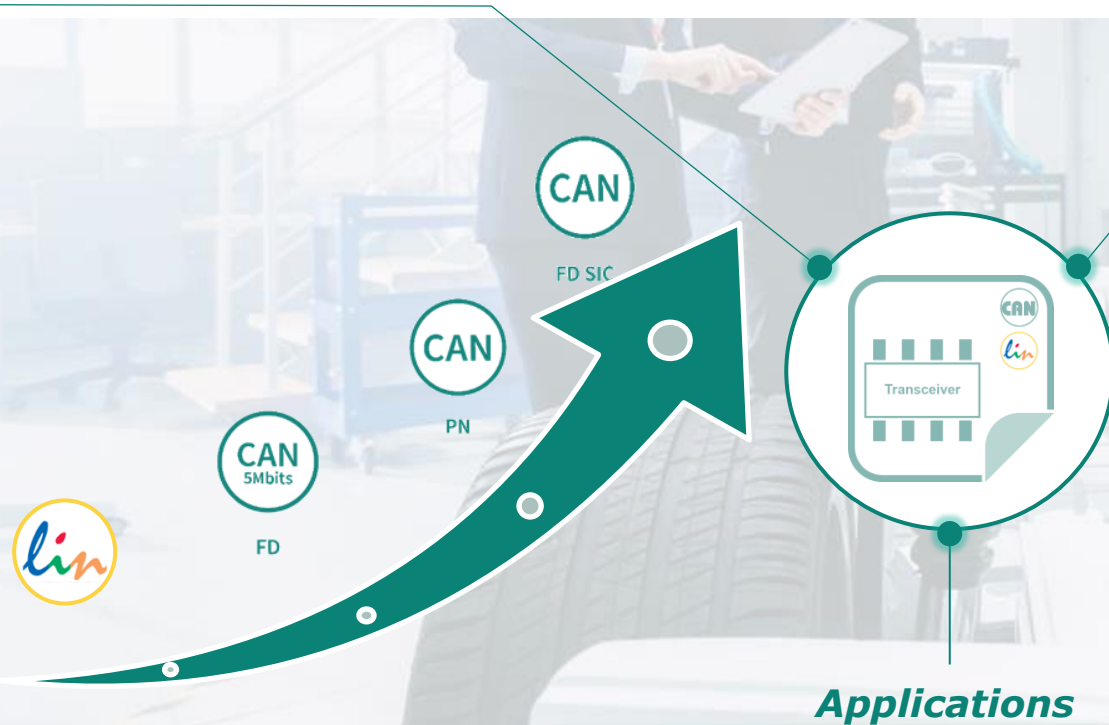
Emerging business models

Transceivers

Transceivers in a Nutshell



Product families



Versatile and Reliable

Key Feature	Customer Benefit
Extensive portfolio for versatile applications	Enable design flexibility across a wide range of automotive applications.
Different package solutions	Reducing layout efforts
Backward pin to pin compatible with previous product versions	Easy transition towards higher speed solutions
Worldwide release by OEMs	Evaluated and approved for worldwide release in automotive applications
Very low CAN bus leakage current	Low power consumption during low-power state
Following newest standards and certification	Easy implementation into new platforms with newest requirements



BMS



Body Comfort



Transmission



Telematics



Car antenna



Truck



Infotainment



Autonomous driving



xEV



CAV

CAN transceivers (value steps overview)



PACKAGE OPTION		FEATURE SET									
DSO8 TLE9350BSJ	TSO8 TLE9250LE (NFND)*	5MBit/s								Receive Only / Power Save	
		5MBit/s	Vio Pin							Receive Only Mode	
		5MBit/s	Vio Pin							Power Save Mode	
		5MBit/s		Standby Mode	Bus Wake-Up						
		8MBit/s		Standby Mode	Bus Wake-Up						
		5MBit/s	Vio Pin	Standby Mode	Bus Wake-Up						
		8MBit/s	Vio Pin	Standby Mode	Bus Wake-Up						
		5MBit/s	Vio Pin	Standby Mode	Bus Wake-Up	AEC-Q100 Grade 0					
DSO14 TLE9252VSK	TSO14 TLE9252VLC	5MBit/s	Vio Pin	Standby Mode	Bus Wake-Up			Wake-up Input	Inhibit output	Error detection	
		5MBit/s	Vio Pin	Standby Mode	Bus Wake-Up			Wake-up Input	Inhibit output	Partial Networking	
		5MBit/s	Vio Pin	Standby Mode	Bus Wake-Up	AEC-Q100 Grade 0		Wake-up Input	Inhibit output	Error detection	
		5MBit/s	Vio Pin	Standby Mode	Bus Wake-Up	AEC-Q100 Grade 0		Wake-up Input	Inhibit output	Partial Networking	

* NFND: Not For New Design

CAN transceivers (value steps overview – upcoming updates)



PACKAGE OPTION		FEATURE SET									
DSO8 TLE9350BSJ	TSO8 TLE9350BLE	5MBit/s								Receive Only / Power Save	
		5MBit/s	Vio Pin							Receive Only Mode	
		5MBit/s	Vio Pin							Power Save Mode	
		5MBit/s			Standby Mode	Bus Wake-Up					
		8MBit/s			Standby Mode	Bus Wake-Up					
		5MBit/s	Vio Pin		Standby Mode	Bus Wake-Up					
		8MBit/s	Vio Pin		Standby Mode	Bus Wake-Up					
		5MBit/s	Vio Pin		Standby Mode	Bus Wake-Up			AEC-Q100 Grade 0		
DSO14 TLE9252VSK	TSO14 TLE9252VLC	5MBit/s	Vio Pin	Standby Mode	Bus Wake-Up			Wake-up Input	Inhibit output	Error detection	
		5MBit/s	Vio Pin	Standby Mode	Bus Wake-Up			Wake-up Input	Inhibit output	Partial Networking	
		5MBit/s	Vio Pin	Standby Mode	Bus Wake-Up		AEC-Q100 Grade 0	Wake-up Input	Inhibit output		Error detection
		5MBit/s	Vio Pin	Standby Mode	Bus Wake-Up		AEC-Q100 Grade 0	Wake-up Input	Inhibit output	Partial Networking	

LIN transceivers (value steps overview)

PACKAGE OPTION		FEATURE SET				
 DSO8 TLE7257SJ TLE7258SJ TLE7259-3GE TLE8457DSJ TLE8457CSJ TLE8457BSJ (Discontinued) TLE8457ASJ (Discontinued)	 TSO8 TLE7257LE TLE7258LE TLE7259-3LE TLE8457DLE TLE8457CLE TLE8457BLE TLE8457ALE	20kbit/s	Inhibit output		Bus Wake-Up	Efficient start-up
		20kbit/s	Inhibit output		Bus Wake-Up	Fast start-up
		20kbit/s	Inhibit output	Fast Programming (assembly line)	Bus Wake-Up	Local Wake-Up
		20kbit/s			Bus Wake-Up	LDO 3.3V
		20kbit/s			Bus Wake-Up	LDO 5V
		20kbit/s			Bus Wake-Up	Time out
		20kbit/s			Bus Wake-Up	Time out
 DSO14 TLE7268SK	 TSO14 TLE7268LC	20kbit/s	Inhibit output		Bus Wake-Up	Dual LIN

Transceivers Portfolio (LIN and CAN) overview



SOP	LIN	CAN	CAN FD	CAN PN	CAN FD SIC
< 2005	lin DUAL lin lin LDO	CAN 1MB TLE625*-family			
< 2014		CAN 2MB TLE725*-family 2MB TLE825*-family			
2016			CAN FD 5MB CAN FD TLE925*-family		
2018			CAN FD 5MB CAN FD TLT925*-family ,Endurance‘	CAN PN 5MB CAN FD TLE9255-family ,Partial Networking‘	
2020			CAN FD 5MB CAN FD TLE935*-family		
2022					CAN FD 8MB CAN FD SIC TLE9371xSJ DSO8
2023			CAN FD 5MB CAN FD UMC TLE935xBxSJ DSO8		
2025			CAN FD 5MB CAN FD UMC TLE935xBxLE TSON8		CAN FD 8MB CAN FD SIC TLE9371xLE TSON8
	In Production				

Infineon Automotive Transceiver Complete Portfolio

 Up to 20kbit/s Basic LIN › TLE7257SJ/LE › TLE7258SJ/LE High End LIN › TLE7259-3GE/LE LIN LDO › TLE8457ALE/BLE › TLE8457CSJ/LE › TLE8457DSJ/LE DUAL LIN › TLE7268SK › TLE7268LC	 Up to 5Mbit/s › TLE935xBx › TLE9250xLE › TLE9251xLE › TLE9252VLC/VSK › TLT9251VLE* › TLT9252VLC* › TLE935xBxLE 	 Up to 5Mbit/s › TLE9255WSK › TLE9255WLC › TLT9255WLC*	 Up to 8Mbit/s › TLE9371SJ › TLE9371VSJ › TLE9371LE › TLE9371VLE 
 Park assist   Sunroof 	 Engine Management  Transmission  Central gateway  Electric power steering	 Engine Management  Transmission  Central gateway  Transmission speed	 Autonomous driving  Engine Management  Transmission  Electric power steering

*Grade Zero/Endurance family = T ambient -40°C to +150°C or longer life-time

LIN Transceivers

LIN Transceivers

Key features

- Extensive portfolio for versatile applications
- Different package solutions
- Backward pin to pin compatible with previous product versions
- Worldwide release by OEMs
- Following newest standards and certification

Customer benefits

- Enable design flexibility across a wide range of automotive applications.
- Reducing layout efforts
- Easy transition between product families
- Evaluated and approved for worldwide release in automotive applications
- Easy implementation into new platforms with newest requirements

	TLE7257x	TLE7258x	TLE7259-3x	TLE8457Dx	TLE8457Cx	TLE8457BLE	TLE8457ALE	TLE7268x
Inhibit output	✓	✓	✓					✓
Fast Programming (assembly line)			✓					
Bus Wake-Up	✓	✓	✓	✓	✓	✓	✓	✓
Local Wake-Up			✓					
Efficient start-up	✓							
Fast start-up		✓						
Time out						✓	✓	
LDO 3.3V				✓		✓		
LDO 5V					✓		✓	
Dual LIN								✓

Applications



Park assist



Pumps



Fans



Seat heating

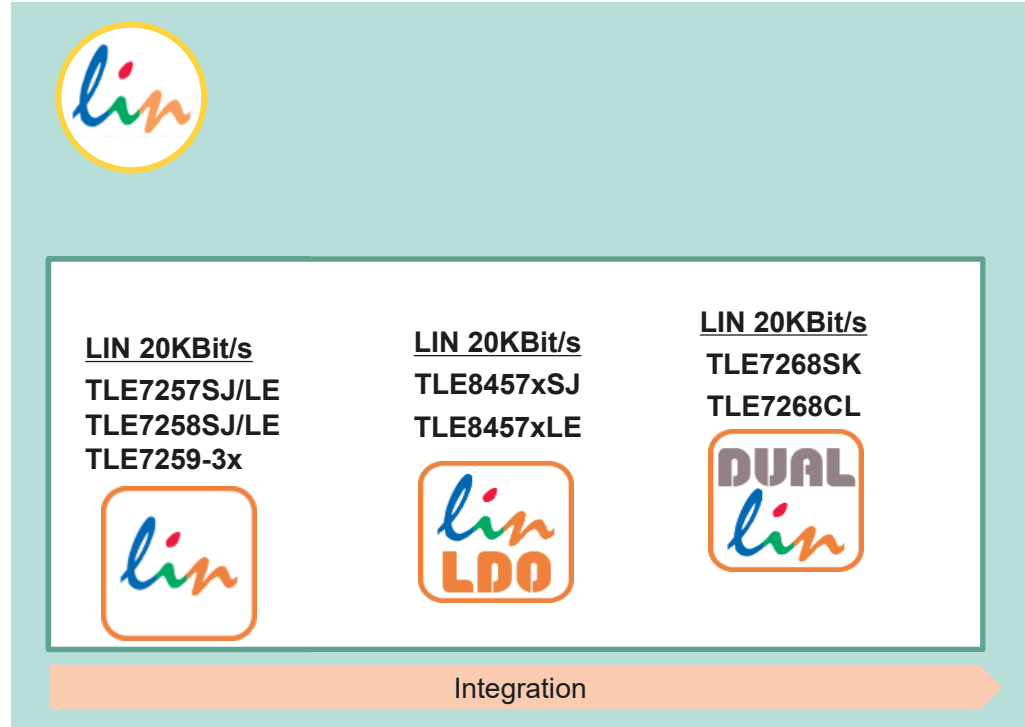


Sunroof

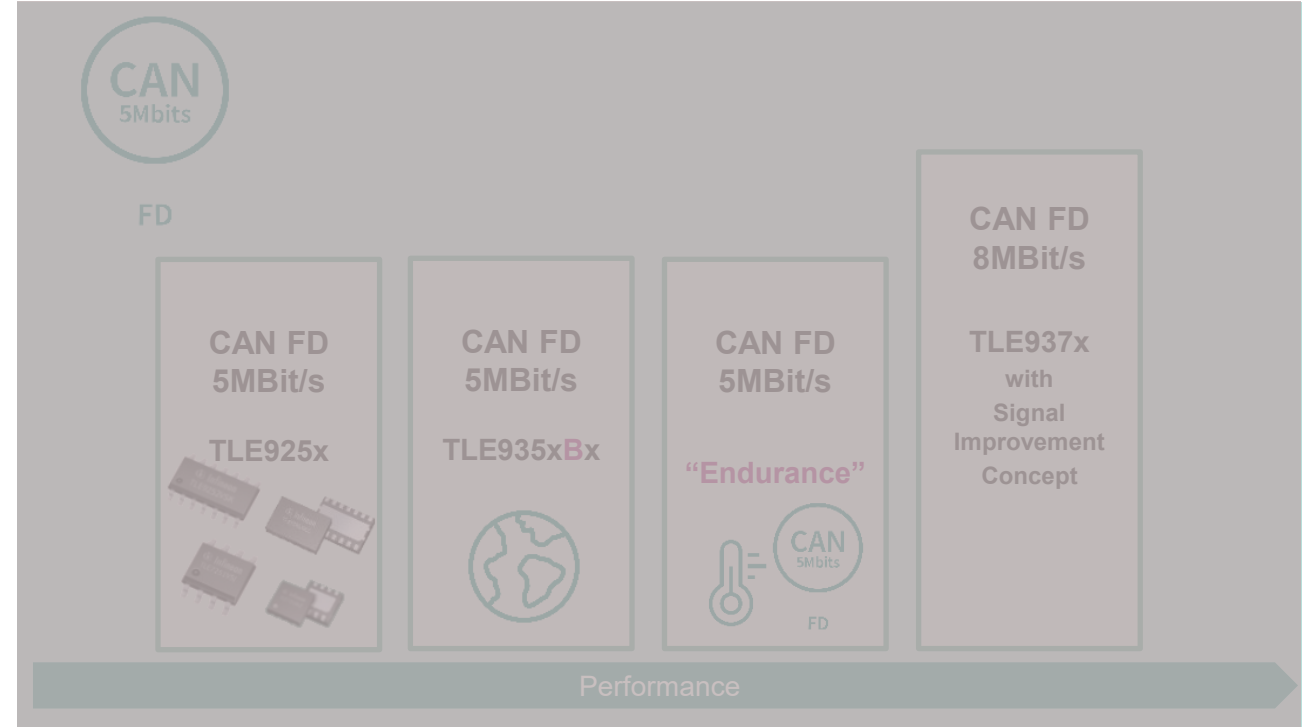


Rain sensor

Offering unique solutions to satisfy developments towards „In Vehicle Network“ segment



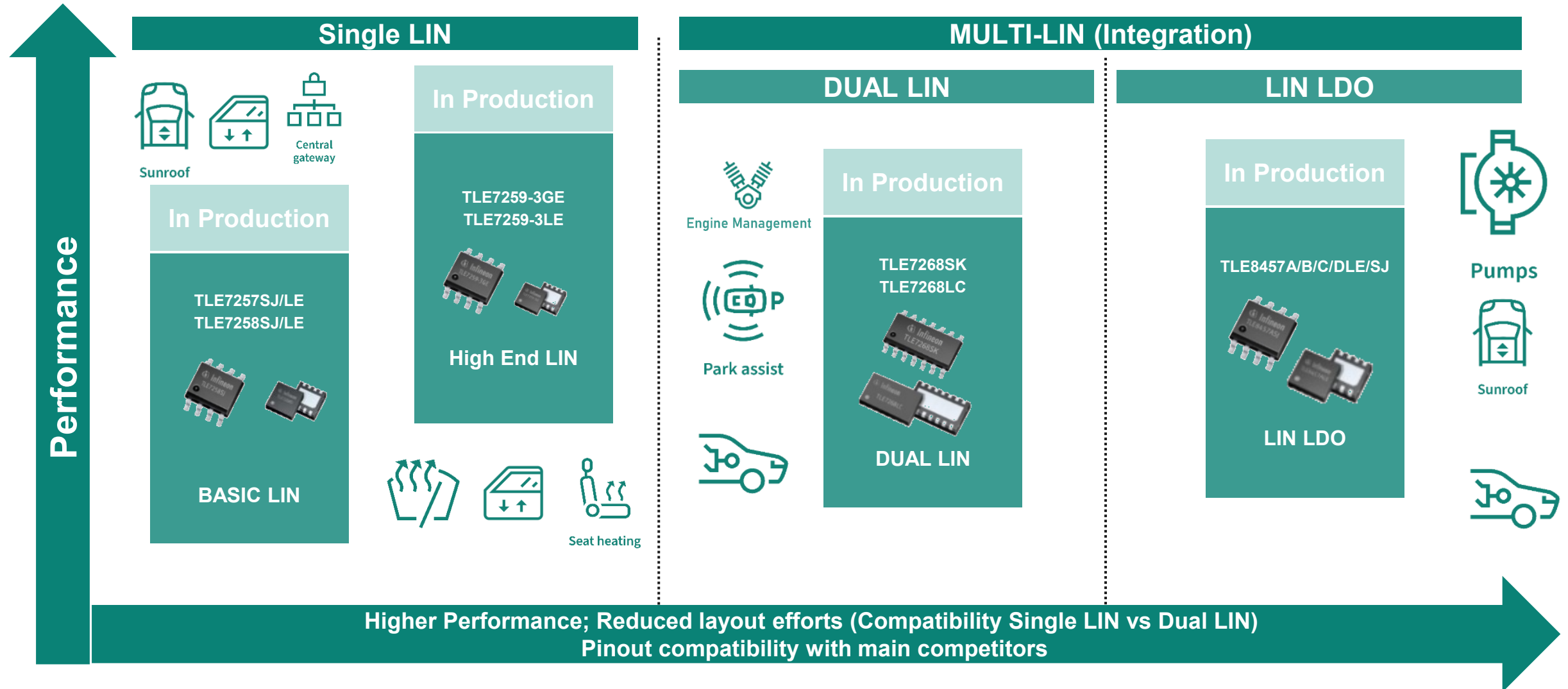
- › To date: More than 1 Billion LIN transceivers shipped
- › More than 20 different LIN products
- › Compliant to ISO 17987-4
- › World-wide release



- › To date: More than 2.7 Billion CAN transceivers shipped
- › More than 50 different CAN products
- › ISO 11898-2 ed 2024 compliant
- › World-wide release

LIN Transceiver Product Portfolio

Moving towards Integration



Infinion's Automotive Network ICs

LIN Transceiver Portfolio



DSO-8

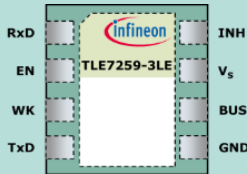
TSO-8

- › Fast progr.
- › Local wake
- › TxD timeout
- › Power-up

High End LIN
commander & responder



TLE7259-3LE



Stand-by

Basic LIN
commander & responder

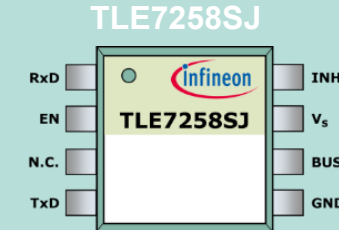


TLE7257LE

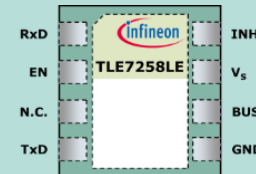


Sleep

Basic LIN
commander & responder

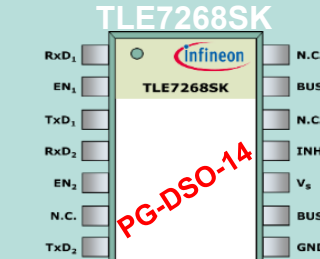


TLE7258LE

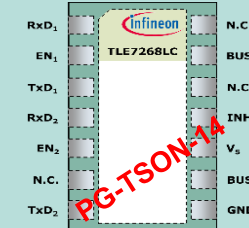


Stand-by

Dual LIN
commander & responder

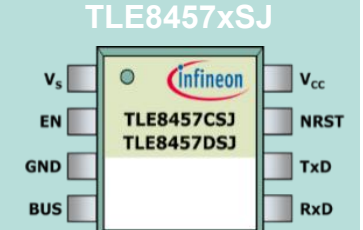


TLE7268LC

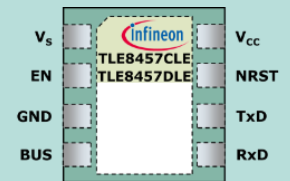


Stand-by

LIN LDO
commander & responder



TLE8457xLE



Sleep/Stand-by

Infinion's Automotive Network ICs

TLE7259-3GE/LE: High End LIN Transceiver



Key Features



- Standby, sleep and flash mode to support accelerated μ C programming
- Improved receiver performance: Reduced propagation delay and increased delay symmetry 5V output V-Reg w/o timeout
- Available in DSO-8 and TSON-8

Key Value Proposition



Reduced data transmission time (up to 100kbit/ in flash mode) and fast programming



Pin-to-Pin compatibility with existing competitors devices **reduces development time and effort**



Digital I/O's compatible to 3.3 V and 5 V micro controllers

Applications



Park assist



Pumps



Fans



Engine Management

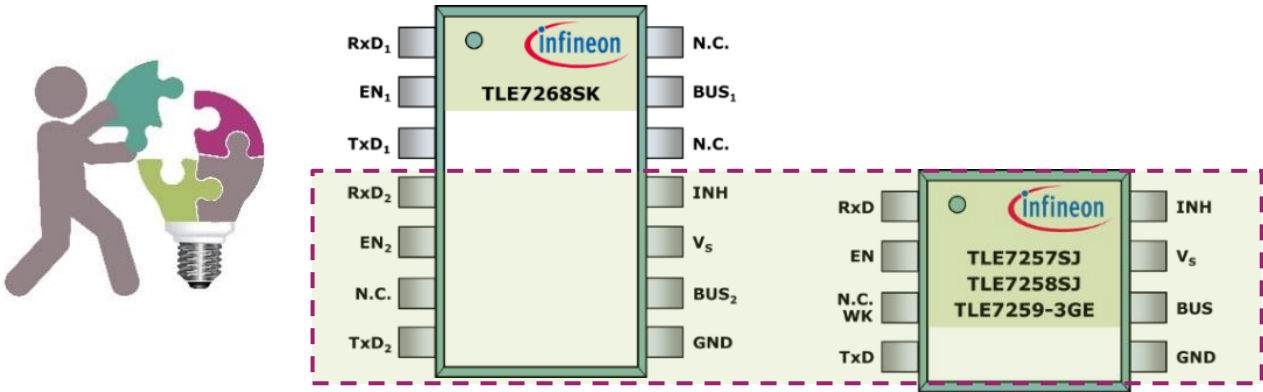


Infinion's Automotive Network ICs

TLE7268SK/LC: DUAL LIN Transceiver



Modularity



Applications



Sunroof



Seat heating



Car lighting

Key Value Proposition



Multiple and flexible designs



Reduced cost



Space saving

Reduced layout efforts with placement options.
Modularity and pin to pin compatible with single LIN

Pin-to-Pin compatibility with existing competitors devices **reduces development time and effort**

Two LIN Transceivers in one package reduced layout with placement options.
Available in **DSO-14** and **TSO-14**



Infinion's Automotive Network ICs

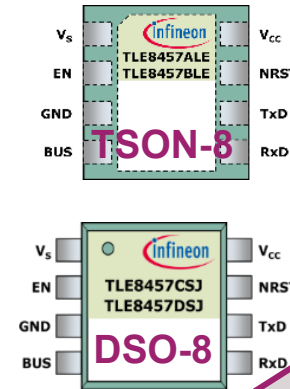
LIN LDO Product Family: LIN transceiver with integrated LDO



Feature Scalability and two package options



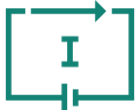
- A 5V output V-Reg w/timeout
- B 3.3V output V-Reg w/timeout
- C 5V output V-Reg w/o timeout
- D 3.3V output V-Reg w/o timeout



Key Value Proposition



Protection through VCC under-voltage reset

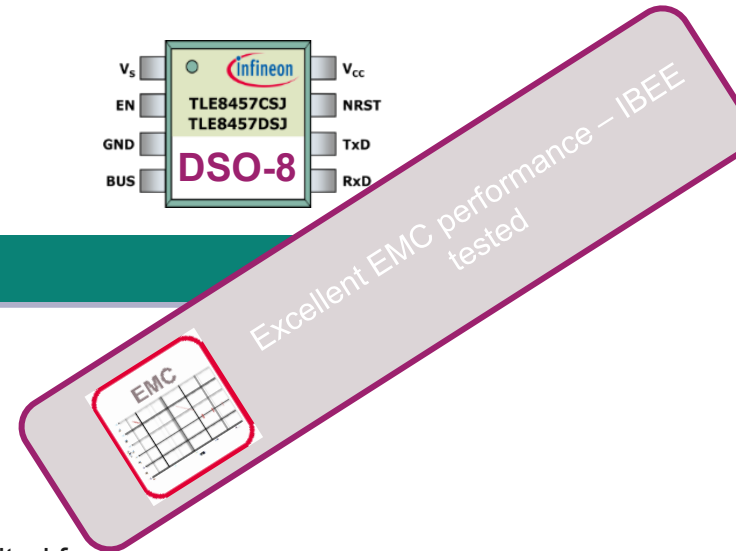


Ultralow
Quiescent current

Ultralow quiescent current of 20µA in stand-by mode, especially suited for permanently supplied applications



Bi-directional bus communication compliant with LIN specification 2.2A and SAE J2602



Applications



Pumps



Fans



Rain sensor

Infinion's Automotive Network ICs

TLE7257SJ/LE & TLE7258SJ/LE Basic LIN Transceiver



Key Features



- Power up in Sleep or power up in STB mode
- Excellent ESD robustness
- Available in DSO-8 and TSON-8
- TSON-8 package supports Automated Optical Inspection (AOI)

Key Value Proposition



Especially suitable for partially supplied networks due to low leakage current on the BUS pin



Pin-to-Pin compatibility with existing competitors devices **reduces development time and effort**



Ultralow
Quiescent
current

Ultralow quiescent current of 10µA in sleep mode



Applications



Park assist



Seat heating



Car lighting

CAN Transceivers with Flexible Data (FD)

CAN Transceivers

Key features

- Extensive portfolio for versatile applications
- Different package solutions
- Backward pin to pin compatible with previous product versions
- Very low CAN bus leakage current
- Following newest standards and certification

Customer benefits

- Enable design flexibility across a wide range of automotive applications.
- Reducing layout efforts
- Easy transition towards higher speed solutions
- Low power consumption during low-power state
- Easy implementation into new platforms with newest requirements

Applications



Radar



Car lighting



Infotainment



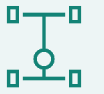
Dashboard



Lane assist



Central gateway



Transmission

	TLE9350Bx	TLE9350Bxx	TLE9350BVx	TLE9351Bx	TLE9371x	TLE9351BVx	TLE9371Vx	TLT9251VLE	TLE9252Vx	TLE9255Wx	TLT9252VLC	TLT9255WLC
5MBit/s	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓
8MBit/s					✓		✓					
Vio Pin		✓	✓			✓	✓	✓	✓	✓	✓	✓
Standby Mode				✓	✓	✓	✓	✓	✓	✓	✓	✓
Bus Wake-Up				✓	✓	✓	✓	✓	✓	✓		
AEC-Q100 Grade 0								✓			✓	✓
Receive Only / Power Save	✓											
Receive Only Mode		✓										
Power Save Mode			✓									
Wake-up Input									✓	✓	✓	✓
Inhibit output									✓	✓	✓	✓
Partial Networking										✓		✓
Error detection									✓		✓	

Offering unique solutions to satisfy developments towards „In Vehicle Network“ segment



LIN 20KBit/s	LIN 20KBit/s	LIN 20KBit/s
TLE7257SJ/LE TLE7258SJ/LE TLE7259-3x	TLE8457xSJ TLE8457xLE	TLE7268SK TLE7268CL
		

Integration

- › To date: More than 1 Billion LIN transceivers shipped
- › More than 20 different LIN products
- › Compliant to ISO 17987-4
- › World-wide release



FD

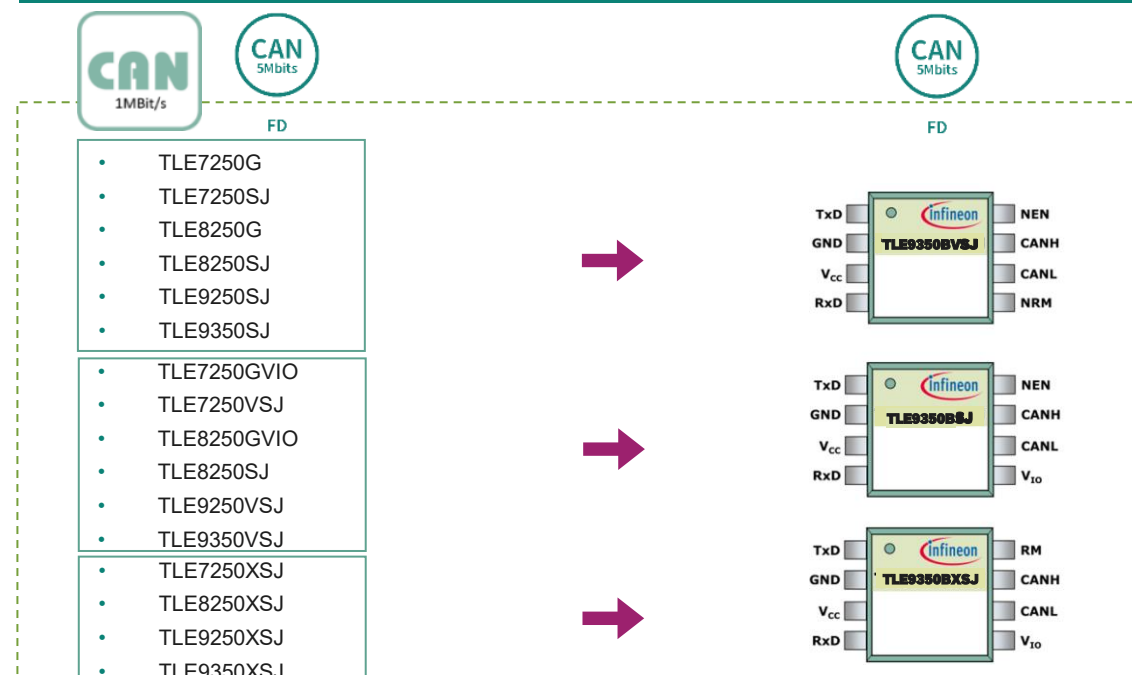
CAN FD 5MBit/s	CAN FD 5MBit/s	CAN FD 5MBit/s	CAN FD 8MBit/s
TLE925x	TLE935xBx		TLE937x with Signal Improvement Concept
			

Performance

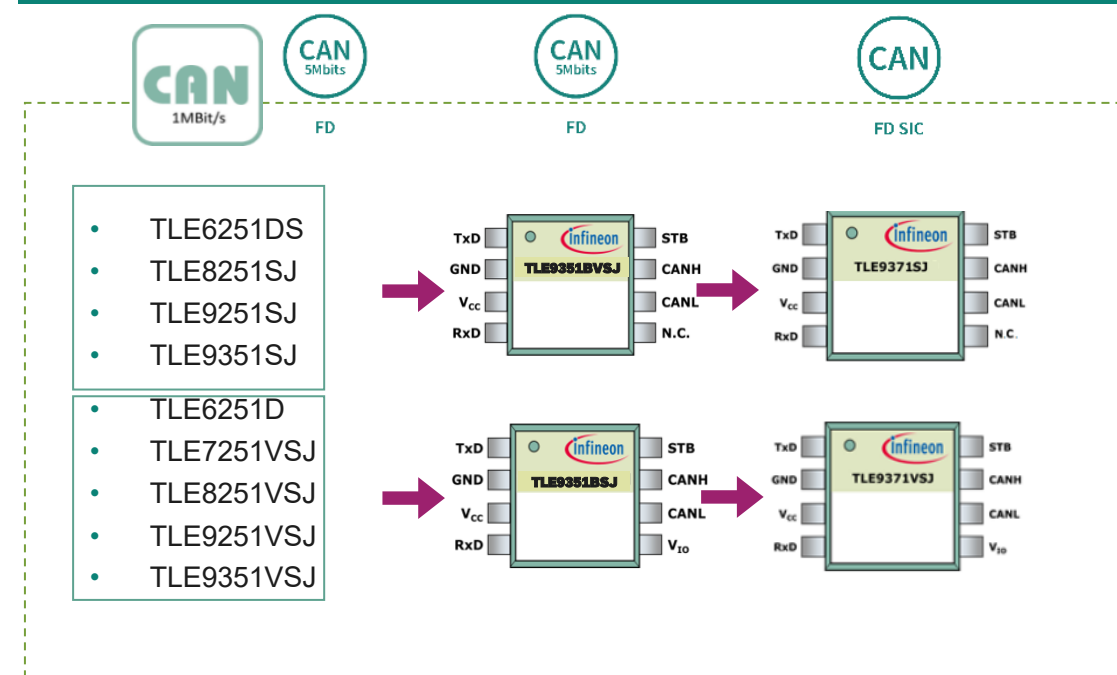
- › To date: More than 2.7 Billion CAN transceivers shipped
- › More than 50 different CAN products
- › ISO 11898-2 ed 2024 compliant
- › World-wide release

Infineon's Automotive Network ICs: Ease of Change

CAN FD 5MBit/s without wake



CAN FD 5MBit/s with wake



CAN FD 5MB variant is backwards compatible to 1MBit/s and 2MBit/s



CAN FD SIC is backwards compatible to TLE9251x, TLE9351x and TLE9351Bx family



Fulfills latest ISO Standard (11898-2: 2016)



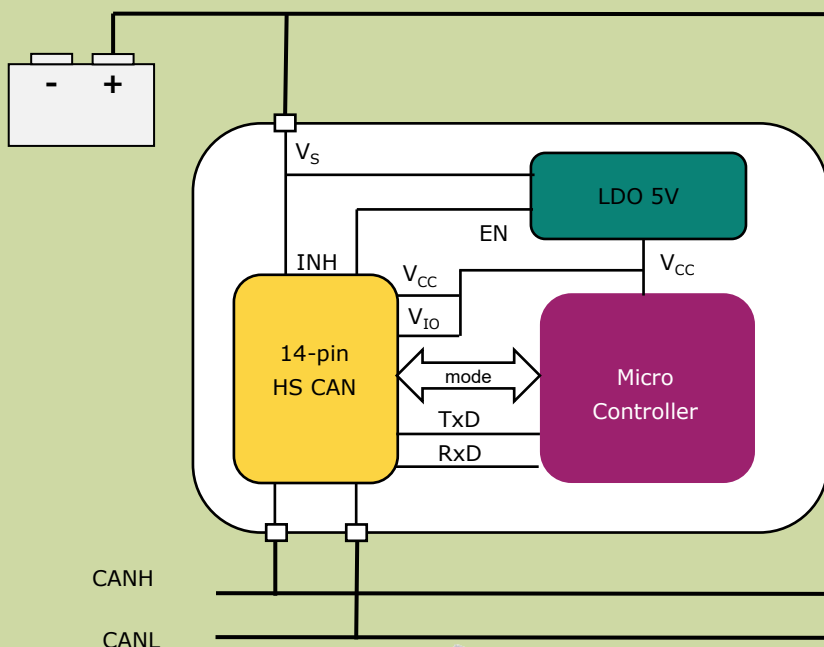
Worldwide OEM release



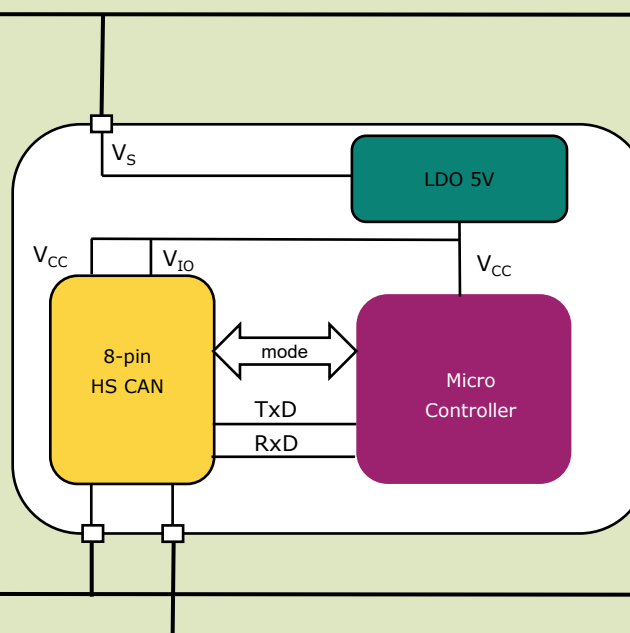
Infiniteon's Automotive Transceivers CAN FD Family

ECU permanent connected to V_{BAT}
(CAN Bus Wake up required)

14 Pin Transceiver with INH

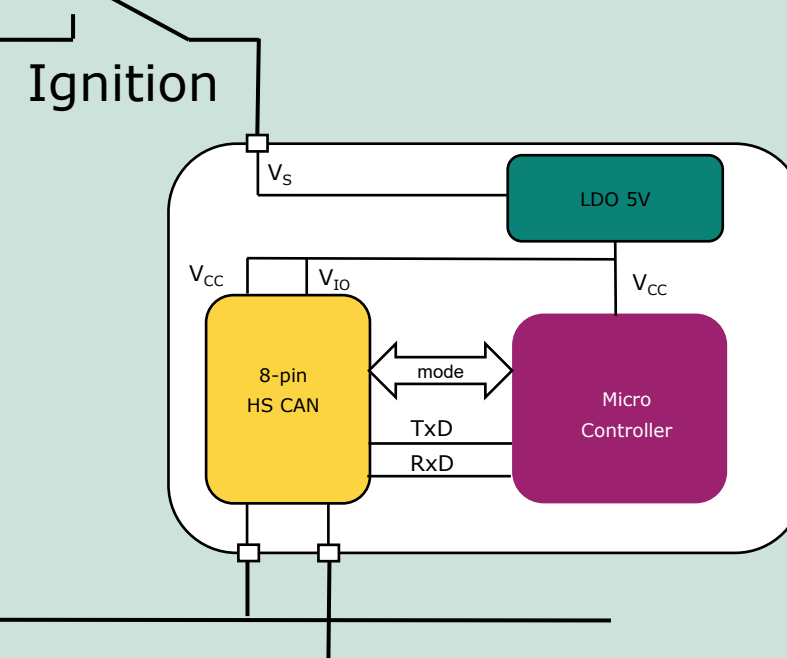


8 Pin Transceiver

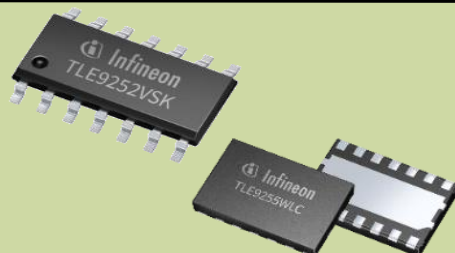


Switched powered ECU

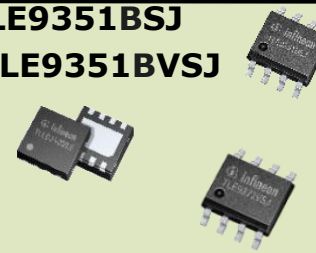
8 Pin Transceiver



TLE9252VSK
TLE9252VLC
TLE9255WSJ
TLE9255WLC



TLE9351SJ > TLE9351BSJ
TLE9351VSJ > TLE9351BVSJ
TLE9251LE
TLE9251VLE
TLE9371SJ
TLE9371VSJ



TLE9350SJ > TLE9350BSJ
TLE9350VSJ > TLE9350BVSJ
TLE9350XSJ > TLE9350BXSJ
TLE9250LE
TLE9250VLE
TLE9250XLE



Infinion Automotive In Vehicle Networking

CAN FD Product Overview



FD

Bus type	ECU connected to VBAT (Bus Wake up)		Switched powered ECU (no bus wake-up)
	Microcontroller boot time critical: NO (14 Pin Device with INH Pin required)	Microcontroller boot time critical: NO (8 Pin Device required)	
	TLE9252 Family: - USP: Dual power supply concept to avoid disruption of communication during cranking - USP: WUP t_{Filter} (0.5µs – 1.8µs) 1 device meets worldwide requirement. - USP: Lowest current consumption in the market (20µA@125°C) TLE9252V (CAN FD 5MBit/s)	TLE9251x/TLE9351x/TLE9351Bx Family: - Vio supplied wake receiver - USP: WUP t_{Filter} (0.5µs – 1.8µs) 1 device meets worldwide requirement. TLE9251VLE/LE (CAN FD 5MBit/s) TLE9351VSJ/SJ (CAN FD 5MBit/s) TLE9351BSJ/BSJ (CAN FD 5MBit/s) TLE9371x Family Signal Improved: Up to 8MBit/s - Pin compatible TLE9251x/TLE9351xfamily - Robust communication in complex networks through ringing prevention TLE9371VSJ/SJ (CAN FD SIC 8MBit/s)	TLE9250x/TLE9350x/TLE9350Bx Family: - ESD 8KV (HBM) - Optimized cost TLE9250VLE/XLE/LE (CAN FD 5MBit/s) TLE9350VSJ/XSJ/SJ (CAN FD 5MBit/s) TLE9350BSJ/BSJ (CAN FD 5MBit/s)
	TLE9255x Family: - USP: WUP t_{Filter} (0.5µs – 1.8µs) - USP: Lowest current consumption in the market (20µA@125C) TLE9255W (CAN FD 5MBit/s)		

CAN FD 5MBit/s – portfolio extended (2nd Generation)

TLE935xBx - Overview



Product	VIO supply	Bus wake	CAN FD	Pin 8	Package	Voltage range
TLE9350BSJ / LE	No V _{IO}	No	5MBit/s	Not Enable	PG-DSO-8 / PG-TSON-8	4.5V-5.5V
TLE9350BVSJ / LE	3.3V-5V	No	5MBit/s	Not Enable	PG-DSO-8 / PG-TSON-8	4.5V-5.5V
TLE9350BXSJ / LE	3.3V-5V	No	5MBit/s	Receive only	PG-DSO-8 / PG-TSON-8	4.5V-5.5V
TLE9351BVSJ / LE	3.3V-5V	Yes	5MBit/s	Stand-by	PG-DSO-8 / PG-TSON-8	4.5V-5.5V
TLE9351BSJ / LE	No VIO	Yes	5MBit/s	Stand-by	PG-DSO-8 / PG-TSON-8	4.5V-5.5V

TLE935x is backwards compatible to 1MB (TLE625x), 2MB (TLE725x, TLE825x), 5MB (TLE9250x, TLE935x)



Fulfills latest ISO Standard ISO 11898-2: 2024



IBEE EMC certified



DSO8 package version in production. TSON8 package versions in release.



TLE935xBxLE CAN FD 5MB takes over from TLE9250xxLE, superior performance while reducing design complexity and external components



Main features

- Excellent ESD robustness, Bus ESD robustness improved up-to $\pm 10V$
- Lower CAN bus leakage current in power-down state
- Lower electromagnetic emission (EME) allows the use without additional common mode choke
- Wide compatibility—five TLE935xBx devices replace up to 25 predecessors
- Compact footprint (3x3mm)

Marketing plan

- Predecessor (TLE9250x) will be set to NFND only to keep supporting running business, and smoothly shifting to the newer and better performance version (TLE935xBx)

Product Information

- In production
- Webpage links: [TLE9350BLE](#), [TLE9350BVLE](#), [TLE9350BXLE](#), [TLE9351BLE](#), [TLE9351BVLE](#)

Applications



Engine Management



Transmission



Electric power steering



Central gateway

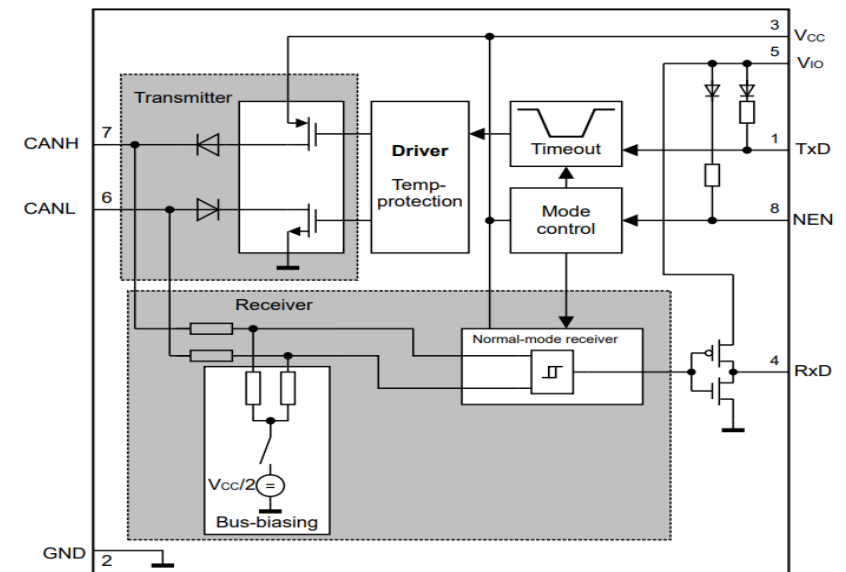


PG-TSON-8

Customer Benefits

- Better ESD immunity on wiring without extra component.
- Higher system efficiency
- High volume cost saving on common mode choke (CMC)
- Easy transition for new projects. Full HW and SW compatibility with 1MBit/s, 2MBit/s and 5MBit/s CAN device
- Saves PCB area / smaller footprint

Block Diagram



Infinion's Automotive Network ICs : TLE9351Bx

CAN FD 5MB with Bus Wake-up



Features & benefits

- Bus wake-up pattern (WUP) function with optimized filter time for worldwide OEM usage
- Stand-by mode with minimized quiescent current
- Transmitter supply VCC can be disabled in stand-by mode to further minimize quiescent current
- Fully compliant to ISO 11898-2:2024 and SAE J2284-4/-5
- Loop delay symmetry for CAN FD data frames up to 5 MBit/s
- Very low electromagnetic emission (EME) allows the use without additional common mode choke
- VIO input for voltage adaption to the microcontroller interface (3.3 V or 5 V)
- Excellent ESD robustness
- TxD time-out function
- Very low CAN bus leakage current in power-down state
- Overtemperature protection
- Protected against automotive transients according to ISO 7637 and SAE J2962-2
- Green Product (RoHS compliant)

Pinout



PG-DSO-8



PG-TSON-8



RoHS



FD



Automotive

Applications



Central gateway



Electric power steering



Transmission



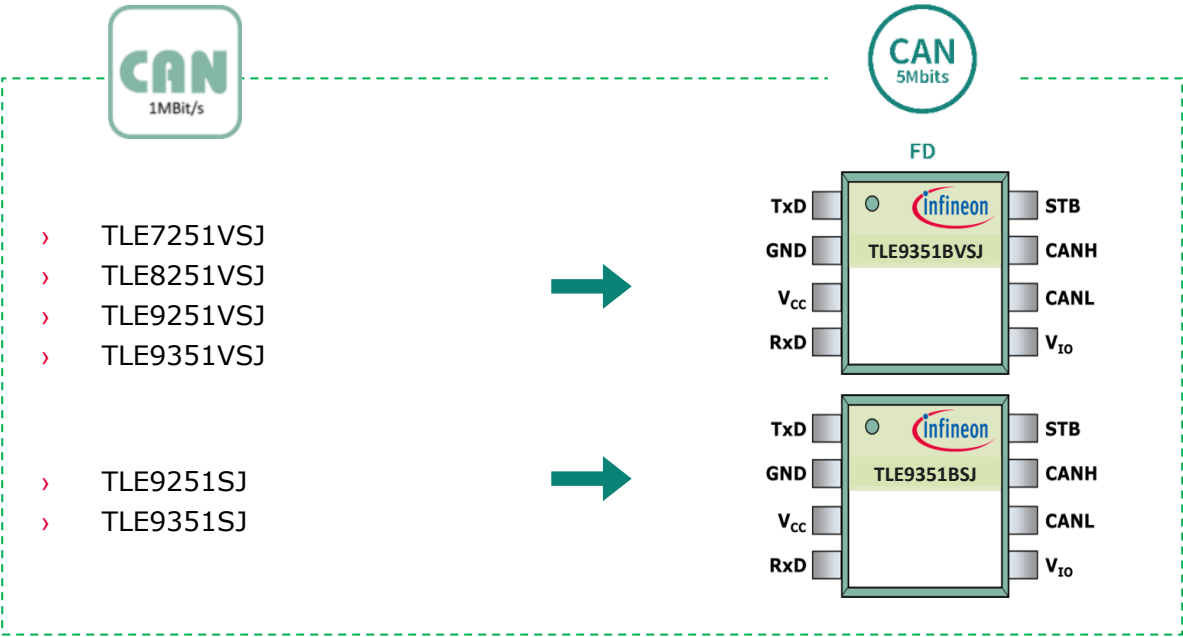
Engine Management

Infiniteon's Automotive Network ICs : TLE9351Bx

CAN FD 5MB with Bus Wake-up & Worldwide release



Product	VIO supply	Bus wake	CAN FD	Package
TLE9351BVSJ	3.3V-5V	Yes	5MBit/s	PG-DSO-8
TLE9351BSJ	No VIO	Yes	5MBit/s	PG-DSO-8



CAN FD 5MB

- ✓ CAN FD 5MB variant is backwards compatible to 1MB, 2MB and 5MB
- ✓ Fulfills latest ISO Standard 11898-2:2024
- ✓ IBEE EMC certified
- ✓ Extended voltage range

Infinion's Automotive Network ICs : TLE9350Bx

CAN FD 5MB w/o Wake-up



Features & benefits

- Certified according to VeLIO (Vehicle LAN Interoperability and Optimization) test requirements
- Power-save mode
- Fully compliant to ISO 11898-2:2024 and SAE J2284-4/-5
- Loop delay symmetry for CAN FD data frames up to 5 MBit/s
- Very low electromagnetic emission (EME) allows the use without additional common mode choke
- VIO input for voltage adaption to the microcontroller interface (3.3V or 5V)
- Excellent ESD robustness
- TxD time-out function
- Very low CAN bus leakage current in power-down state
- Overtemperature protection
- Protected against automotive transients according to ISO 7637 and SAE J2962-2
- Green Product (RoHS compliant)

Package



PG-DSO-8



PG-TSON-8



RoHS



FD



Automotive

Applications



Central gateway



Electric power steering



Transmission



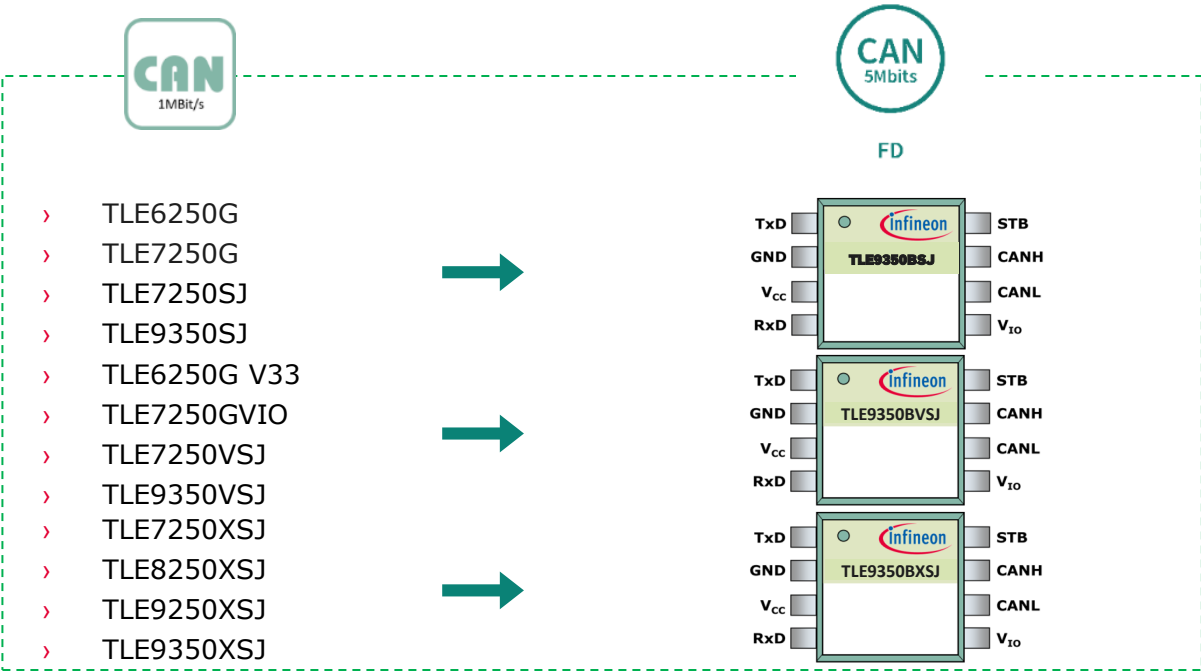
Engine Management

Infinion's Automotive Network ICs : TLE9350Bx

CAN FD 5MB w/o Wake-up & Worldwide release



Product	VIO supply	Bus wake	CAN FD	Pin 8	Package
TLE9350BSJ	No V _{IO}	No	5MBit/s	Not Enable	PG-DSO-8
TLE9350BVSJ	3.3V-5V	No	5MBit/s	Not Enable	PG-DSO-8
TLE9350BXSJ	3.3V-5V	No	5MBit/s	Receive only	PG-DSO-8



CAN FD 5MB

- ✓ CAN FD 5MB variant is backwards compatible to 1MB, 2MB and 5MB
- ✓ Fulfills latest ISO Standard (Edition 2024)
- ✓ IBEE EMC certified
- ✓ Extended voltage range

Infineon's Automotive Network ICs

TLE9252VSK TLE9252VLC: Dual Power Supply Concept



Product	VIO supply	Bus wake	CAN FD	Pin 14/Pin 7	Package	Power Supply	Voltage range
TLE9252VSK	3.3V-5V	Yes	Up to 5MBit/s	CSN/INH	PG-DSO-14	Dual (VBAT +VCC)	-0.3V-6.0V
TLE9252VLC	3.3V-5V	Yes	Up to 5MBit/s	CSN/INH	PG-TSON-14	Dual (VBAT +VCC)	-0.3V-6.0V
TLT9252VLC 	3.3V-5V	Yes	Up to 5MBit/s	CSN/INH	PG-TSON-14	Dual (VBAT +VCC)	-0.3V-6.0V

Compatible to 1MB (TLE625x), 2MB (TLE725x, TLE825x), 5MB (TLE9250x, TLE935x) and other components on the market



Approved by OEMs without external ESD protection



Fulfill latest ISO Standard (ISO 11898-2: 2024)



In production



TLE9252VSK/VLC: CAN FD 5MB with Sleep mode and lowest current consumption in Sleep mode

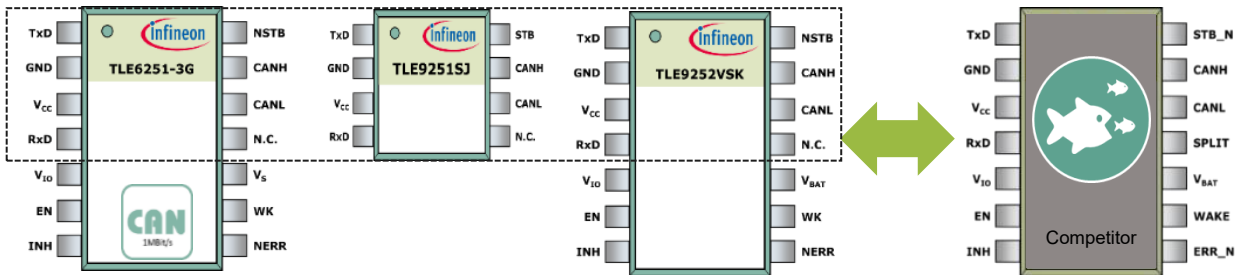


FD

e-Learning



Compatibility



USP

Dual power supply concept

Description

Internal state machine supplied by VBAT or VCC

Benefits

No disruption of communication during VBAT cranking

Vcc under-voltage diagnosis via NERR pin

Description

Microcontroller is able to detect root cause of disabled transmitter

Benefits

During ramp-up, μC is able to verify if Vcc is in functional range and transmitter is enabled

Parameter	TLE9252V		A		B		C		D		Unit
	min	max	min	max	Min	max	min	max	min	max	
Current consumption V_{BAT} Sleep Mode		25 (18 @ 85°C)		30		30		50		28	μA



Radar



Car lighting



Infotainment



Dashboard

Infiniteon's Automotive Network ICs

TLE9255WSK/WLC, TL9255WLC: CAN FD Partial Networking



Product	VIO supply	Bus wake	CAN FD	Pin 14/Pin 7	Package	Voltage range
TLE9255WSK	3.3V-5V	Yes	Up to 5MBit/s	CSN/INH	PG-DSO-14	-0.3V-6.0V
TLE9255WLC	3.3V-5V	Yes	Up to 5MBit/s	CSN/INH	PG-TSON-14	-0.3V-6.0V
TL9255WLC  Grade 0+	3.3V-5V	Yes	Up to 5Mbit/s	CSN/INH	PG-TSON-14	0.3V-6.0V

TLE9255WSK/WLC/TL9255WLC are backwards compatible to 1MB (TLE625x), 2MB (TLE725x, TLE825x), 5MB (TLE9250x, TLE935x)



TL9255WLC higher ambient operation temperature and longer lifetime, suitable for harsh environments



Fulfills latest ISO Standard (ISO 11898-2: 2024)

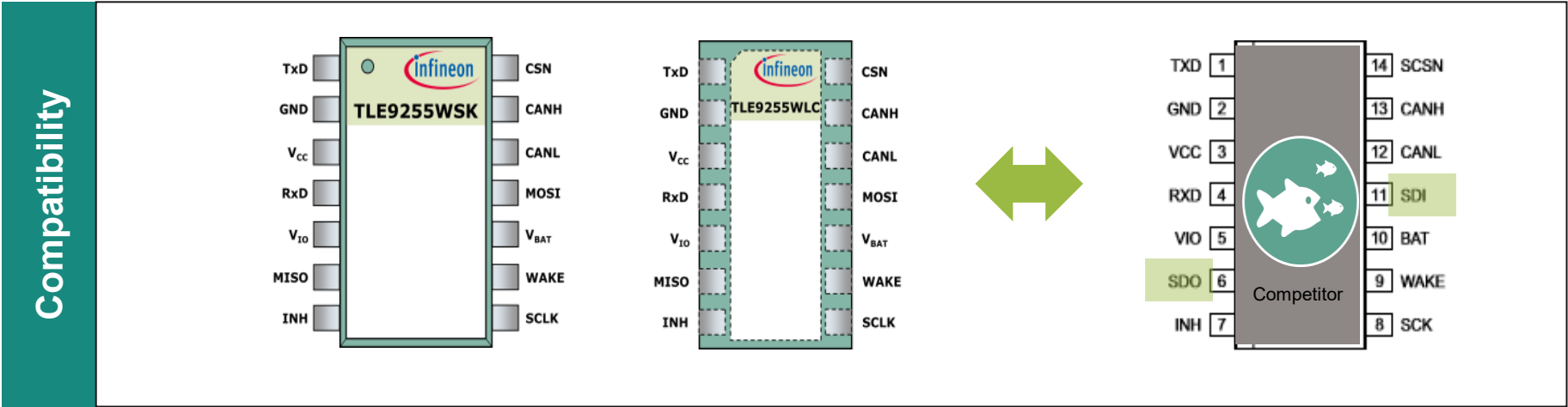


In production



Infinion's Automotive Network ICs

TLE9255WSK/WLC: 14-pin CAN with Partial networking



Comparison

Parameter	TLE9255WSK			Competitor 1			Competitor 2		
	Min	Max	Unit	Min	Max	Unit	Min	Max	Unit
I_{BAT} in sleep mode		20@125°C	μA		59@85°C	μA		30@85°C	μA
I_{BAT} in normal mode		1.3	mA		1.5	mA		1.5	mA
Approved w/o external ESD protection US OEMs	YES			NO			NO		

- ✓ Reduced layout efforts with placement options
- ✓ Lowest current consumption I_{BAT} Sleep mode @125°C: 20μA

CAN FD with Grade "0+" Capability

Offering solutions to satisfy developments towards „In Vehicle Network“ segment



FD



Grade 0+



LIN 20KBit/s
TLE7257SJ/LE
TLE7258SJ/LE
TLE7259-3x

LIN 20KBit/s
TLE8457xSJ
TLE8457xLE

LIN 20KBit/s
TLE7268SK
TLE7268CL

Integration

- › To date: More than 1 Billion LIN transceivers shipped
- › More than 20 different LIN products
- › Compliant to ISO 17987-4
- › World-wide release

FD

CAN FD 5MBit/s

TLE925x

CAN FD 5MBit/s

TLE935xBx

CAN FD 5MBit/s

“Endurance”

CAN FD 8MBit/s

TLE937x
with
Signal
Improvement
Concept

Performance

- › To date: More than 2.7 Billion CAN transceivers shipped
- › More than 50 different CAN products
- › ISO 11898-2 ed 2024 compliant
- › World-wide release

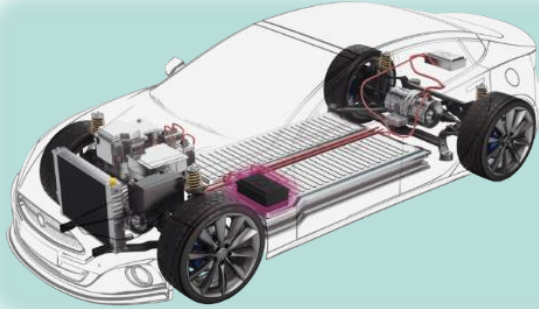
Offering unique solutions to satisfy developments towards „In Vehicle Network“ segment



FD



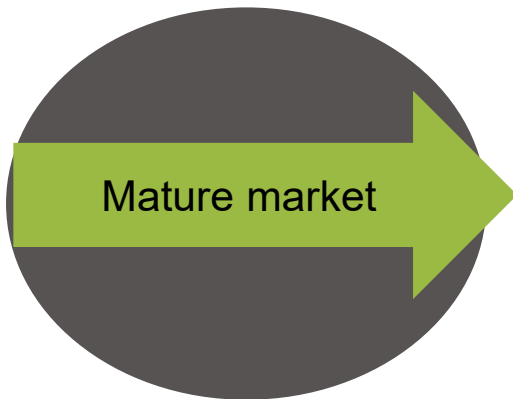
Grade 0+



❖ CAN FD with Grade 0+
Robustness qualification approach beyond AEC Q-100

Enhancing CAN FD 5MB Product Portfolio

TLE... products (Grade 1)



Volumes remain high
but slow growth

Higher temperature
(T ambient >150°C)

Longer lifetime
(>8.000h)



TLT... products (Grade 0+)



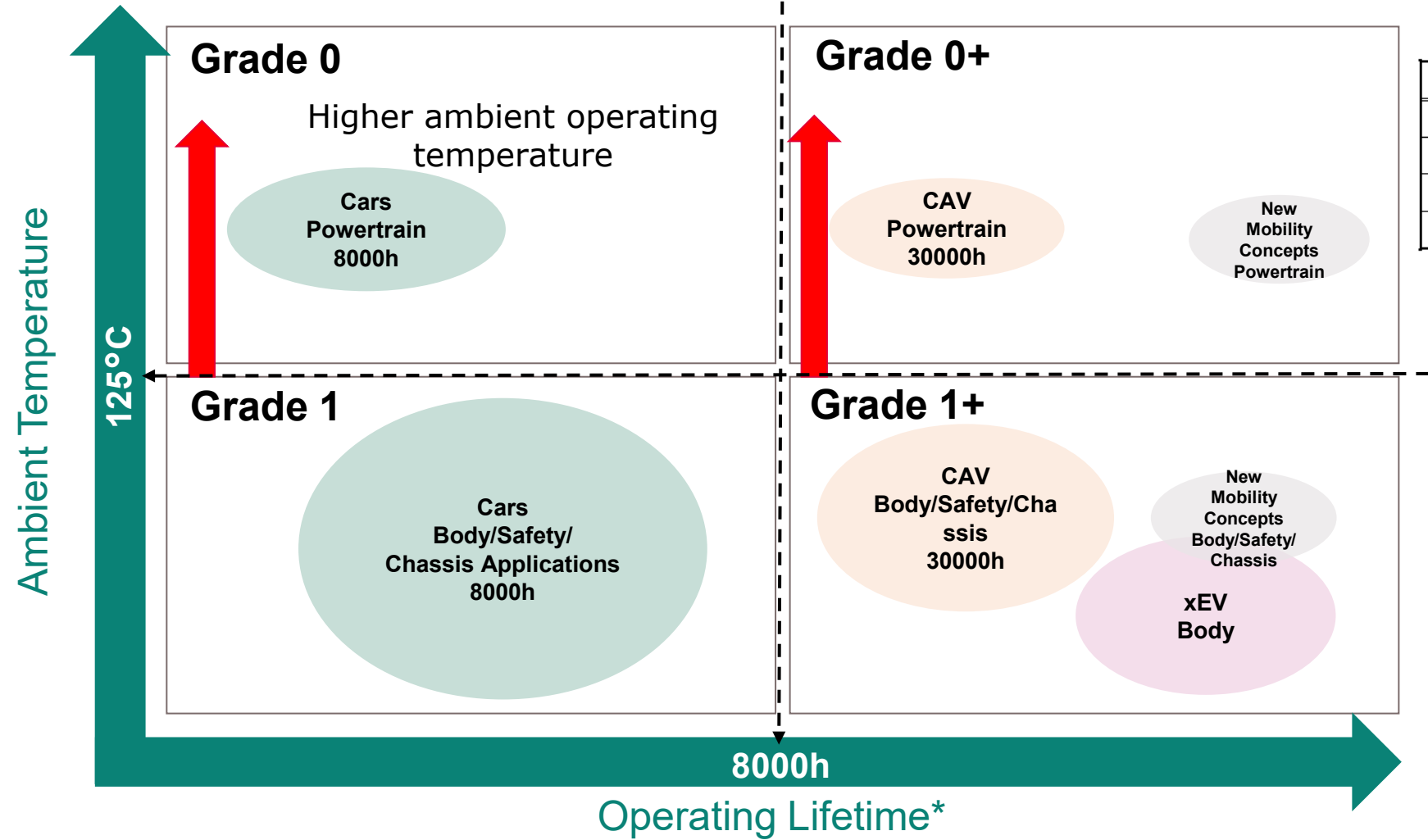
Volumes are low
but high growth

Target Application Landscape within Infineon Endurance Grades

AEC-Q100 Rev. H Grades:

Table 1: Part Operating Temperature Grades

Grade	Ambient Operating Temperature Range
0	-40°C to +150°C
1	-40°C to +125°C
2	-40°C to +105°C
3	-40°C to +85°C



*product lifetime pending on mission profile

Infineon's Automotive Network ICs:

CAN FD Grade 0+ higher operating temperature and extended lifetime



FD



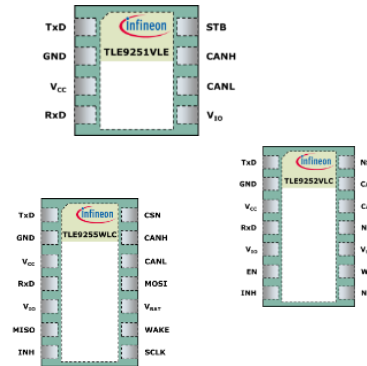
Grade 0+



Extended temperature range and feature scalability



- Available in TSON-14, TSON-8 or DSO-14
- With bus wake up, sleep mode or Partial Networking



Key Value Proposition



AEC-Q100 Grade 0 (Ta: -40°C to +150°C) qualification for high temperature mission profiles



ESD

Excellent ESD robustness, up to ± 11 kV according to IEC61000-4-2



Very low electromagnetic emission allows the use without additional common mode choke



PN

Available also as Partial Networking allowing the usage of microcontrollers in CAN FD networks, which are not CAN FD capable

Applications



Engine Management



Transmission



Central gateway

CAN FD 5MB with Grade „0+“ TL925x in TSON Package



FD



Grade 0+



Bus type	ECU connected to VBAT (Bus Wake up)	
	Microcontroller boot time critical: NO (14 Pin Device with INH Pin required)	Microcontroller boot time critical: NO (8 Pin Device required)
	<u>TLT9252VLC:</u> › T_{ambient} -40 to +150°C › USP: Dual power supply concept to avoid disruption of communication during cranking › USP: WUP t_{Filter} (0.5µs – 1.8µs) 1 device meets worldwide requirement. › USP: Lowest current consumption in the market (20µA@125°C)  TLT9252VLC (CAN FD 5MBit/s)	<u>TLT9251VLE:</u> › T_{ambient} -40 to +150°C › Vio supplied wake receiver › USP: WUP t_{Filter} (0.5µs – 1.8µs) 1 device meets worldwide requirement.  TLT9251VLE (CAN FD 5MBit/s)
	<u>TLT9255WLC:</u> › T_{ambient} -40 to +150°C › USP: WUP t_{Filter} (0.5µs – 1.8µs) › USP: Lowest current consumption in the market (20µA@125°C)  TLT9255WLC (CAN FD 5MBit/s)	

CAN FD with Signal Improvement Concept (SIC)

Offering solutions to satisfy developments towards „In Vehicle Network“ segment



FD SIC





LIN 20KBit/s
TLE7257SJ/LE
TLE7258SJ/LE
TLE7259-3x

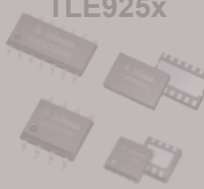

LIN 20KBit/s
TLE8457xSJ
TLE8457xLE


LIN 20KBit/s
TLE7268SK
TLE7268CL


Integration

- › To date: More than 1 Billion LIN transceivers shipped
- › More than 20 different LIN products
- › Compliant to ISO 17987-4
- › World-wide release




CAN FD 5MBit/s
TLE925x


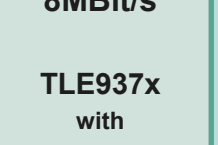

CAN FD 5MBit/s
TLE935xBx



CAN FD 5MBit/s
“Endurance”



Performance


CAN FD 8MBit/s
TLE937x
with
Signal
Improvement
Concept


- › To date: More than 2.7 Billion CAN transceivers shipped
- › More than 50 different CAN products
- › ISO 11898-2 ed 2024 compliant
- › World-wide release

2026-08-10

Public

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45

Infinion's Automotive Network ICs:

Infinion CAN FD SIC addresses changing, market requirements

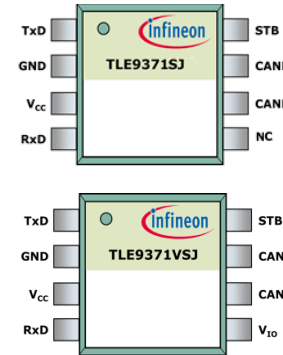


FD SIC

Extended temperature range and feature scalability



- Available in DSO-8 and TSON-8 package
- 2 modes of operation: Normal operating and stand-by mode
- VIO input for voltage adaption to the microcontroller interface (3.3 V or 5 V)
- Lowest current consumption in the stand-by mode



Applications



Lane assist



Central gateway

Key Value Proposition



Connection of more nodes with more functions possible, high accuracy of data transmission, data rate up to 8Mbit/s, use in complex networks



Supports new comfort features in body applications



Current

Dedicated low-power modes, like Stand-by mode provide very low quiescent currents while the device is powered up

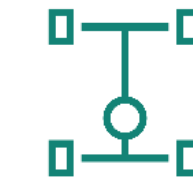
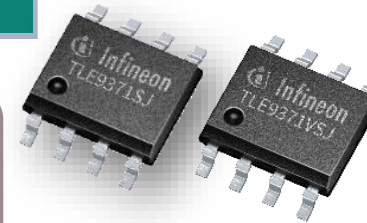


Reduced cost

Simplified wire harness & costs; more **positive CO₂ balance** in raw materials and production

ISO
11898-2
ed. 2024

CiA
601-4

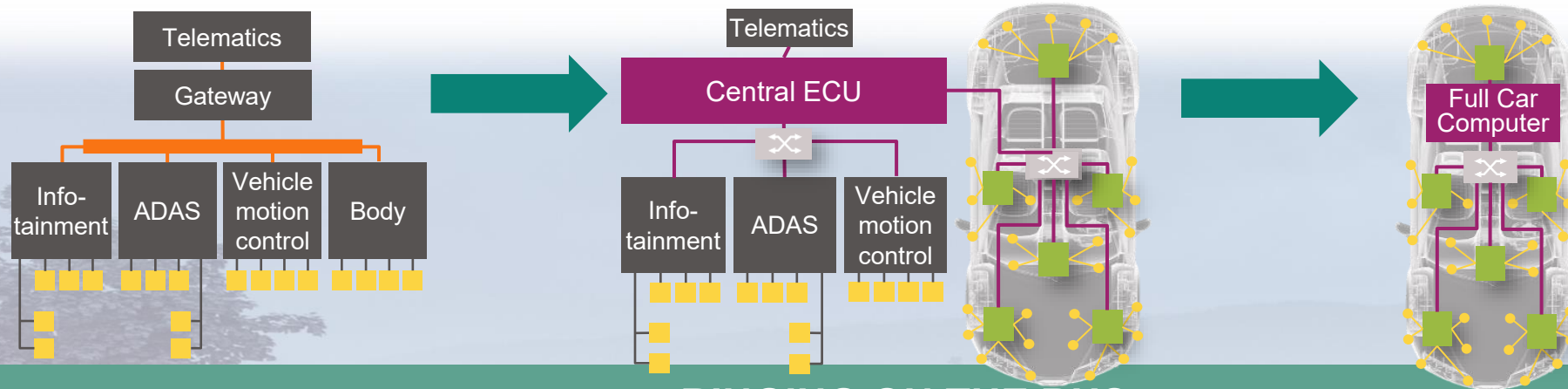


Transmission



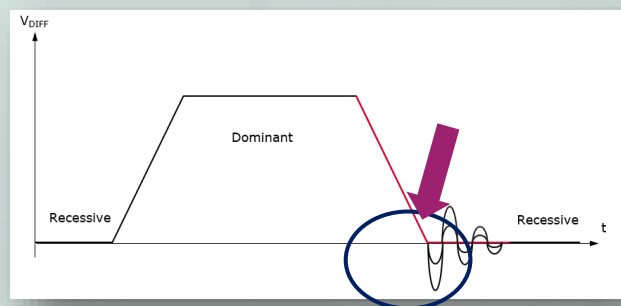
Autonomous driving

CAN FD SIC addresses IVN Trends



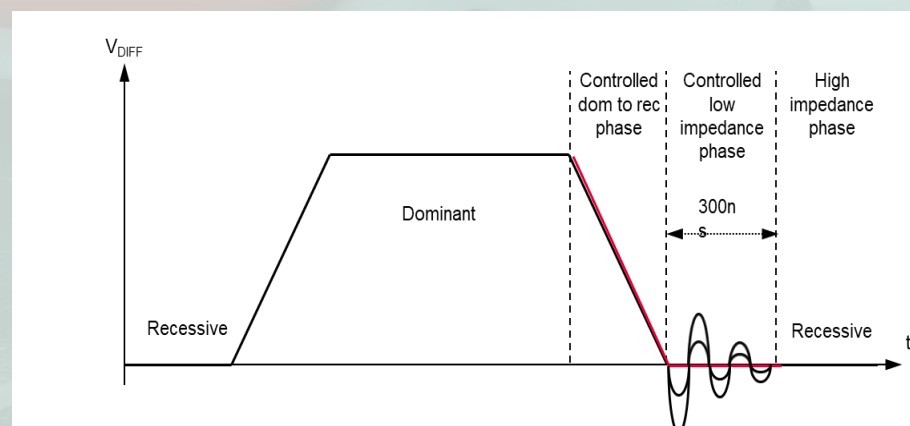
RINGING ON THE BUS,

is the limiting factor to support trends towards Full Car Computer



Ringing caused by:

- Length of the stubs
- Number of nodes in the network
- Kind of topology
- Impedance mismatch of the wiring harness



The Ringing Prevention:

- The transceiver controls the dominant to recessive edge
- And afterwards drives the CAN Bus with a low impedance of 300ns
- **Benefits:**
- SIC guarantees a stable signal after state change to recessive
- No change of software or Microcontroller
- SIC enables flexibility to design larger topologies with increased data rate

CAN FD 8MBit/s – portfolio extended TLE9371x – Overview



Product	VIO supply	Bus wake	CAN FD	Pin 8	Package	Voltage range
TLE9371VSJ / LE	3.3V-5V	Yes	5MBit/s	Stand-by	PG-DSO-8 / PG-TSON-8	4.5V-5.5V
TLE9371SJ / LE	No VIO	Yes	5MBit/s	Stand-by	PG-DSO-8 / PG-TSON-8	4.5V-5.5V

TLE9371SJ/VSJ are already in Production



TLE937x is backwards compatible to 1MB, 2MB, 5MB



Fulfills latest ISO Standard ISO 11898-2: 2024



IBEE EMC certified



DSO8 package version in production. TSON8 package versions in release.



CAN FD Signal Improvement TLE9371SJ/VSJ

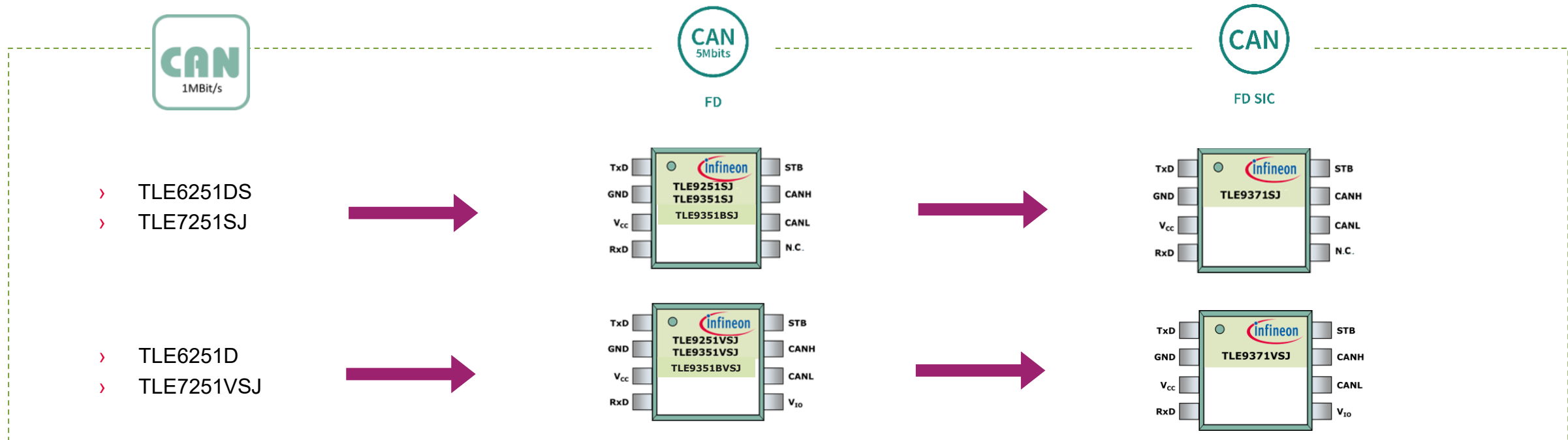
Ease of Change from Old to New CANs



FD SIC



CAN Classic & CAN FD becomes CAN FD SIC



CAN FD SIC variants are backwards compatible to 1MBit/s, 2MBit/s and 5MBit/s



CAN FD SIC variants fulfill latest ISO Standard (Edition 2024)



CAN FD SIC variants fulfill CiA601-4



CAN FD Signal Improvement TLE9371SJ/VSJ at Glance

CAN FD SIC	Package	Features
TLE9371VSJ	DSO-8	With bus wake up and Vio Pin
TLE9371SJ	DSO-8	With bus wake up and <u>NO</u> Vio Pin

The TLE937x products...

- › actively improve CAN signals to ensure **robust communication and faster bit rates** in large networks. Signal ringing, an artifact of **large, complex networks** with unterminated stubs, is significantly reduced, thus removing previous limitations in network topologies. Even lower specification cabling solutions can be considered.
- › achieve significantly faster bit rates of up to **8MBit/s** than conventional transceivers thanks to a highly symmetrical transmitter, ensuring very accurate and reliable bits generation on the bus.
- › provide much tighter control over the transmitted signal and guarantee faster and shorter bit times.
- › are available as **pin-compatible** replacements to conventional HS-CAN transceivers, thus allowing simple upgrades for existing designs and backward compatibility,
- › fulfil the ISO 11898-2 (2016) specification.
- › **In production**



CAN FD SIC is available in TSON: TLE9371xLE CAN FD SIC 8MB with Bus Wake-up for future network architecture



Main features

SIC reduces ringing at high speed

Dedicated low-power modes, like Stand-by mode, consumes very low quiescent currents while the device is powered up

Wake-up pattern detection

Compact footprint (3x3mm)

Product Information

- In production
- Webpage links: [TLE9371LE](#), [TLE9371VLE](#)

Applications



Engine Management



Transmission



Autonomous driving



Lane assist



Central gateway



PG-TSON-8

Customer Benefits

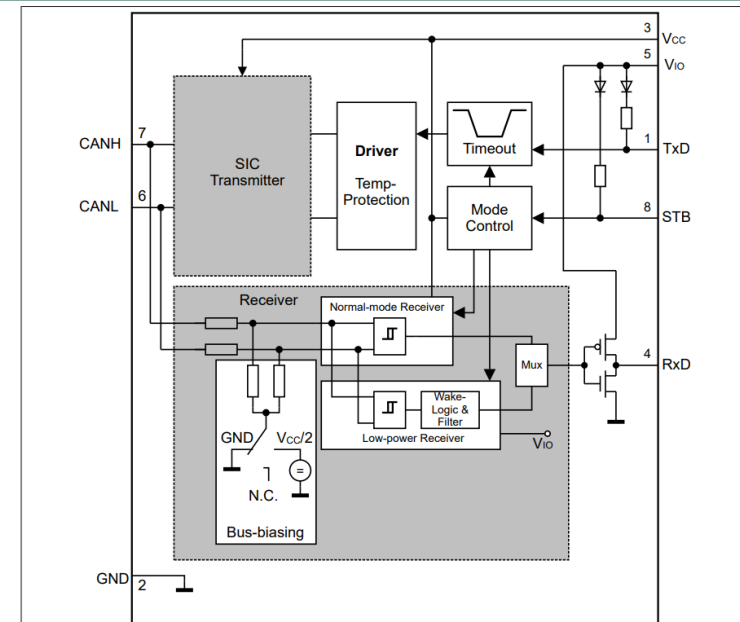
Supports growing complexity in new networks with increased number of nodes (sensors, zones..)

Higher system efficiency.

Eliminating false wake-up extends battery life.

Saves PCB area / smaller footprint

Block Diagram



Infinion's Automotive Network ICs : TLE9371xLE/SJ

CAN FD SIC 8MB with Bus Wake-up



Features & benefits

- Fully compliant to ISO 11898-2:2024 and SAE J2284-4/-5
- Connection of more nodes with more functions possible, high accuracy of data transmission, data rate up to 8Mbit/s, use in complex networks
- Very low electromagnetic emission (EME) allows the use without additional common mode choke
- VIO input for voltage adaption to the microcontroller interface (3.3 V or 5 V)
- Dedicated low-power modes, like Stand-by mode provide very low quiescent currents while the device is powered up
- Lowest current consumption in the stand-by mode
- Excellent ESD robustness
- 2 modes of operation: Normal operating and stand-by mode
- Overtemperature protection
- Protected against automotive transients according to ISO 7637 and SAE J2962-2
- Green Product (RoHS compliant)
- Compact footprint (3x3mm)

Package



PG-DSO-8



PG-TSON-8



RoHS



Pb



Hal



CAN
FD SIC



Automotive

Applications



Central
gateway



Lane assist



Autonomous
driving



Transmission



Engine Management

CAN FD SIC TLE9371SJ/VSJ - addressing the trends

Value Drivers	CAN FD SIC solution	Value
Increasing No. of nodes e.g. new sensors, new car architectures (zone)	Highly accurate transmitter allowing precise control of CANH and CANL signals, active drive of recessive edge and active signal improvement	Connection of more nodes to the network
Expanding CAN networks and emerging in new applications	Ringin in CAN networks significantly reduced, star-based typologies with higher data rates possible	Entry for more complex application e.g. autonomous driving with security requirements, new comfort features in a body applications
Pressure to optimized CAN networks: more efficient cables & connectors, higher data rates	- Increases maximum achievable CAN speed to 8MB/s - Increased EMC performance	Simple wire harness & costs; more positive CO₂ balance
CAN FD reached their limits	- Guaranteed CAN FD protocol operations under all conditions incl. error handling and arbitration scenarios - Fully interoperable with CAN XL protocol	No loss of network in case of single failure independently of CAN protocol; Drop-in replacement without adoption of Hardware or Software

Cross-selling

Mapping of OPTIREG™ linear with Transceivers

Find the right OPTIREG™ for your Transceiver in just a few clicks!



Scan



Click

Mapping OPTIREG™ linear with Transceivers

Infineon Transceivers	Scenario ¹	LDO is supplying...	Power Requirement			OPTIREG™ linear		
			Maximum Power Requirement, for Transceiver (real power pattern) mA	Maximum Power Requirement, for MC (Transceiver 1st Gen) ² mA	Total Power Requirement mA	Basic LDO	LDO with Enable	
FD	TLE9354B5J4LE TLE9371S4LE	Scenario 1 (9V7)	LDO Supplying (TRX+MC)	5V@15mA (max)	350	465	TL8650GATE V30	TL8650B0TE V30
		Scenario 2 (5V7)	LDO Supplying TRX	5V@10mA (max)	-	120	TL8650A4EP V30	TL8710B0EJ V30
		Scenario 3 (3.3V7)	LDO Supplying (TRX+MC)	3.3V@5mA (max)	350	355	TL8650A1E2 V30	TL8650B0TE V30
FD SIC	TLE9371S4LE	Scenario 2 (5V7)	LDO Supplying TRX	5V@10mA (max)	-	120	TL8650A4EP V30	TL8710B0EJ V30
		Scenario 3 (3.3V7)	LDO Supplying (TRX+MC)	3.3V@5mA (max)	350	355	TL8650A1E2 V30	TL8650B0TE V30
		Scenario 4 (5V7)	LDO Supplying (TRX+MC)	5V@10mA (max)	EN input pin on LDO supplying MC	470	-	TL8650B0TE V30
FD	TLE9352x/TLE9355x/TLE935x	Scenario 5 (3.3V7)	LDO Supplying (TRX+MC)	3.3V@5mA (max)	350	355	TL8650A1E2 V30	TL8650B0TE V30
		Scenario 6 (3.3V7)	LDO Supplying (TRX+MC)	3.3V@5mA (max)	EN input pin on LDO supplying MC	355	-	TL8650B0TE V30

¹Please refer to scenario slides.
²Transceiver 1st Gen is just an example for power requirement calculation, for more microcontrollers options please refer to our Mapping of OPTIREG™ product portfolio with various microcontrollers.

2025-01-09

restricted

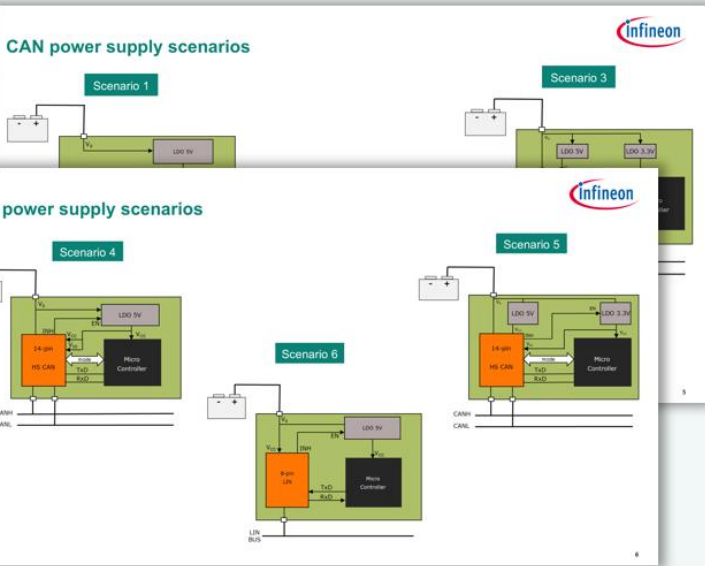
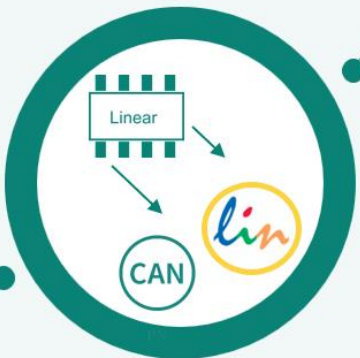
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3

Infineon Transceivers	Scenario ¹	LDO is supplying...	Power Requirement			OPTIREG™ linear	
			Maximum Power Requirement, for Transceiver (real power pattern) mA	Maximum Power Requirement, for MC (Transceiver 1st Gen) ² mA	Total Power Requirement mA	Basic LDO	LDO with Enable
LIN Basic and Dual	TL8725xTL8725xTL8725xTL8725x3x	Scenario 6	LDO Supplying (TRX+MC)	13.5V@130mA (max)	350	350	TL8650B0TE V30

¹Please refer to scenario slides.
²Transceiver 1st Gen is just an example for power requirement calculation, for more microcontrollers options please refer to our Mapping of OPTIREG™ product portfolio with various microcontrollers.

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Trainings

Transceiver trainings



Training name	Content
ATV: Automotive in-vehicle network CAN FD 5MB (S1/E1)	This training covers: • Main functions and different communication protocols • Advantages and benefits of Infineon's CAN FD 5MB transceivers • Overview of the CAN FD products
ATV: Automotive in-vehicle network CAN FD 5MB TLE9252VSK/VLC (S1/E1)	This training covers: • Main functions and different communication protocols • New ISO wake-up pattern • Benefits of the VIO pin • TLE9252VSK/VLC transceivers
New routing requirements in gateways and zone controllers	This training covers: • Definition of gateway and zone controllers • New routing requirements • Block diagrams for gateway and zone controller units
Infineon transceivers	This video covers: • Infineon's quality pillars • Customer benefits
LIN LDO 2nd generation	This video covers: • The fundamentals of LIN LDO • The TLE8457 product family and its key benefits • How our solution compares to competitive offerings • Typical LIN LDO applications and use cases



Click on the training title to access it

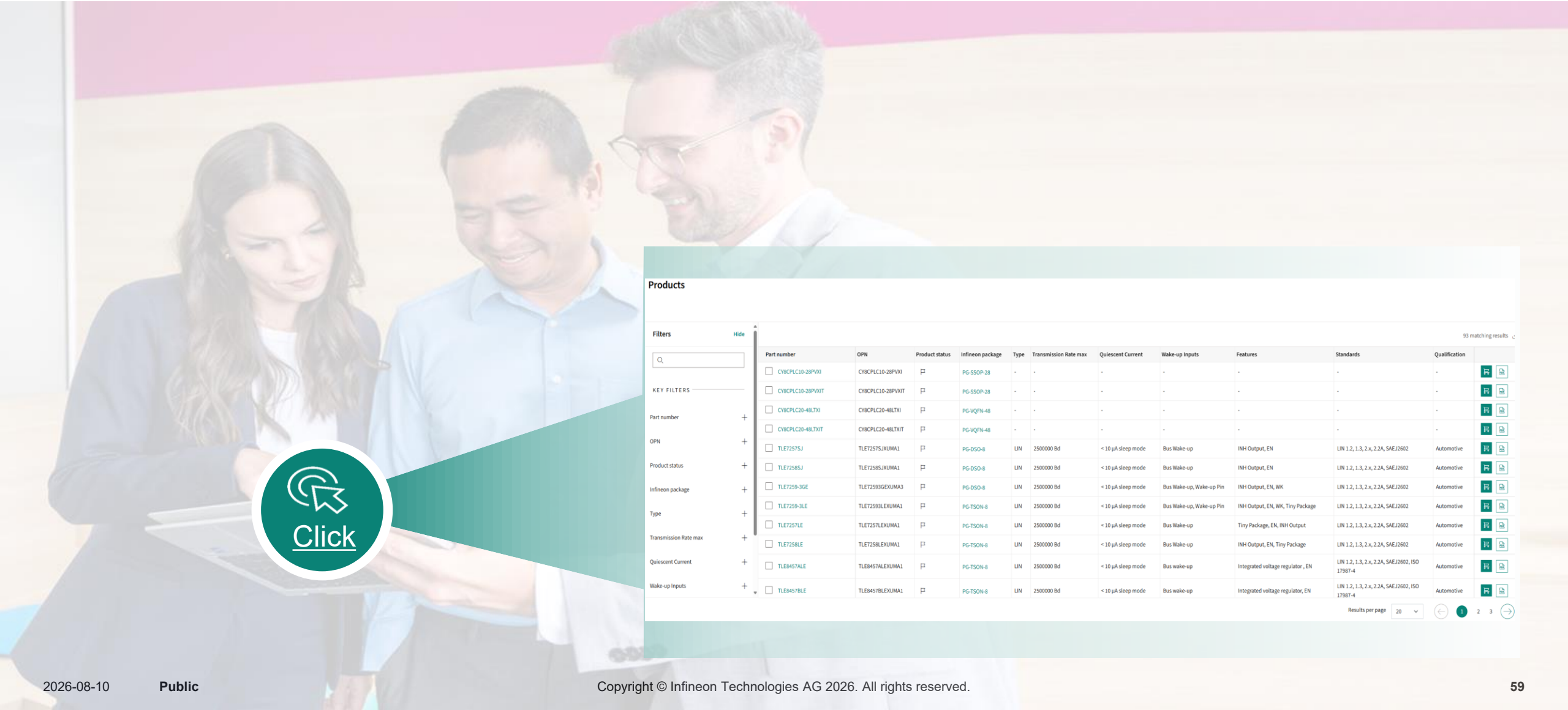
Supporting Tools & Documents

Transceiver

To ensure optimal selection, we provide a detailed selection tool



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Part number

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OPN

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Product status

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Infineon package

+

Type

+

Transmission Rate max

+

Quiescent Current

+

Wake-up inputs

+

Part number	OPN	Product status	Infineon package	Type	Transmission Rate max	Quiescent Current	Wake-up inputs	Features	Standards	Qualification	
☐ CY8CPLC10-28PVI	CY8CPLC10-28PVI	□	PG-SSOP-28	-	-	-	-	-	-	-	
☐ CY8CPLC10-28PVIT	CY8CPLC10-28PVIT	□	PG-SSOP-28	-	-	-	-	-	-	-	
☐ CY8CPLC20-48LTI	CY8CPLC20-48LTI	□	PG-VQFN-48	-	-	-	-	-	-	-	
☐ CY8CPLC20-48LTI	CY8CPLC20-48LTI	□	PG-VQFN-48	-	-	-	-	-	-	-	
☐ TLE7257SJ	TLE7257SJXUMA1	□	PG-DSO-8	LIN	2500000 Bd	< 10 µA sleep mode	Bus Wake-up	INH Output, EN	LIN 1.2, 1.3, 2.x, 2.2A, SAEJ2602	Automotive	
☐ TLE7258SJ	TLE7258SJXUMA1	□	PG-DSO-8	LIN	2500000 Bd	< 10 µA sleep mode	Bus Wake-up	INH Output, EN	LIN 1.2, 1.3, 2.x, 2.2A, SAEJ2602	Automotive	
☐ TLE7259-3GE	TLE72593GEXUMA3	□	PG-DSO-8	LIN	2500000 Bd	< 10 µA sleep mode	Bus Wake-up, Wake-up Pin	INH Output, EN, WK	LIN 1.2, 1.3, 2.x, 2.2A, SAEJ2602	Automotive	
☐ TLE7259-3LE	TLE72593LEXUMA1	□	PG-TSON-8	LIN	2500000 Bd	< 10 µA sleep mode	Bus Wake-up, Wake-up Pin	INH Output, EN, WK, Tiny Package	LIN 1.2, 1.3, 2.x, 2.2A, SAEJ2602	Automotive	
☐ TLE7257LE	TLE7257LEXUMA1	□	PG-TSON-8	LIN	2500000 Bd	< 10 µA sleep mode	Bus Wake-up	Tiny Package, EN, INH Output	LIN 1.2, 1.3, 2.x, 2.2A, SAEJ2602	Automotive	
☐ TLE7258LE	TLE7258LEXUMA1	□	PG-TSON-8	LIN	2500000 Bd	< 10 µA sleep mode	Bus Wake-up	INH Output, EN, Tiny Package	LIN 1.2, 1.3, 2.x, 2.2A, SAEJ2602	Automotive	
☐ TLE8457ALE	TLE8457ALEXUMA1	□	PG-TSON-8	LIN	2500000 Bd	< 10 µA sleep mode	Bus wake-up	Integrated voltage regulator, EN	LIN 1.2, 1.3, 2.x, 2.2A, SAEJ2602, ISO 17987-4	Automotive	
☐ TLE8457BLE	TLE8457BLEXUMA1	□	PG-TSON-8	LIN	2500000 Bd	< 10 µA sleep mode	Bus wake-up	Integrated voltage regulator, EN	LIN 1.2, 1.3, 2.x, 2.2A, SAEJ2602, ISO 17987-4	Automotive	

Results per page 20

Cross Reference

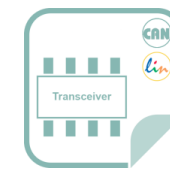
Enter partial or full manufacturer's device number and manufacturer



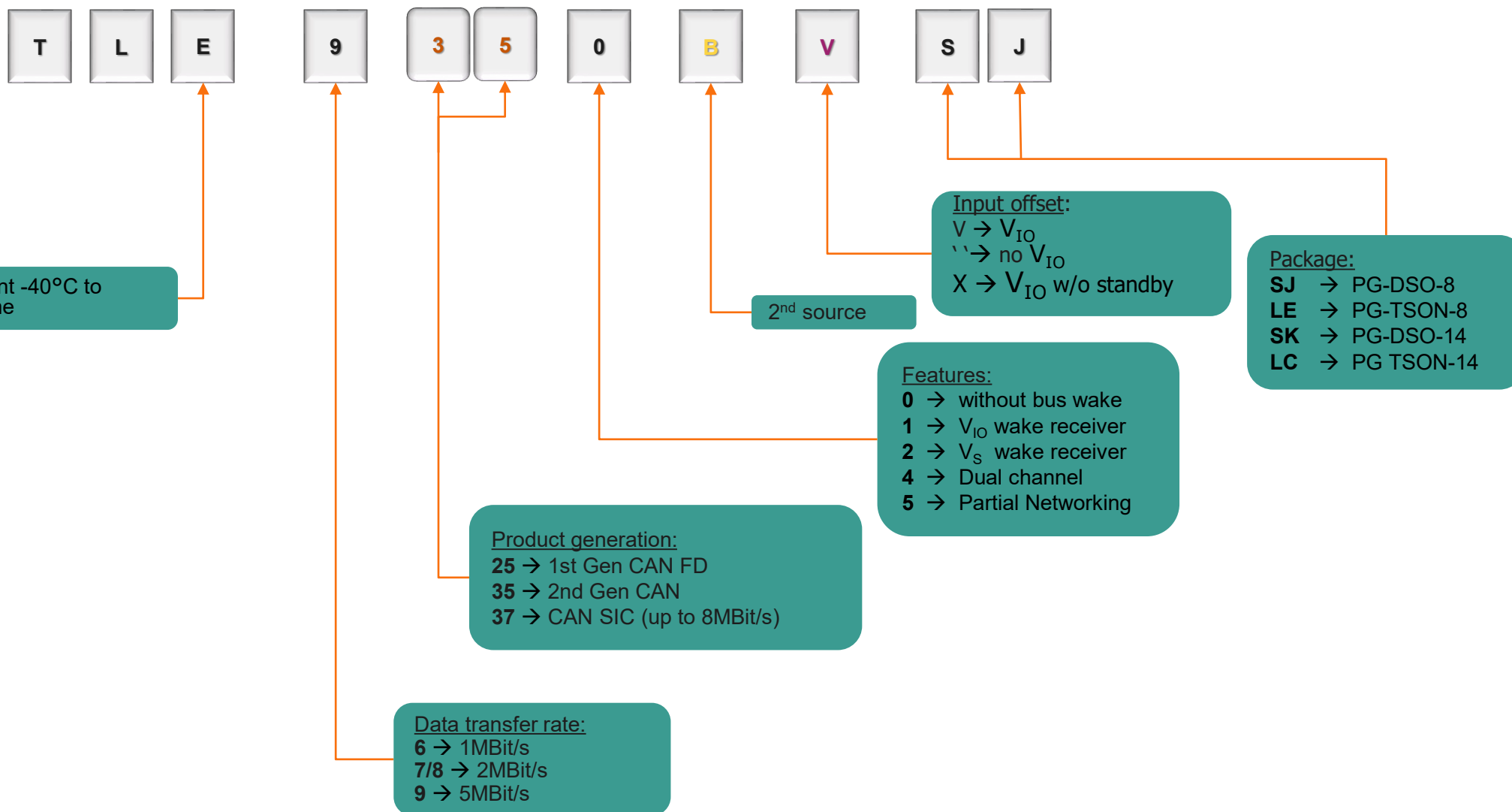
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Infineon's cross reference search: [LINK](#)

Device Naming Nomenclature



CAN Transceiver naming system





LIN Transceiver naming system

