TEMIC

MATRA MHS

29C463A

Vehicle Area Network Data Link Controller With Mask Programmable Interfaces

Description

The 29C463A data link controller is a mask programmable device dedicated for the realisation of stand alone VAN peripherals fully compliant with the ISO standard ISO/11519-3.

The 29C463A handles all specific module types (Autonomous, synchronous and slave). It also handles all specific message types (Data frame, reply request frame with either deferred or immediate reply.

The 29C463A features a powerful VAN core, 3159 customisable logic gates, 104 peripheral I/O's. It is a mask programmable device, using standard ASIC tools to perform various interface functions : digital I/O's, timers, serial lines controllers (UART, SPI, I2C), counters...

The 29C463A is a prediffused product available with gate array lead time. A classic ASIC design flow is used to define the mask pattern of your own 29C463Axx.

Other 29C463x devices can be defined on request with the required gate count and I/O number. In addition to the VAN core, they can include other blocks like RAM, ROM, E2PROM, A/D, LCD drivers...
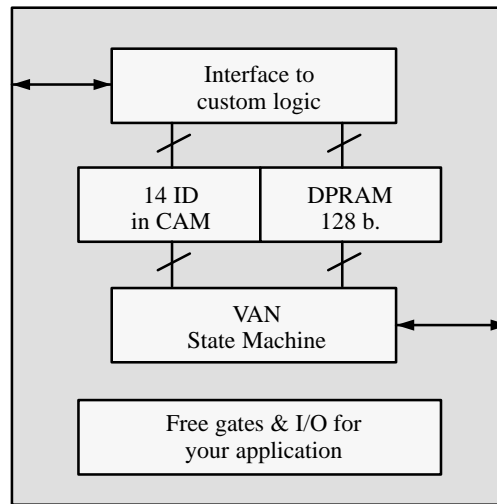
This circuit is manufactured using 0.8 µm CMOS process which allows fast clock frequency in the automotive temperature range –40°C to +125°C.

Features

- Fully compliant with VAN standard ISO/11519-3.
- 14 identifier registers with all bits individually maskable.
- 1 Mbit/s maximum Transfer Rate.
- 3 separate line inputs with automatic diagnosis and selection.
- Idle and sleep modes.
- Manchester enhanced or impulsed coding.
- Short prototype cycle time.

- 3159 available logic gates (90 % usable).
- 104 versatile I/O.
- Wide range of packages from 20 to 100 pins (SO, PLCC and PQFP...).
- Extensive macro library on most popular CAE packages.
- VHDL description of the VAN core.

Preliminary Information

Block Diagram

```
┌─────────────────────────────────────────┐
│         ┌──────────────────┐             │
│  ◄─────►│   Interface to    │            │
│         │   custom logic    │            │
│         └──────────────────┘             │
│            ╱         ╱                    │
│    ┌──────────┐  ┌──────────┐            │
│    │  14 ID    │  │  DPRAM   │           │
│    │  in CAM   │  │  128 b.  │           │
│    └──────────┘  └──────────┘            │
│          ╱          ╱                     │
│    ┌──────────────────────┐              │
│    │        VAN            │  ◄─────►     │
│    │   State Machine       │             │
│    └──────────────────────┘              │
│    ┌──────────────────────┐              │
│    │  Free gates & I/O for │             │
│    │    your application   │             │
│    └──────────────────────┘              │
└─────────────────────────────────────────┘
```

Application example

Dashboard Module   **Door Module**

```
┌─────────────────────────────┐    ┌──────────────────────────┐
│        ┌──────────┐          │    │                          │
│        │ Display  │          │    │                          │
│        └──────────┘          │    │             ──── Door lock│
│  ┌──────────┐ ┌──────────┐   │VAN bus ┌──────────┐           │
│  │    μ     │ │          │═══════════│          │──── Windows │
│  │Controller│ │29C463Axx │   │    │  │29C463Axx │           │
│  └──────────┘ └──────────┘   │    │  └──────────┘──── Mirrors │
│                              │    │                          │
└─────────────────────────────┘    └──────────────────────────┘
```
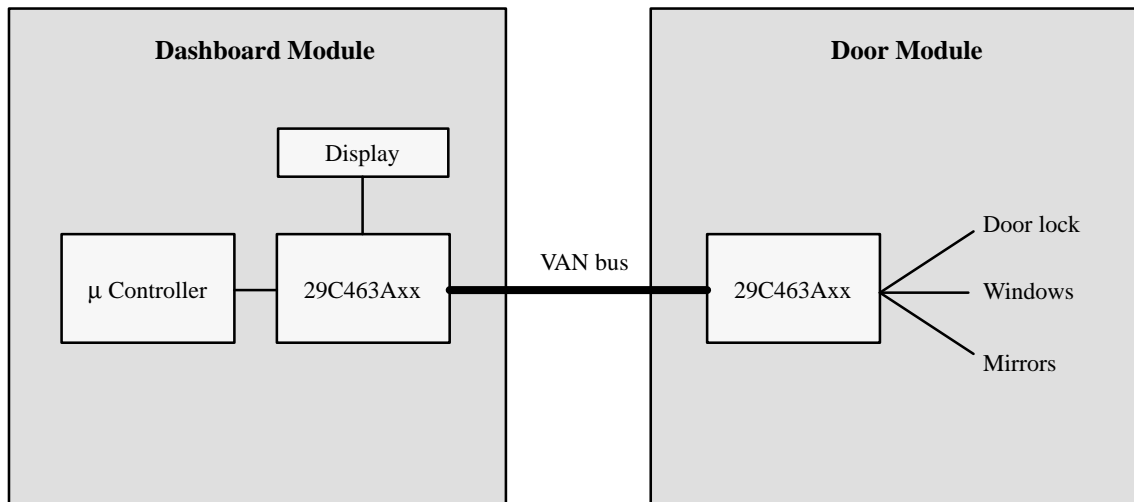
Ordering Information

Consult your TEMIC sales office.