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Category Switch & IPD & Multiplexer & Logic

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Automotive Standard Logic

Logic Gate (Single type)

| Type | Package/Part No. | | Function | Supply Voltage (V) | H Input Voltage (Min) (V) | L Input Voltage (Min) (V) | Operating Temperature (°C) | Output Delay Time $V_{CC}=4.5V$ to $5.5V$ (Max) (ns) | Automotive Grade AEC-Q100 |
|--------------------|------------------|------------|---------------------------------|--------------------|---------------------------|---------------------------|----------------------------|--|---------------------------|
| | SSOP5 | SSOP6 | | | | | | | |
| New BD7LS00 | BD7LS00G-C | — | Single 2-input NAND gate | 1.65 to 5.5 | $V_{CC} \times 0.7$ | $V_{CC} \times 0.3$ | -40 to +125 | 10.0 | YES |
| BD7LS02 | BD7LS02G-C | — | Single 2-input NOR gate | 1.65 to 5.5 | $V_{CC} \times 0.7$ | $V_{CC} \times 0.3$ | -40 to +125 | 10.0 | YES |
| New BD7LS04 | BD7LS04G-C | — | Single Inverter | 1.65 to 5.5 | $V_{CC} \times 0.7$ | $V_{CC} \times 0.3$ | -40 to +125 | 10.0 | YES |
| BD7LS08 | BD7LS08G-C | — | Single 2-input AND gate | 1.65 to 5.5 | $V_{CC} \times 0.7$ | $V_{CC} \times 0.3$ | -40 to +125 | 10.0 | YES |
| BD7LS07 | BD7LS07G-C | — | Single Buffer with Open-drain | 1.65 to 5.5 | $V_{CC} \times 0.7$ | $V_{CC} \times 0.3$ | -40 to +125 | 9.0 | YES |
| New BD7LS14 | BD7LS14G-C | — | Single Schmitt Trigger Inverter | 1.65 to 5.5 | $V_{CC} \times 0.7$ | $V_{CC} \times 0.3$ | -40 to +125 | 11.0 | YES |
| New BD7LS17 | BD7LS17G-C | — | Single Schmitt Trigger Buffer | 1.65 to 5.5 | $V_{CC} \times 0.7$ | $V_{CC} \times 0.3$ | -40 to +125 | 11.0 | YES |
| New BD7LS32 | BD7LS32G-C | — | Single 2-input OR gate | 1.65 to 5.5 | $V_{CC} \times 0.7$ | $V_{CC} \times 0.3$ | -40 to +125 | 10.0 | YES |
| New BD7LS34 | BD7LS34G-C | — | Single Buffer | 1.65 to 5.5 | $V_{CC} \times 0.7$ | $V_{CC} \times 0.3$ | -40 to +125 | 10.0 | YES |
| BD7LS125 | BD7LS125G-C | — | Single 3-state Buffer | 1.65 to 5.5 | $V_{CC} \times 0.7$ | $V_{CC} \times 0.3$ | -40 to +125 | 10.0 | YES |
| New BD7LS97 | — | BD7LS97G-C | Configurable Function gate | 1.65 to 5.5 | $V_{CC} \times 0.7$ | $V_{CC} \times 0.3$ | -40 to +125 | 13.0 | YES |

Standard Logic

Analog Switch/Analog Switch (Single type)

| Type | Package/Part No. | | | Function | Supply Voltage (V) | Input Voltage (V) | | ON Resistance (Max) (Ω) | Control-Output Propagation Delay Time (Typ) (ns) | IN-Out Propagation Delay Time (Typ) (ns) | Max Propagation Frequency (Typ) (MHz) |
|----------|------------------|------------|----------|----------------------|--------------------|-------------------|---------------|----------------------------------|--|--|---------------------------------------|
| | SOP14 | SSOP-B14 | SSOP5 | | | H Level (Min) | L Level (Max) | | | | |
| BU4066BC | BU4066BCF | BU4066BCFV | — | Quad Analog Switch | 3 to 18 | 3.5 | 1.5 | 950 | 60 | 20 | — |
| BU4S66 | — | — | BU4S66G2 | Single Analog Switch | 3 to 16 | 3.5 | 1.5 | 950 | 80 | 15 | — |

Multiplexer

| Type | Package/Part No. | | Function | Supply Voltage (V) | Input Voltage (V) | | ON Resistance (Max) (Ω) | Control-Output Propagation Delay Time (Typ) (ns) | IN-Out Propagation Delay Time (Typ) (ns) | Max Propagation Frequency (Typ) (MHz) |
|----------|------------------|------------|---|--------------------|-------------------|---------------|----------------------------------|--|--|---------------------------------------|
| | SOP16 | SSOP-B16 | | | H Level (Min) | L Level (Max) | | | | |
| BU4051BC | BU4051BCF | BU4051BCFV | Analog Multiplexer/Demultiplexer ($8 \leftrightarrow 1$) | 3 to 18 | 3.5 | 1.5 | 950 | 170 | 15 | 20 |
| BU4052BC | BU4052BCF | BU4052BCFV | Dual Analog Multiplexer/Demultiplexer ($4 \leftrightarrow 1$) | 3 to 18 | 3.5 | 1.5 | 950 | 170 | 15 | 20 |
| BU4551B | BU4551BF | BU4551BFV | Quad Analog Multiplexer/Demultiplexer ($2 \leftrightarrow 1$) | 3 to 16 | 3.5 | 1.5 | 1,100 | 360 | 35 | 15 |

Logic Gates

| Type | Package/Part No. | | Function | Supply Voltage (V) | Input Voltage (V) | | Hysteresis Voltage (V) | Output Voltage $I_{OUT}=1\mu A(V)$ | | Propagation Delay Time (Typ) (ns) |
|---------|------------------|----------|-----------------------|--------------------|-------------------|---------------|------------------------|------------------------------------|---------------|-----------------------------------|
| | SOP14 | SSOP-B14 | | | H Level (Min) | L Level (Max) | | H Level (Min) | L Level (Max) | |
| BU4030B | BU4030BF | — | Quad ExclusiveOR Gate | 3 to 16 | 3.5 | 1.5 | — | 4.95 | 0.05 | 90 |

Logic Gates (Single type)

| Type | Package/Part No. | Function | Supply Voltage (V) | Input Voltage (V) | | Hysteresis Voltage (V) | Output Voltage $I_{OUT}=1\mu A(V)$ | | Propagation Delay Time (Typ) (ns) |
|---------|------------------|--------------------------|--------------------|-------------------|---------------|------------------------|------------------------------------|---------------|-----------------------------------|
| | SSOP5 | | | H Level (Min) | L Level (Max) | | H Level (Min) | L Level (Max) | |
| BU4S01 | BU4S01G2 | Single NOR Gate | 3 to 16 | 3.5 | 1.5 | — | 4.95 | 0.05 | 85 |
| BU4S11 | BU4S11G2 | Single NAND Gate | 3 to 16 | 3.5 | 1.5 | — | 4.95 | 0.05 | 85 |
| BU4SU69 | BU4SU69G2 | Single Unbuffer Inverter | 3 to 16 | 4.0 | 1.0 | — | 4.95 | 0.05 | 55 |
| BU4S71 | BU4S71G2 | Single OR Gate | 3 to 16 | 3.5 | 1.5 | — | 4.95 | 0.05 | 90 |
| BU4S81 | BU4S81G2 | Single AND Gate | 3 to 16 | 3.5 | 1.5 | — | 4.95 | 0.05 | 90 |
| BU4S584 | BU4S584G2 | Single Schmitt Trigger | 3 to 16 | 3.5 | 1.5 | 0.15 to 0.60 | 4.95 | 0.05 | 125 |

Function Logic

| Type | Package/Part No. | | Function | Supply Voltage (V) | Input Voltage (V) | | Output Voltage $I_{OUT}=1\mu A(V)$ | | Propagation Delay Time (Typ) (ns) | Max Clock Frequency (Typ) (MHz) | Set up Time (Typ) (ns) | Hold Time (Typ) (ns) |
|----------|------------------|------------|--|--------------------|-------------------|---------------|------------------------------------|---------------|-----------------------------------|---------------------------------|------------------------|----------------------|
| | SOP16 | SSOP-B16 | | | H Level (Min) | L Level (Max) | H Level (Min) | L Level (Max) | | | | |
| BU4094BC | BU4094BCF | BU4094BCFV | 8-Stage Shift/Store Register (3-State) | 3 to 18 | 3.5 | 1.5 | 4.95 | 0.05 | 420 | 2.5 | 20 | 10 |

Serial-in/Parallel-out Drivers

| Serial/Parallel 2-input Drivers | | | | | | | |
|---------------------------------|------------------------|---------------------------|--------------------|-------------------------|------------------------|-------------|----------|
| Part No. | Serial Number of Input | Parallel Number of Output | Supply Voltage (V) | Max Output Current (mA) | Max Output Voltage (V) | Output type | Package |
| BU2098F | 2 | 8 | 2.7 to 5.5 | 25 | 15 | Open drain | SOP16 |
| BU2090F | 2 | 12 | 2.7 to 5.5 | 25 | 25 | Open drain | SOP16 |
| BU2090FS | 2 | 12 | 2.7 to 5.5 | 25 | 25 | Open drain | SSOP-A16 |
| Serial/Parallel 4-input Drivers | | | | | | | |
| BU2050F | 4 | 8 | 4.5 to 5.5 | 25 | 5.5 | CMOS | SOP14 |
| BU2092F | 4 | 12 | 2.7 to 5.5 | 25 | 25 | Open drain | SOP18 |
| BU2092FV | 4 | 12 | 2.7 to 5.5 | 25 | 25 | Open drain | SSOP-B20 |
| BU2099FV | 4 | 12 | 2.7 to 5.5 | 25 | 25 | Open drain | SSOP-B20 |
| BU2152FS | 4 | 24 | 2.7 to 5.5 | 25 | 5.5 | CMOS | SSOP-A32 |

Serial/Parallel 2-input Drivers: 2-wires Interface CLOCK, DATA
 Serial/Parallel 4-input Drivers: 4-wires Interface CLOCK, DATA, LATCH, ENABLE

USB Switch ICs

| SP type (Single Pole) | | | | | | | | | | | | | |
|---|--------------------|------------|-----------------|---------------------|----------------------|------------------------------|--------------------------------|-------------------|----------------------------|-----------------------|----------------------------------|------------------------------------|----------|
| Part No. | Supply Voltage (V) | | USB Switch (ch) | UART Switch (ch) | Circuit Current (μA) | USB Switch ON Resistance (Ω) | USB Switch ON Capacitance (pF) | Package | | | | | |
| | USB | UART | | | | | | | | | | | |
| BH6260MWX | 2.9 to 3.7 | 1.7 to 3.6 | 1 | 1 | 0 | 5 | 10 | USON016X3315 | | | | | |
| DP type (Double Pole) | | | | | | | | | | | | | |
| BD11600NUX | 2.5 to 5.5 | — | 1 | — | 18 | 3 | 6 | VSON010X3020 | | | | | |
| BD11603MWX | 2.5 to 5.5 | — | 2 | — | 18 | 3 | 7 | USON016X3315 | | | | | |
| BD11601NUX | 2.5 to 5.5 | — | 1 | — | 18 | 2.5 | 6 | VSON008X2020 | | | | | |
| BD11670GWL | 3.8 to 28.0 | — | 1 | — | 26 | 5 | 6 | UCSP50L1C | | | | | |
| Built-in OVP Micro USB Switch with USB2.0, MHL™ and Audio | | | | | | | | | | | | | |
| Part No. | Supply Voltage (V) | | | USB/MHL Switch (ch) | MIC Switch (ch) | HP Switch (ch) | VBUS Signal Path (ch) | ID-CBUS Path (ch) | OTG-VBUS Voltage Path (ch) | Stand by Current (μA) | USB/MHL Switch ON Resistance (Ω) | USB/MHL Switch ON Capacitance (pF) | Package |
| | VBUS | VBAT | VDDIO | | | | | | | | | | |
| BD91411GW | 3.8 to 28.0 | 2.9 to 4.6 | 1.7 to 3.0 | 2 | 1 (mono) | 1 | 1 | 1 | 1 | 6 | 5 | 6 | UCSP75M3 |

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IPD (IPS)

High Side Switch

| L-shaped Protection Smart High Side Switch | | | | | | | | | | |
|--|------------------|---------------------------|----|----------------------------|--------------------------|-------------------|-----------|-------------------------------|---------------------------|--|
| Part No. | Power Supply (V) | V _{DS} (Max) (V) | ch | I _{ocp} (Min) (A) | ON Resistance (Typ) (mΩ) | Thermal Shut Down | Package | ComfySIL™ Functional Safety*1 | Automotive Grade AEC-Q100 | |
| New BV1HD045EFJ-C | 6.0 to 28.0 | 41.0 | 1 | 21 | 45 | Self-restart | HTSOP-J8 | FSs | YES | |
| BV2HC045EFU-C | 6.0 to 19.0 | 41.0 | 2 | 21 | 45 | Off-latch | HSSOP-C16 | FSs | YES | |
| BV2HD045EFU-C | 6.0 to 28.0 | 41.0 | 2 | 21 | 45 | Self-restart | HSSOP-C16 | FSs | YES | |
| BV2HD070EFU-C | 6.0 to 28.0 | 41.0 | 2 | 10 | 70 | Self-restart | HSSOP-C16 | FSs | YES | |
| Smart High Side Switch | | | | | | | | | | |
| Part No. | Power Supply (V) | V _{DS} (Max) (V) | ch | I _{ocp} (Min) (A) | ON Resistance (Typ) (mΩ) | Thermal Shut Down | Package | ComfySIL™ Functional Safety*1 | Automotive Grade AEC-Q100 | |
| BV1HD090FJ-C | 4.5 to 36.0 | 45.0 | 1 | 2.7 | 90 | Self-restart | SOP-J8 | FSs | YES | |
| BV1HJ045EFJ-C | 6.0 to 28.0 | 45.0 | 1 | 5.0 | 45 | Self-restart | HTSOP-J8 | FSs | YES | |
| BV1HL045EFJ-C | 6.0 to 28.0 | 45.0 | 1 | 2.5 | 45 | Self-restart | HTSOP-J8 | FSs | YES | |
| BD1HC500EFJ-C | 4.0 to 18.0 | 44.5 | 1 | 0.8 | 500 | Off-latch | HTSOP-J8 | FSs | YES | |
| BD1HC500FVM-C | 4.0 to 18.0 | 44.5 | 1 | 0.8 | 500 | Off-latch | MSOP8 | FSs | YES | |
| BD1HC500HFN-C | 4.0 to 18.0 | 44.5 | 1 | 0.8 | 500 | Off-latch | HSON8 | FSs | YES | |
| BD1HD500EFJ-C | 4.0 to 18.0 | 44.5 | 1 | 0.8 | 500 | Self-restart | HTSOP-J8 | FSs | YES | |
| BD1HD500FVM-C | 4.0 to 18.0 | 44.5 | 1 | 0.8 | 500 | Self-restart | MSOP8 | FSs | YES | |
| BD1HD500HFN-C | 4.0 to 18.0 | 44.5 | 1 | 0.8 | 500 | Self-restart | HSON8 | FSs | YES | |

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 *1 For more information about "ComfySIL™ Functional Safety", please refer to the of the cover.

Low Side Switch

Smart Low Side Switch

| Part No. | Power Supply (V) | V _{DS} (Max) (V) | ch | I _{ocp} (Min) (A) | ON Resistance (Typ) (mΩ) | Thermal Shut Down | Package | ComfySIL™ Functional Safety*1 | Automotive Grade AEC-Q100 |
|--------------------------|--|---------------------------|----|----------------------------|--------------------------|-------------------|------------|-------------------------------|---------------------------|
| New BV1LA025EFJ-C | 3.5 to 5.5 | 42 | 1 | 9 | 25 | Self-restart | HTSOP-J8 | FSs | YES |
| BV1LB010FPJ-C | 3.5 to 5.5 | 38 | 1 | 42 | 10 | Self-restart | TO252-J3 | — | YES |
| New BV1LB025EFJ-C | 3.5 to 5.5 | 42 | 1 | 35 | 25 | Self-restart | HTSOP-J8 | FSs | YES |
| BV1LB028FPJ-C | 3.0 to 5.5 | 42 | 1 | 30 | 28 | Self-restart | TO252-J3 | FSs | YES |
| BV1LB045FPJ-C | 3.0 to 5.5 | 42 | 1 | 18 | 45 | Self-restart | TO252-J3 | FSs | YES |
| BV1LB085FJ-C | 3.0 to 5.5 | 42 | 1 | 13 | 85 | Self-restart | SOP-J8 | FSs | YES |
| BV1LB150FJ-C | 3.0 to 5.5 | 42 | 1 | 6.5 | 150 | Self-restart | SOP-J8 | FSs | YES |
| BV1LB300FJ-C | 3.0 to 5.5 | 42 | 1 | 1.7 | 300 | Self-restart | SOP-J8 | FSs | YES |
| New BV1LC085EFJ-C | 3.0 to 5.5 | 42 | 1 | 4 | 85 | Self-restart | HTSOP-J8 | FSs | YES |
| New BV1LC150EFJ-C | 3.0 to 5.5 | 42 | 1 | 3.5 | 150 | Self-restart | HTSOP-J8 | FSs | YES |
| New BV1LC300EFJ-C | 3.0 to 5.5 | 42 | 1 | 1.7 | 350 | Self-restart | HTSOP-J8 | FSs | YES |
| BV1LC105FJ-C | 3.0 to 5.5 | 42 | 1 | 3 | 105 | Self-restart | SOP-J8 | FSs | YES |
| BV1LC300FJ-C | 3.0 to 5.5 | 42 | 1 | 1.7 | 350 | Self-restart | SOP-J8 | FSs | YES |
| BV1LF080EFJ-C | 3.5 to 6.5 | 42 | 1 | 5.0 | 80 | Self-restart | HTSOP-J8 | FSs | YES |
| BD1LB500EFJ-C | 3.5 to 5.5 | 42 | 1 | 0.8 | 350 | Self-restart | HTSOP-J8 | FSs | YES |
| BD1LB500FVM-C | 3.5 to 5.5 | 42 | 1 | 0.8 | 350 | Self-restart | MSOP8 | FSs | YES |
| BM2LB110FJ-C | 3.0 to 5.5 | 42 | 2 | 2.5 | 120 | Self-restart | SOP-J8 | — | YES |
| BM2LB150FJ-C | 3.0 to 5.5 | 42 | 2 | 6.5 | 150 | Self-restart | SOP-J8 | FSs | YES |
| BM2LB300FJ-C | 3.0 to 5.5 | 42 | 2 | 1.7 | 300 | Self-restart | SOP-J8 | FSs | YES |
| BM2LC105FJ-C | 3.0 to 5.5 | 42 | 2 | 3 | 105 | Self-restart | SOP-J8 | FSs | YES |
| BM2LC120FJ-C | 3.0 to 5.5 | 42 | 2 | 3 | 120 | Self-restart | SOP-J8 | FSs | YES |
| BM2LC300FJ-C | 3.0 to 5.5 | 42 | 2 | 1.7 | 350 | Self-restart | SOP-J8 | FSs | YES |
| BD8LA700EFV-C | 3.0 to 5.5 (Digital)/ 4.0 to 5.5 (Analog) | 45 | 8 | 0.5 | 700 | Off-latch | HTSSOP-B24 | FSs | YES |
| BD8LB600FS-C | 3.0 to 5.5 (Digital)/ 4.0 to 5.5 (Analog) | 45 | 8 | 1 | 600 | Self-restart | SSOP-A24 | FSs | YES |

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