



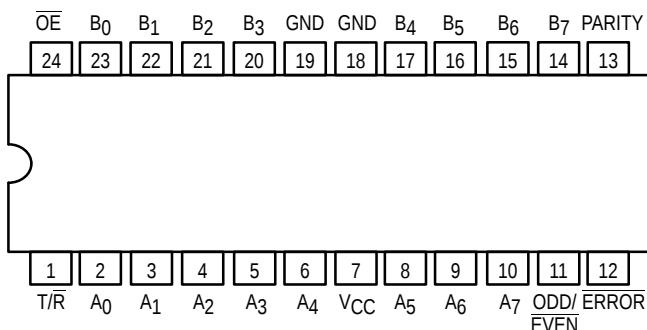
# OCTAL BIDIRECTIONAL TRANSCEIVER WITH 8-BIT PARITY GENERATOR CHECKER (3-STATE OUTPUTS)

The MC74F657A and MC74F657B are Octal Bidirectional Transceivers with an 8-bit parity Generator/Checker and 3-state outputs.

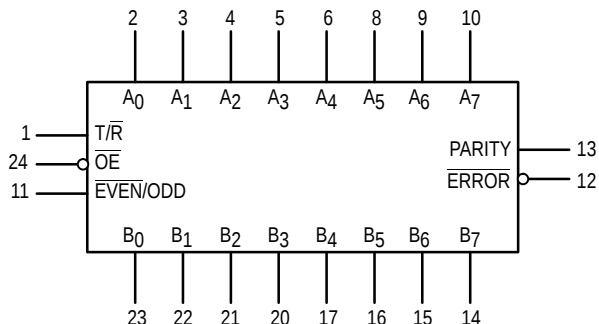
The A and B options are faster versions of the F657 and contain eight non-inverting buffers with 3-state outputs and an 8-bit parity generator/checker. These devices are intended for bus-oriented applications. The buffers have a guaranteed current sinking capability of 24 mA at the A ports and 64 mA at the B ports. The Transmit/Receiver ( $\overline{T/R}$ ) input determines the direction of the data flow through the bidirectional transceivers. Transmit (active HIGH) enables data from A ports to B ports; Receive (active LOW) enables data from B ports to A ports.

- High-Impedance NPN Base Input for Reduced Loading (20  $\mu$ A in HIGH and LOW States)
- Ideal in Applications Where High Output Drive and Light Bus Loading are Required ( $I_{IL}$  is 20  $\mu$ A versus Fast std of 600  $\mu$ A)
- Combines F245 and F280A Functions in One Package
- 3-State Outputs
- B Outputs,  $\overline{PARITY}$ ,  $\overline{ERROR}$ , Sink 64 mA and Source 15 mA
- 15 mA Source Current
- Input Diodes for Termination Effects
- Glitchless Outputs During Power Up and Power Down
- High Impedance Outputs During Power Off
- ESD Protection > 4000 Volts

## PIN ASSIGNMENT



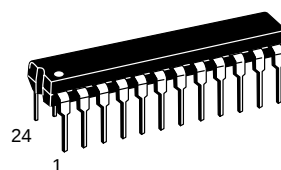
## LOGIC SYMBOL



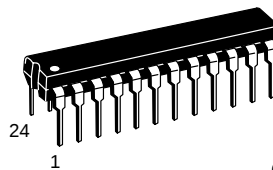
## MC74F657A,B

### OCTAL BIDIRECTIONAL TRANSCEIVER WITH 8-BIT PARITY GENERATOR CHECKER (3-STATE OUTPUTS)

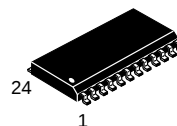
FAST™ SCHOTTKY TTL



**J SUFFIX**  
CERAMIC  
CASE 758-01



**N SUFFIX**  
PLASTIC  
CASE 724-03



**DW SUFFIX**  
SOIC  
CASE 751E-03

## ORDERING INFORMATION

|                 |         |
|-----------------|---------|
| MC74FXXXAJ/BJ   | Ceramic |
| MC74FXXXAN/BN   | Plastic |
| MC74FXXXADW/BDW | SOIC    |

# MC74F657A, B

## GUARANTEED OPERATING RANGES

| Symbol          | Parameter                           |    | Min | Typ | Max      | Unit |
|-----------------|-------------------------------------|----|-----|-----|----------|------|
| V <sub>CC</sub> | Supply Voltage                      | 74 | 4.5 | 5.0 | 5.5      | V    |
| T <sub>A</sub>  | Operating Ambient Temperature Range | 74 | 0   | 25  | 70       | °C   |
| I <sub>OH</sub> | Output Current — High               | 74 |     |     | –3.0/–15 | mA   |
| I <sub>OL</sub> | Output Current — Low                | 74 |     |     | 24/64    | mA   |

## FUNCTION TABLE

| Number of Inputs That are High | Inputs |              |          | Input/Output | Outputs |              |
|--------------------------------|--------|--------------|----------|--------------|---------|--------------|
|                                | OE     | T/ $\bar{R}$ | Even/Odd | Parity       | Error   | Outputs Mode |
| 0, 2, 4, 6, 8                  | L      | H            | H        | H            | Z       | Transmit     |
|                                | L      | H            | L        | L            | Z       | Transmit     |
|                                | L      | L            | H        | H            | H       | Receive      |
|                                | L      | L            | H        | L            | L       | Receive      |
|                                | L      | L            | L        | H            | L       | Receive      |
|                                | L      | L            | L        | L            | H       | Receive      |

| Number of Inputs That are High | Inputs |              |          | Input/Output | Outputs |              |
|--------------------------------|--------|--------------|----------|--------------|---------|--------------|
|                                | OE     | T/ $\bar{R}$ | Even/Odd | Parity       | Error   | Outputs Mode |
| 1, 3, 5, 7                     | L      | H            | H        | L            | Z       | Transmit     |
|                                | L      | H            | L        | H            | Z       | Transmit     |
|                                | L      | L            | H        | H            | L       | Receive      |
|                                | L      | L            | H        | L            | H       | Receive      |
|                                | L      | L            | L        | H            | H       | Receive      |
|                                | L      | L            | L        | L            | L       | Receive      |
| Don't Care                     | H      | X            | X        | Z            | Z       | Z            |

H = HIGH Voltage Level; L = LOW Voltage Level; X = Don't Care; Z = HIGH impedance state.

# MC74F657A, B

## DC CHARACTERISTICS OVER OPERATING TEMPERATURE RANGE (unless otherwise specified)

| Symbol                               | Parameter                                               |                                                |    | Limits |       |      | Unit | Test Conditions                                  |                          |
|--------------------------------------|---------------------------------------------------------|------------------------------------------------|----|--------|-------|------|------|--------------------------------------------------|--------------------------|
|                                      |                                                         |                                                |    | Min    | Typ   | Max  |      |                                                  |                          |
| V <sub>IH</sub>                      | Input HIGH Voltage                                      |                                                |    | 2.0    |       |      | V    | Guaranteed Input HIGH Voltage                    |                          |
| V <sub>IL</sub>                      | Input LOW Voltage                                       |                                                |    |        |       | 0.8  | V    | Guaranteed Input LOW Voltage                     |                          |
| V <sub>IK</sub>                      | Input Clamp Diode Voltage                               |                                                |    |        | −0.73 | −1.2 | V    | V <sub>CC</sub> = MIN, I <sub>IN</sub> = −18 mA  |                          |
| V <sub>OH</sub>                      | Output HIGH Voltage                                     | All Outputs                                    | 74 | 2.4    |       |      | V    | I <sub>OH</sub> = −3.0 mA                        | V <sub>CC</sub> = 4.5 V  |
|                                      |                                                         |                                                |    | 2.7    | 3.4   |      |      |                                                  | V <sub>CC</sub> = 4.75 V |
|                                      |                                                         | B0–B7<br>PARITY,<br>ERROR                      | 74 | 2.0    |       |      | V    | I <sub>OH</sub> = −15 mA                         | V <sub>CC</sub> = 4.5 V  |
| V <sub>OL</sub>                      | Output LOW Voltage                                      | A0–A7                                          | 74 |        | 0.35  | 0.5  | V    | I <sub>OL</sub> = 24 mA                          | V <sub>CC</sub> = MIN    |
|                                      |                                                         | B0–B7<br>PARITY,<br>ERROR                      | 74 |        | 0.4   | 0.55 | V    | I <sub>OL</sub> = 64 mA                          |                          |
| I <sub>IH</sub>                      | Input HIGH Current                                      | T/ $\overline{R}$ , $\overline{OE}$ , EVEN/ODD |    |        |       | 100  | μA   | V <sub>CC</sub> = 0 V, V <sub>IN</sub> = 7.0 V   |                          |
|                                      |                                                         | A0–A7                                          |    |        |       | 2.0  | mA   | V <sub>CC</sub> = 5.5 V, V <sub>IN</sub> = 5.5 V |                          |
|                                      |                                                         | B0–B7, PARITY                                  |    |        |       | 1.0  |      | V <sub>CC</sub> = 5.5 V, V <sub>IN</sub> = 5.5 V |                          |
|                                      |                                                         | $\overline{EVEN/ODD}$                          |    |        |       | 20   | μA   | V <sub>CC</sub> = MAX, V <sub>IN</sub> = 2.7 V   |                          |
|                                      |                                                         | T/ $\overline{R}$ , $\overline{OE}$            |    |        |       | 40   |      |                                                  |                          |
| I <sub>IL</sub>                      | Input LOW Current                                       | $\overline{EVEN/ODD}$                          |    |        |       | −20  | μA   | V <sub>CC</sub> = MAX, V <sub>IN</sub> = 0.5 V   |                          |
|                                      |                                                         | T/ $\overline{R}$ , $\overline{OE}$            |    |        |       | −40  |      |                                                  |                          |
| I <sub>IH</sub><br>+I <sub>OZH</sub> | Off-State Current HIGH<br>Level Voltage Applied         | A0–A7<br>B0–B7<br>PARITY                       |    |        |       | 70   | μA   | V <sub>CC</sub> = MAX, V <sub>OUT</sub> = 2.7 V  |                          |
| I <sub>IL</sub><br>+I <sub>OZL</sub> | Off-State Current LOW<br>Level Voltage Applied          |                                                |    |        |       | −70  |      | V <sub>CC</sub> = MAX, V <sub>OUT</sub> = 0.5 V  |                          |
| I <sub>OZH</sub>                     | Off-State Output Current,<br>High-Level Voltage Applied | $\overline{ERROR}$                             |    |        |       | 50   | μA   | V <sub>CC</sub> = MAX, V <sub>OUT</sub> = 2.7 V  |                          |
| I <sub>OZL</sub>                     | Off-State Output Current,<br>Low-Level Voltage Applied  |                                                |    |        |       | −50  |      | V <sub>CC</sub> = MAX, V <sub>OUT</sub> = 0.5 V  |                          |
| I <sub>OS</sub>                      | Output Short Circuit<br>Current (Note 2)                | A <sub>n</sub> Outputs                         |    | −60    |       | −150 | mA   | V <sub>CC</sub> = MAX, V <sub>OUT</sub> = 0 V    |                          |
|                                      |                                                         | PARITY, B <sub>n</sub> Outputs,<br>ERROR       |    | −100   |       | −225 |      |                                                  |                          |
| I <sub>CC</sub>                      | Total Supply Current                                    | I <sub>CC</sub> H                              |    |        | 90    | 135  | mA   | V <sub>CC</sub> = MAX                            |                          |
|                                      |                                                         | I <sub>CC</sub> L                              |    |        | 106   | 150  |      |                                                  |                          |
|                                      |                                                         | I <sub>CC</sub> Z                              |    |        | 98    | 145  |      |                                                  |                          |

### NOTES:

- For conditions shown as MIN or MAX, use appropriate value specified under recommended operating conditions for the applicable device type.
- Not more than one output should be shorted at one time, nor for more than 1 second.

# MC74F657A, B

## F657A

### AC ELECTRICAL CHARACTERISTICS

| Symbol                               | Parameter                                                                                 | 74F                                                                          |     |              | 74F                                                                                       |            | Unit |
|--------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----|--------------|-------------------------------------------------------------------------------------------|------------|------|
|                                      |                                                                                           | T <sub>A</sub> = +25°C<br>V <sub>CC</sub> = +5.0 V<br>C <sub>L</sub> = 50 pF |     |              | T <sub>A</sub> = 0°C to +70°C<br>V <sub>CC</sub> = +5.0 V ± 10%<br>C <sub>L</sub> = 50 pF |            |      |
|                                      |                                                                                           | Min                                                                          | Typ | Max          | Min                                                                                       | Max        |      |
| t <sub>PLH</sub><br>t <sub>PHL</sub> | Propagation Delay<br>A <sub>n</sub> to B <sub>n</sub> or B <sub>n</sub> to A <sub>n</sub> | 2.0<br>2.0                                                                   |     | 7.0<br>7.0   | 2.0<br>2.0                                                                                | 7.5<br>7.5 | ns   |
| t <sub>PLH</sub><br>t <sub>PHL</sub> | Propagation Delay<br>A <sub>n</sub> to PARITY                                             | 6.0<br>6.5                                                                   |     | 13<br>13     | 5.5<br>6.5                                                                                | 14<br>14   | ns   |
| t <sub>PLH</sub><br>t <sub>PHL</sub> | Propagation Delay<br>EVEN/ODD to PARITY, ERROR                                            | 4.5<br>4.5                                                                   |     | 10.5<br>10.5 | 4.5<br>4.5                                                                                | 11<br>11.5 | ns   |
| t <sub>PLH</sub><br>t <sub>PHL</sub> | Propagation Delay<br>B <sub>n</sub> to ERROR                                              | 7.0<br>7.0                                                                   |     | 18<br>18     | 6.5<br>6.5                                                                                | 19<br>19   | ns   |
| t <sub>PLH</sub><br>t <sub>PHL</sub> | Propagation Delay<br>PARITY to ERROR                                                      | 8.0<br>7.0                                                                   |     | 14<br>14     | 7.0<br>7.0                                                                                | 15<br>15   | ns   |
| t <sub>PZH</sub><br>t <sub>PZL</sub> | Output Enable Time<br>to HIGH or LOW Level                                                | 3.0<br>4.0                                                                   |     | 8.0<br>9.0   | 3.0<br>4.0                                                                                | 9.0<br>10  | ns   |
| t <sub>PHZ</sub><br>t <sub>PLZ</sub> | Output Disable Time<br>from HIGH or LOW Level                                             | 2.0<br>2.0                                                                   |     | 7.5<br>6.0   | 2.0<br>2.0                                                                                | 8.0<br>6.5 | ns   |

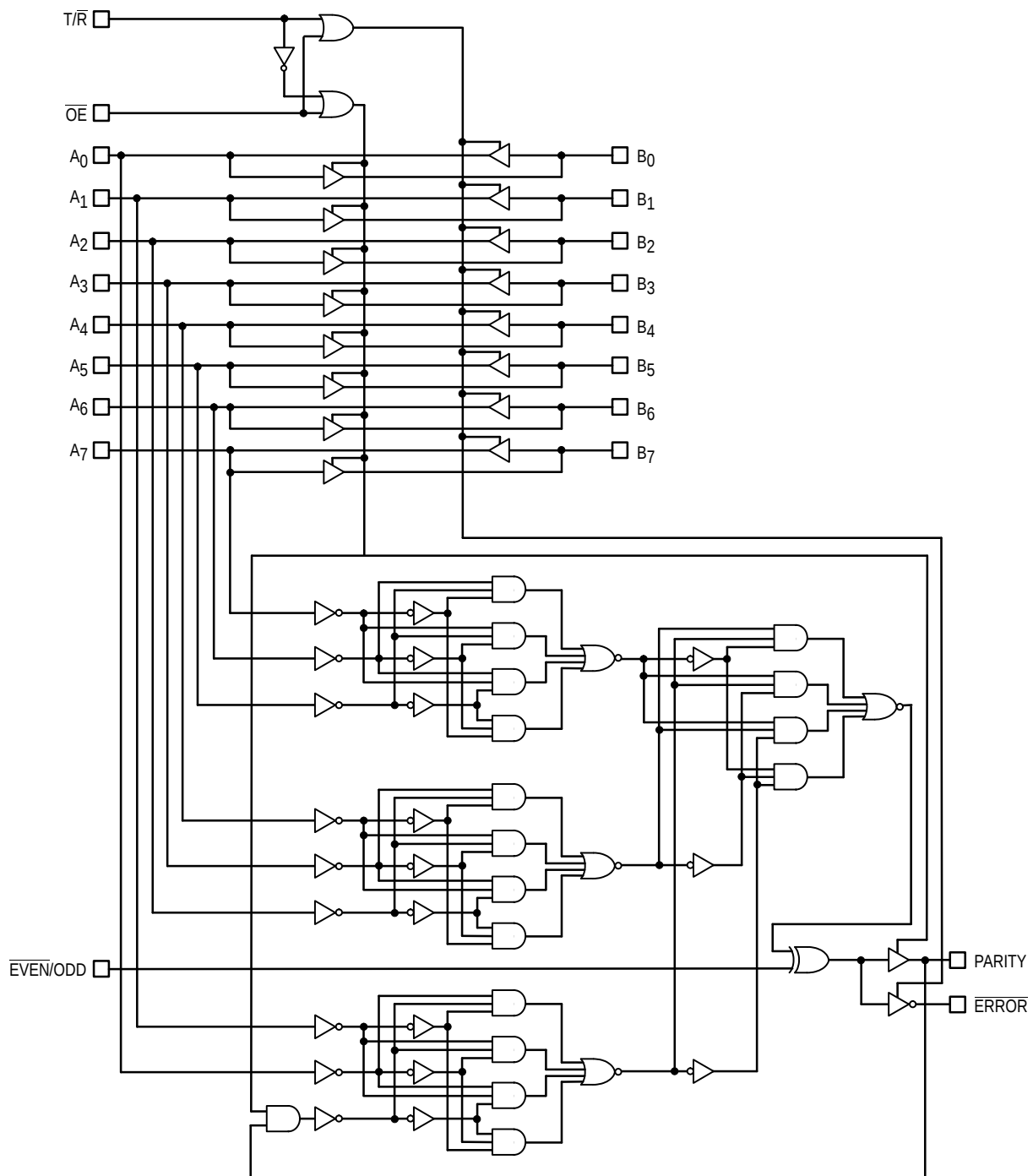
## F657B

### AC ELECTRICAL CHARACTERISTICS

| Symbol                               | Parameter                                                                                 | 74F                                                                          |     |              | 74F                                                                                       |            | Unit |
|--------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----|--------------|-------------------------------------------------------------------------------------------|------------|------|
|                                      |                                                                                           | T <sub>A</sub> = +25°C<br>V <sub>CC</sub> = +5.0 V<br>C <sub>L</sub> = 50 pF |     |              | T <sub>A</sub> = 0°C to +70°C<br>V <sub>CC</sub> = +5.0 V ± 10%<br>C <sub>L</sub> = 50 pF |            |      |
|                                      |                                                                                           | Min                                                                          | Typ | Max          | Min                                                                                       | Max        |      |
| t <sub>PLH</sub><br>t <sub>PHL</sub> | Propagation Delay<br>A <sub>N</sub> to B <sub>N</sub> or B <sub>N</sub> to A <sub>N</sub> | 2.0<br>2.0                                                                   |     | 6.0<br>6.0   | 2.0<br>2.0                                                                                | 6.5<br>6.5 | ns   |
| t <sub>PLH</sub><br>t <sub>PHL</sub> | Propagation Delay<br>A <sub>N</sub> to PARITY                                             | 4.5<br>4.5                                                                   |     | 11.5<br>11.5 | 4.5<br>4.5                                                                                | 13<br>13   | ns   |
| t <sub>PLH</sub><br>t <sub>PHL</sub> | Propagation Delay<br>EVEN/ODD to PARITY, ERROR                                            | 2.0<br>2.0                                                                   |     | 7.5<br>7.5   | 2.0<br>2.0                                                                                | 8.5<br>8.5 | ns   |
| t <sub>PLH</sub><br>t <sub>PHL</sub> | Propagation Delay<br>B <sub>N</sub> to ERROR                                              | 4.0<br>4.0                                                                   |     | 15<br>15     | 3.5<br>3.5                                                                                | 16<br>16   | ns   |
| t <sub>PLH</sub><br>t <sub>PHL</sub> | Propagation Delay<br>PARITY to ERROR                                                      | 5.0<br>5.0                                                                   |     | 11<br>11     | 4.0<br>4.0                                                                                | 12<br>12   | ns   |
| t <sub>PZH</sub><br>t <sub>PZL</sub> | Output Enable Time<br>to HIGH or LOW Level                                                | 2.0<br>2.0                                                                   |     | 7.0<br>7.0   | 2.0<br>2.0                                                                                | 8.0<br>8.0 | ns   |
| t <sub>PHZ</sub><br>t <sub>PLZ</sub> | Output Disable Time<br>from HIGH or LOW Level                                             | 2.0<br>2.0                                                                   |     | 6.0<br>6.0   | 2.0<br>2.0                                                                                | 6.5<br>6.5 | ns   |

# MC74F657A, B

## LOGIC DIAGRAM



Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)

[www.lifeelectronics.ru](http://www.lifeelectronics.ru)