Main Specifications

(Ta=-40 to 125°C)

Standard Conforming to CXPI (ISO 20794-2 to 4, ISO 14229-8) of the standard for automotive communications protocols Functions CXPI interface IC with built-in hardware logics (responder node only) I/O pins 16 GPIO pins (4.5 to 5.5V) I/O pins 16 GPIO pins (4.5 to 5.5V) Input functions 9 Non-voerter input and four pins can be switched to one circuit of 10bit (AD converter input and four pins can be switched to four circuits of 8bit PWM output.) Input functions • Input monitoring during Sleep Mode Output functions • Input chattering filter setting Output functions • Output control when communication is interrupted Output functions • Output control when communication is interrupted Built-in memory Non-volatile memory (saving I/O pin settings, rewriteable and passwords configurable) Overheat, overvoltage and low voltage (This product can detect conditions that precede an abnormality and automatically send the data to the commander node.) Absolute maximum range VvBAT (V) -0.3 to 40 Electrical characteristics Current consumption (Standby Current) IvBAT, size (µA) Operating temperature Ta (°C) -40 to 125 Communication speed (kbps) Max Package Name P-VQFN28-0606-0.65-003	Part number			(Ta=-40 to 125°C) TB9033FTG
Functions (responder node only) I/O pins 16 GPIO pins (4.5 to 5.5V) (six pins can be switched to one circuit of 10bit AD converter input and four pins can be switched to four circuits of 8bit PWM output.) Input functions • Input monitoring during Sleep Mode • Input chattering filter setting • Switch matrix (max 4×4) setting • Switch matrix (max 4×4) setting Output functions • Output on/off control (time and number of times can be set) Output functions • Output on/off control (time and number of times can be set) Built-in memory • Non-volatile memory (saving I/O pin settings, rewriteable and passwords configurable) Fault detection functions • Overheat, overvoltage and low voltage (This product can detect conditions that precede an abnormality and automatically send the data to th commander node.) Absolute maximum ratings Power supply voltage VVBAT (V) -0.3 to 40 Electrical characteristics Current consumption (Standby Current) IVBAT_SLP (µA) Typ. 0 Operating temperature Ta (°C) -40 to 125 Communication = speed (kbps) Max 20 Package Name P-VQFN28-0606-0.65-003	Standard			14229-8) of the standard for automotive
I/O pins 16 GPIO pins (4.5 to 5.5V) I/O pins 16 GPIO pins (4.5 to 5.5V) Input functions 10 Input monitoring during Sleep Mode Input functions Input monitoring during Sleep Mode Output functions Sampling of AD converter moving average (time and number of times can be set) Output functions Output on/off control (time and number of times can be set) Built-in memory Non-volatile memory (saving I/O pin settings, rewriteable and passwords configurable) Patrate Power supply voltage voltate Absolute maximum ratings Power supply voltage voltate VBAT normal operating range voltat 6 to 18 Current consumption (Standby Current) Typ. Operating temperature Ta (°C) -40 to 125 Communication speed (kbps) Max Package Name	Functions			•
Input functions • Input chattering filter setting • Switch matrix (max 4×4) setting • Switch matrix (max 4×4) setting • Output nor/off control (time and number of times can be set) • Output on/off control (time and number of times can be set) • Output on/off control (time and number of times can be set) Built-in memory • Output control when communication is interrupted Built-in memory Non-volatile memory (saving I/O pin settings, rewriteable and passwords configurable) Fault detection functions Non-volatile memory (saving I/O pin settings, rewriteable and passwords configurable) Absolute maximum ratings Power supply voltage VvBAT (V) VBAT normal operating range VvBAT (V) -0.3 to 40 Electrical characteristics Current consumption (Standby Current) IvBAT_SLP (µA) Typ. Operating temperature Ta (°C) -40 to 125 Communication speed (kbps) Max 20 Package Name P-VQFN28-0606-0.65-003 Size (mm) 6×6	I/O pins			16 GPIO pins (4.5 to 5.5V) (six pins can be switched to one circuit of 10bit AD converter input and four pins can be switched
times can be set)Output functions. Output control when communication is interrupted . PWM frequency settingBuilt-in memoryNon-volatile memory (saving I/O pin settings, rewriteable and passwords configurable)Fault detection functionsOverheat, overvoltage and low voltage (This product can detect conditions that precede an abnormality and automatically send the data to the commander node.)Absolute maximum ratingsPower supply voltage $\nabla_{VBAT}(V)$ -0.3 to 40Electrical characteristicsCurrent consumption (Standby Current) $V_{BAT_SLP}(\mu A)$ Typ.functionationTyp.10PackageName Size (mm)P-VQFN28-0606-0.65-003 6×6	Input functions			 Input chattering filter setting Switch matrix (max 4×4) setting Sampling of AD converter moving average
Built-in memory rewriteable and passwords configurable) Fault detection functions Overheat, overvoltage and low voltage (This product can detect conditions that precede an abnormality and automatically send the data to the commander node.) Absolute maximum ratings Power supply voltage $V_{VBAT}(V)$ -0.3 to 40 Electrical characteristics VBAT normal operating range $V_{VBAT}(V)$ 6 to 18 Electrical characteristics Current consumption (Standby Current) $I_{VBAT_SLP}(\mu A)$ Typ. Operating temperature Ta (°C) -40 to 125 Communication speed (kbps) Max 20 Package Name P-VQFN28-0606-0.65-003 Size (mm) 6×6 6	Output functions			 Output control when communication is interrupted
Fault detectionproduct can detect conditions that precede an abnormality and automatically send the data to the commander node.)Absolute maximum ratingsPower supply voltage $V_{VBAT}(V)$ -0.3 to 40VBAT normal operating range $V_{VBAT}(V)$ 0 0 Electrical characteristicsCurrent consumption (Standby Current) $V_{VBAT_SLP}(\mu A)$ Typ. 10 Communicationspeed (kbps)Max 20 P-VQFN28-0606-0.65-003P-VQFN28-0606-0.65-0036 <6	Built-in memory			
maximum ratingsPower supply voltage $V_{VBAT}(V)$ -0.3 to 40Output Voltage 	Fault detection functions			product can detect conditions that precede an abnormality and automatically send the data to the
$ \begin{array}{l} \mbox{range} \\ \mbox{VvBAT}(V) \\ V$	Absolute maximum ratings			-0.3 to 40
$ \begin{array}{l} \label{eq:consumption} \mbox{big} \mbox{current} \mbox{j} \mbox{current} \mb$	Electrical characteristics	range		6 to 18
Ta (°C)-40 to 123Communication speed (kbps)Max20PackageNameP-VQFN28-0606-0.65-003Size (mm) 6×6		consumption (Standby Current)	Тур.	10
Name P-VQFN28-0606-0.65-003 Size (mm) 6×6				-40 to 125
Package Size (mm) 6×6	Communication speed (kbps) Max		Max	20
6×6	Dealera	Name		P-VQFN28-0606-0.65-003
	Раскаде	Size (mm)		6×6
Reliability test To be AEC-Q100 (Grade1) qualified	Reliability test			To be AEC-Q100 (Grade1) qualified