



## New Product Introduction

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May 2023

**TRAVEO™ T2G CYT3DL**

**TRAVEO™ T2G CYT4DN**

**1200 V half-bridge gate driver with integrated bootstrap diode and OCP:  
2ED132xS12x family**

**750 V EDT2 discrete IGBT**

**CoolGaN™ Integrated Power Stage (IPS) half-bridge 600 V in QFN 8 x 8 mm**

**EiceDRIVER™ 2EDi gen2 – dual-channel isolated gate driver ICs**

**XENSIV™ - TLE4971 magnetic current sensor with optical inspection capable small  
TISON-8-6 SMD package**

# TRAVEO™ T2G CYT3DL

The TRAVEO™ CYT3DL is a family of TRAVEO™ T2G microcontrollers targeted at automotive systems such as instrument clusters and head-up displays (HUD). TRAVEO™ T2G devices are manufactured using an advanced 40 nm process. CYT3DL has a Cortex®-M7 running up to 240 MHz, a WVGA GFX and includes two unique packages: 216-pin TEQFP and 272- ball BGA. It incorporates Infineon's low-power flash memory, multiple high-performance analog and digital peripherals, and enables the creation of a secure computing platform.



## Features

- > Arm® Cortex®-M7 single / dual CPU
- > Up to 240 MHz operation
- > Up to 4 MB flash, 128 KB work flash, 384 KB SRAM
- > Dual-bank flash to support true
- > FOTA
- > Audio interface: I2S, TDM
- > Supports 2D and 2.5D (perspective warping, 3D effects) graphics rendering
- > 2048 KB of embedded video RAM memory (VRAM)
- > Display warping on-the-fly for HUD applications

## Competitive advantage

- > Advantage on low power mode which fits perfectly to body applications for power consumption, security and safety solutions

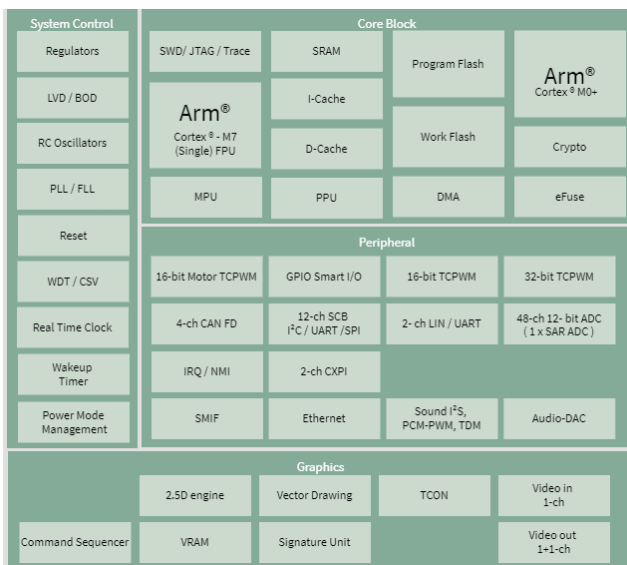
## Benefits

- > Single-chip solution offering automotive function thanks to Arm® Cortex®-M7
- > Optimized memory footprint for reduced BOM
- > State-of-the-art security with secure boot support from a dedicated M0+ core and security hardware to accelerate cryptographic functions
- > Real FOTA support based on security and dual-band flash

## Target applications

- > TRAVEO™ T2G microcontroller targeted at automotive systems such as instrument clusters and head-up displays (HUD)
  - > Cockpit
  - > Automotive Head Unit
  - > Automotive instrument cluster
  - > Matrix LED headlights
  - > HVAC system

## Block diagram



## Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">CYT3DLBBHBQ1BZSGS</a>	SP005750199	PG-LFBGA-272
<a href="#">CYT3DLABHBQ1AESGS</a>	SP005740841	PG-TQFP-216

# TRAVEO™ T2G CYT4DN

The TRAVEO™ CYT4DN is a family of TRAVEO™ T2G microcontrollers dedicated to automotive systems such as instrument clusters and Head-Up Displays (HUD). The family features a 2D Graphics engine, sound processing, two Arm® Cortex®-M7 CPUs for primary processing running up to 320 MHz for and an Arm® Cortex®-M0+ CPU for peripheral and security processing. Moreover, it includes a 720p GFX and a unique package: 327-ball BGA.



## Features

- > Arm® Cortex®-M7 single / dual CPU
- > Up to 320 MHz operation
- > Up to 6 MB flash, 128 KB work flash, 640 KB SRAM
- > Dual-bank flash to support true
- > FOTA
- > Audio interface: I2S, TDM
- > Supports 2D and 2.5D (perspective warping, 3D effects) graphics rendering
- > Up to 30-bit color resolution (RGB)
- > 4096 KB of embedded video RAM memory (VRAM)
- > Display warping on-the-fly for HUD applications

## Competitive advantage

- > Single chip solution from single M4 to dual M7 host CPU up to 720P with M0+ as security cores
- > Superior and more scalable connectivity
- > Common, separate Crypto CPU for all lineup, security engine for Evita-light only
- > Scalable resource management for Crypto Core
- > Audio DAC & mixer support

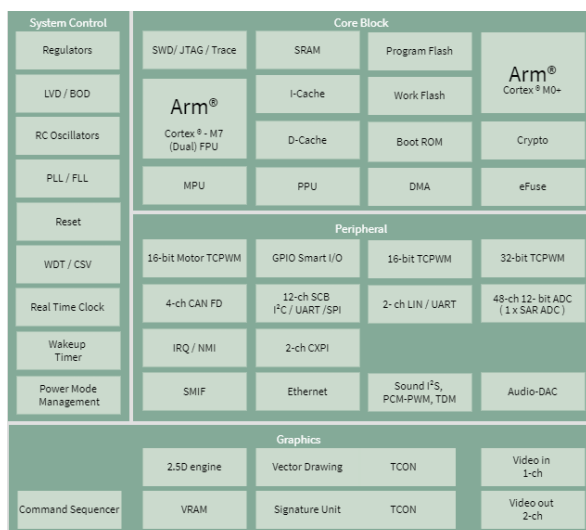
## Benefits

- > Single-chip solution offering automotive function thanks to Arm® Cortex®-M7
- > Optimized memory footprint for reduced BOM
- > State-of-the-art security with secure boot support from a dedicated M0+ core and security hardware to accelerate cryptographic functions
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## Target applications

- > TRAVEO™ T2G microcontroller targeted at automotive systems such as instrument clusters and head-up displays (HUD)
  - > Cockpit
  - > Automotive Head Unit
  - > Automotive instrument cluster
  - > Matrix LED headlights
  - > HVAC system
  - > Digital mirrors

## Block diagram



## Product collaterals / Online support

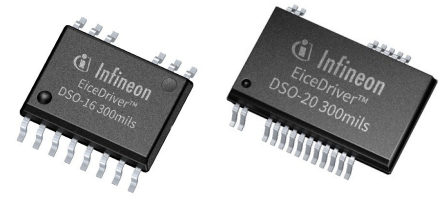
[Product page](#)

## Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">CYT4DNJBRCQ1BZSGS</a>	SP005749927	PG-LFBGA-327

## 1200 V half-bridge gate driver with integrated bootstrap diode and OCP: 2ED132xS12x family

The EiceDRIVER™ SOI family is receiving the addition of the first 1200 V SOI half bridge configuration products for high power applications such as commercial HVAC, heat pump, servo drives, industrial inverter, pumps and fans (up to 10 KW). This 2ED132x series has 4 products in 2 different packages: DSO-16 and DSO-20, both in 300 mil wide-body packages. They are perfect fit for IGBTs but also for 1200 V SiC MOSFETs. Infineon SOI-technology provides excellent ruggedness and noise immunity against negative transient voltages on the VS pin (SOI by definition does not have a parasitic thyristor structure). This results in a guaranteed -VS transient voltage immunity of 100 V with repetitive 700 ns pulses.



### Features

- > Integrated ultra-fast HV bootstrap diode (1 V typ. @ 0.3 mA, 30 Ω tpy.)
- > Active Miller Clamp (AMC, 2.3 A capability) for both high / low side
- > Short Circuit Clamp (SCC, 0.5 A, 10 us capability) for both high / low side
- > Shoot through protection btw high-side / low-side
- > RFE 1 pin support 3 features (enable, fault out, fault clear timer) & UVLO protection
- > Ultra-fast over current protection w/ higher accuracy +/- 5% comparator

### Benefits

- > Infineon guarantee -100 V up to 700 ns NTSOA
- > Customer can increase switching speed based on all the clamp features
- > Possible to switching very low V<sup>th</sup> power switches
- > Deliver essential protection functions such as UVLO, AMC, FO, STP, SCC etc.
- > High current capability for both sink & source
- > Design super compact footprint with only one power supplier

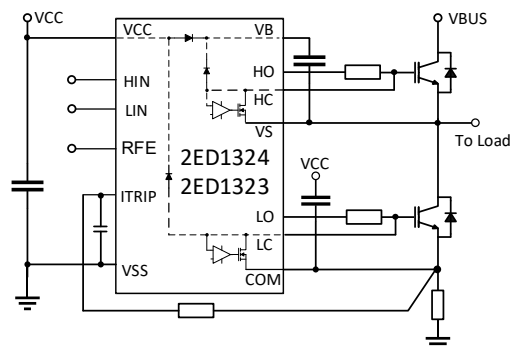
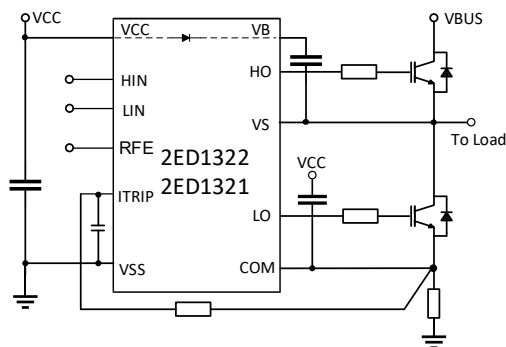
### Target applications

- > Commercial HVAC
- > Heat pump
- > Servo drives
- > HVAC blower (fan)
- > Industrial robot
- > Pumps

### Product collaterals / Online support

- [Product page 2ED1321S12M](#)
- [Product page 2ED1322S12M](#)
- [Product page 2ED1323S12P](#)
- [Product page 2ED1324S12P](#)

### Block diagram



### Product overview incl. data sheet link

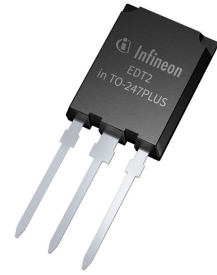
OPN	SP Number	Package
<a href="#">2ED1321S12MXUMA1</a>	SP005401749	PG-DSO-16
<a href="#">2ED1322S12MXUMA1</a>	SP005401747	PG-DSO-16
<a href="#">2ED1323S12PXUMA1</a>	SP005401745	PG-DSO-20
<a href="#">2ED1324S12PXUMA1</a>	SP005401743	PG-DSO-20

## 750 V EDT2 discrete IGBT

This device contains the benchmark EDT2 IGBT technology with 750 V collector-emitter blocking voltage for lowest switching and conduction losses. This enables up to 450 Vdc battery voltages.

The robust and field-proven EDT2 technology combined with the outstanding Infineon quality significantly improves the performance and dependability of inverter systems.

The co-packed diode is a fast recovery anti-parallel emitter controlled diode with efficient and soft switching behavior.



### Features

- > 750 V with 120 A - 200 A current class discrete devices co-packed with full rated diode
- > Low  $V_{CEsat} = 1.4$  V
- > Package backside suitable for reflow soldering at 245°C, 3 times
- > Plating of pins further enable electrical resistance welding
- > Short circuit robust
- > Co-packed with full current, soft and fast recovery diode

### Benefits

- > Highest power density with 200 A rating device in discrete package
- > Allows for increase safety margin above 400 V DC link system
- > Delamination-free package low  $R_{th(j-hs)}$  after reflow soldering
- > Optimized performance in application conditions
- > Lowest conduction and switching losses
- > Improved EMI performance

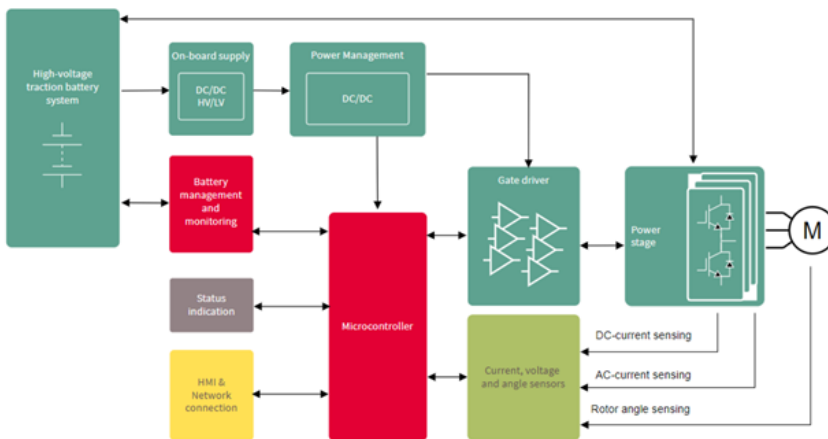
### Competitive advantage

- > Flexible selection of output power range by paralleling different number of IGBTs
- > EDT2 in TO247PLUS package offers a good cost / performance advantage
- > High current IGBT in SMD PLUS suitable for reflow solder assembly on a DCB, DCB soldered to a water-cooled heat sink

### Target applications

- > CAV applications such as delivery vehicles, truck and bus drive inverters

### Block diagram



### Product collaterals / Online support

[Product page IKQB120N75CP2](#)

[Product page IKQB160N75CP2](#)

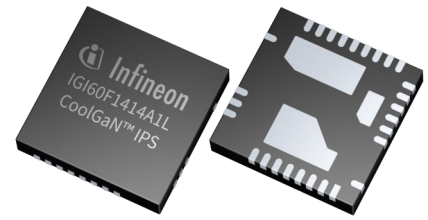
[Product page IKQB200N75CP2](#)

### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">IKQB120N75CP2AKSA1</a>	SP005425418	PG-TO247-3
<a href="#">IKQB160N75CP2AKSA1</a>	SP005435026	PG-TO247-3
<a href="#">IKQB200N75CP2AKSA1</a>	SP005425420	PG-TO247-3

# CoolGaN™ Integrated Power Stage (IPS) half-bridge 600 V in QFN 8 x 8 mm

Infineon's CoolGaN™ Integrated Power Stage (IPS) is built upon the solid foundation set by Infineon's highly efficient CoolGaN™ technology. By combining the unmatched robustness of the hybrid-drain-embedded gate injection transistor (HD-GIT) structure with integrated precise EiceDRIVER™ gate driver technology, Infineon brings GaN technology to the next level. This results in a smaller physical footprint and increased power density and higher energy efficiency. The CoolGaN™ IPS half-bridge combines a half-bridge power stage consisting of two 600 V CoolGaN™ GIT HEMTs with dedicated EiceDRIVER™ gate driver ICs in a small 8 x 8 mm QFN-28 package.



## Features

- > Isolated digital input with digital-in, power-out building block
- > Application configurable switching behavior
- > Fast, highly accurate, and stable timing
- > Thermally enhanced 8 x 8 mm QFN-28

## Target applications

- > USB-PD
- > Charger and adapters
- > Server, telecom & networking SMPS
- > Low power motor drive
- > LED lighting

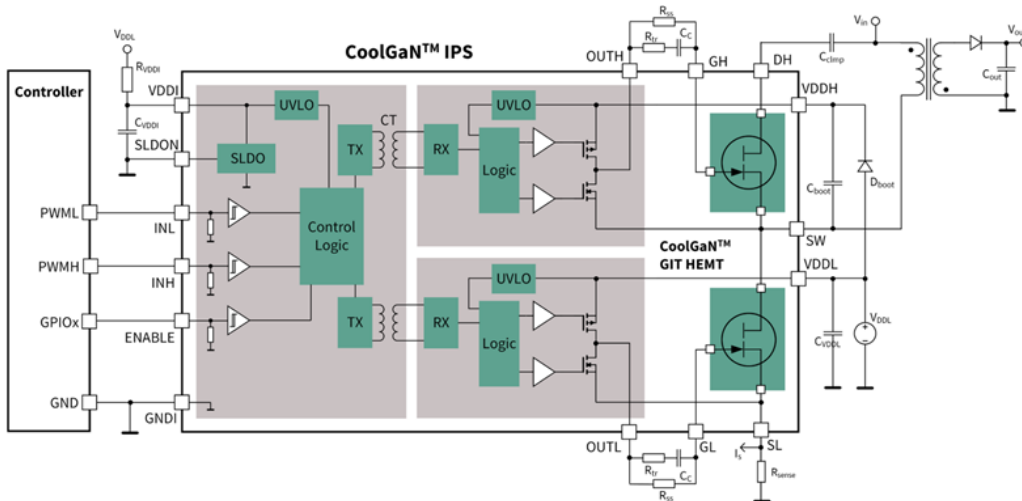
## Benefits

- > Easy to drive with 2x digital PWM input
- > Low system BOM
- > Complete configurability of gate path via simple RC interface
- > Allows short dead-time setting to maximize system efficiency
- > Small package for compact system designs

## Product collaterals / Online support

[Product family page](#)

## Block diagram



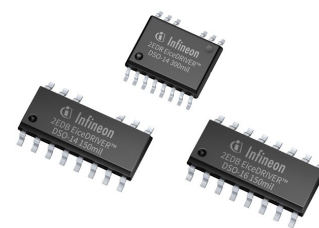
## Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">IG160F1414A1LAUMA1</a>	SP005571997	PG-TIQFN-28
<a href="#">IG160F2020A1LAUMA1</a>	SP005571097	PG-TIQFN-28
<a href="#">IG160F2727A1LAUMA1</a>	SP005567004	PG-TIQFN-28
<a href="#">IG160F5050A1LAUMA1</a>	SP005570934	PG-TIQFN-28

## EiceDRIVER™ 2EDi gen2 – dual-channel isolated gate driver ICs

The EiceDRIVER™ 2EDi, dual-channel isolated product family of gate driver ICs, is designed for high performance and robust operation with CoolMOS™ SJ MOSFETs, CoolGaN™ GIT HEMTs or SiC MOSFETs in high-power switching noise environment.

The products are used in primary- and secondary-side controlled hard- and soft-switching topologies. They are pivotal to optimize power conversion efficiencies and to ensure a robust switched-mode power-supply operation under nominal and abnormal operation.



### Features

- > Robust input-to-output isolation
- > Channel-to-channel isolation
- > Accurate timings
- > High CMTI (Common mode rejection)
- > Fast UVLO start-up time
- > Fast active clamping of the output for supply below UVLO
- > Dead-time control and shoot-through protection (DTC / STP)
- > 14-pin package with increased channel-to-channel creepage

### Target applications

- > Server
- > Telecom
- > DC-DC converters
- > Power tools
- > Industrial SMPS
- > Low-speed electrical vehicles
- > Solar micro inverter
- > LED Lighting

### Benefits

- > System safe isolation
- > Flexible driving (driving of two floating switches at different source potentials, driving of 4-pin kelvin source MOSFETs) or simply robustness against ground bounce in noisy environments
- > Perfect signals synchronization or dead-time optimization for increased system efficiency
- > Reliable system operation at high switching frequencies and driving of WBG (Wide Bandgap) devices
- > Symmetrical operation in bootstrapped system with benefit on system reliability (reduced risk of saturation of the main transformer or hard commutation in LLC)
- > Enabling safe operation in bootstrapped system during start-up
- > Protection against input overlap in case of noisy conditions as output short circuits
- > Operation at higher bus voltages or in worst pollution degree environments

### Product collaterals / Online support

[Product family page](#)

### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">2EDR8258XXUMA1</a>	SP005733524	PG-DSO-14
<a href="#">2EDR8259HXUMA1</a>	SP005576413	PG-DSO-16
<a href="#">2EDR8259XXUMA1</a>	SP005576356	PG-DSO-14
<a href="#">2EDB7259YXUMA1</a>	SP005576137	PG-DSO-14
<a href="#">2EDB8259FXUMA1</a>	SP005576110	PG-DSO-16
<a href="#">2EDB8259YXUMA1</a>	SP005576140	PG-DSO-14
<a href="#">2EDB9259YXUMA1</a>	SP005576143	PG-DSO-14
<a href="#">2EDR6258XXUMA1</a>	SP005733196	PG-DSO-14
<a href="#">2EDR7259XXUMA1</a>	SP005576416	PG-DSO-14
<a href="#">2EDR9258XXUMA1</a>	SP005733597	PG-DSO-14
<a href="#">2EDR9259XXUMA1</a>	SP005576365	PG-DSO-14



## XENSIV™ - TLE4971 magnetic current sensor with optical inspection capable small TISON-8-6 SMD package

Current sensor with integrated current rail for automotive and industrial. High-precision miniature coreless magnetic sensor for AC and DC measurement. The sensor provides an analog output proportional to the current measured. Additionally, two digital outputs for indication of overcurrent events are available. Infineon's well established and robust monolithic hall technology enables accurate and highly linear measurement of the magnetic field caused by the current. The newly developed TISON-8-6 power package enables optical inspection in the assembly line, fulfilling automotive requirements. The measurement range of up to  $\pm 120$  A allows to sense currents without the negative effects, e.g. hysteresis and saturation, known from core-based sensors.



### Features

- > Minimal insertion resistance 220  $\mu\Omega$  & inductance <1 nH
- > High dynamic range
- > High peak current
- > Market leading thermal performance
- > Fast over current detection (OCD) less than 1 s
- > Small size
- > Optical inspection capable small SMD package

### Benefits

- > Lower system costs and higher efficiency
- > No hysteresis, no saturation like in core-based sensors
- > Protection against over currents also for fast switching technologies
- > Very low power dissipation
- > Reliable current measurement over lifetime without recalibration

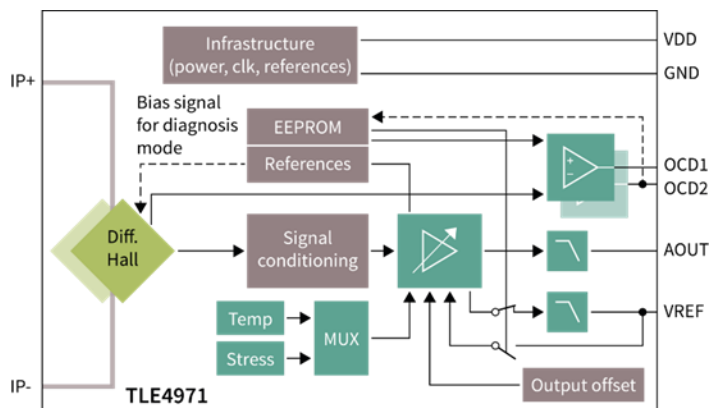
### Competitive advantage

- > Small size on PCB, highest ampacity for integrated current rails, low weight (0,17 g)
- > Save systems costs compared to shunt based solutions. No extra ISO ADC and additional passive elements necessary due do integrated isolation and over current detection feature. Very low sensitivity error over temperature and lifetime
- > Separate path for very fast overcurrent detection (typ. response time 0.7  $\mu$ s)
- > Programmable sensitivity to optimize sensing performance

### Target applications

- > On Board Chargers (OBC)
- > High voltage auxiliary drives in automotive
- > Industrial drives
- > Servo drives
- > PV inverters
- > Charging applications

### Block diagram



### Product collaterals / Online support

[Product family page](#)

### Product overview incl. data sheet link

OPN	SP Number	Package
<a href="#">TLE4971A050T5UE0001XUMA1</a>	SP005737224	PG-TISON-8
<a href="#">TLE4971A075T5UE0001XUMA1</a>	SP005737228	PG-TISON-8
<a href="#">TLE4971A120T5UE0001XUMA1</a>	SP005737235	PG-TISON-8