

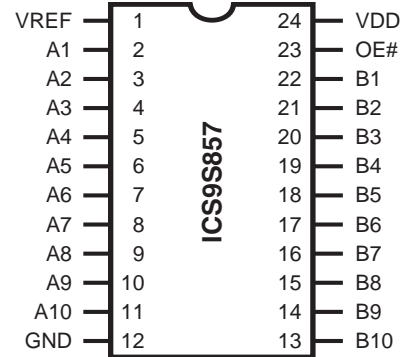


# Low-Voltage 10-Bit FET BUS Switch With Internal Pulldown Resistors

## Product Features:

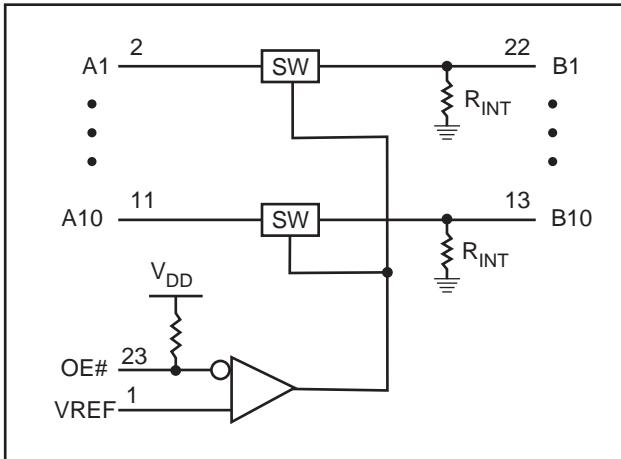
- Full DDR solution provided when used with ICSSSTV16857 and ICS93857
- Enable signal is SSTL\_2 compatible
- Flow-through architecture optimizes PCB layout
- Designed for use with 200 Mbit/s Double Data-Rate (DDR) SDRAM applications
- Switch On-state resistance is designed to eliminate series resistor to DDR SDRAM
- Internal 10Ω pulldown resistors to ground on B port
- Internal 50W pullup resistor on Output-Enable (OE#) input
- Latch-up performance exceeds 100 mA per JESD 78, Class II
- Available in 24 pin TSSOP package

## Pin Configuration

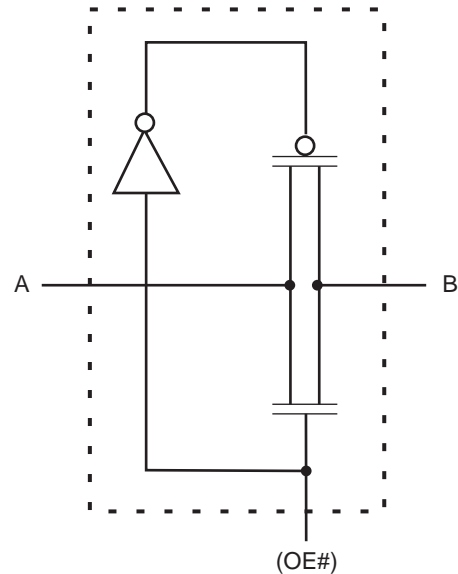


**24-Pin TSSOP**

## Logic Diagram (Positive Logic)



## Simplified Schematic, Each FET Switch



## Function Table

| INPUT<br>OE# | FUNCTION        |
|--------------|-----------------|
| L            | A port = B port |
| H            | Disconnect      |



## Preliminary Product Preview

### Pin Descriptions

| PIN NUMBER                              | PIN NAME | TYPE | DESCRIPTION              |
|---|----------|------|--------------------------|
| 1                                       | VREF     | OUT  | Reference output voltage |
| 2, 3, 4, 5, 6, 7, 8, 9, 10, 11          | A1-A10   | IN   | Inputs                   |
| 12                                      | GND      | PWR  | Ground                   |
| 22, 21, 20, 19, 18, 17, 16, 15, 14, 13, | B1-B10   | OUT  | Outputs                  |
| 23                                      | OE#      | IN   | Output Enable            |
| 24                                      | VDD      | PWR  | Power supply (3.6V)      |

### Absolute Maximum Ratings

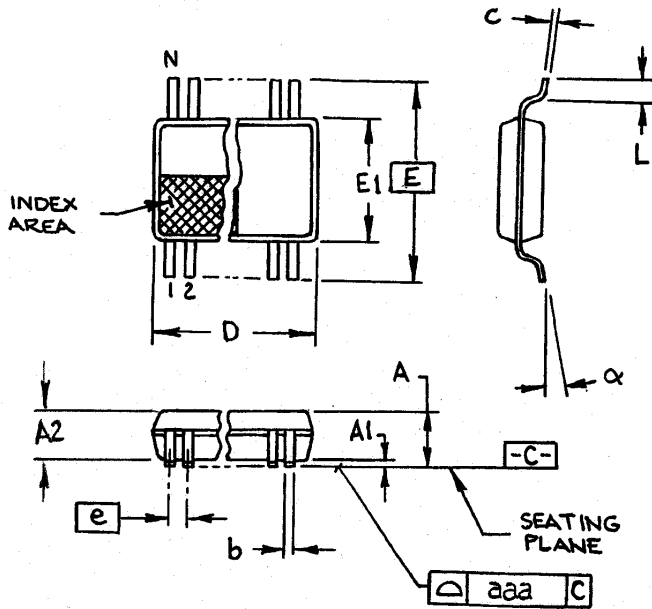
| SYMBOL    | PARAMETER                                      | CONDITIONS    | RATING         | UNIT |
|-----------|--|---------------|----------------|------|
| $V_{DD}$  | DC supply Voltage                              |               | -0.5 to +4.6   | V    |
| $I_{IK}$  | DC input clamp current                         | $V_{I/O} < 0$ | -50            | mA   |
| $V_I$     | DC input voltage range (OE# only) <sup>2</sup> |               | $V_{DD} + 0.5$ | V    |
| $T_{stg}$ | Storage temperature range                      |               | -65 to 150     | °C   |
| $V_I$     | DC input voltage (except OE#) <sup>2</sup>     |               | -0.5 to 4.6    | V    |

### Notes:

- Stresses beyond those listed may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.
- The input and output negative-voltage ratings may be exceeded if the input and output clamp-current ratings are observed.
- The package thermal impedance is calculated in accordance with JESD 51.

### Recommended Operating Conditions

| SYMBOL    | PARAMETER                                  | LIMITS                |      |                   | UNIT |
|-----------|--|-----------------------|------|-------------------|------|
|           |  | MIN                   | TYP  | MAX               |      |
| $V_{DD}$  | DC supply Voltage                          | 3                     | 3.3  | 3.6               | V    |
| $V_{REF}$ | Reference voltage ( $0.38 \times V_{DD}$ ) | 1.15                  | 1.25 | 1.35              | V    |
| $V_{IH}$  | AC high-level input                        | $V_{REF}^+$<br>350 mV |      |                   | V    |
| $V_{IL}$  | AC low-level input voltage                 |                       |      | $V_{REF} - 350mV$ | V    |
| $V_{IH}$  | DC high-level input voltage                | $V_{REF}^+$<br>180 mV |      |                   | V    |
| $V_{IL}$  | DC low-level input voltage                 |                       |      | $V_{REF} - 180mV$ | V    |
| $T_{amb}$ | Operating free-air temperature range       | 0                     |      | +85               | °C   |



4.40 mm. Body, 0.50 mm. pitch TSSOP  
(173 mil) (0.020 mil)

| SYMBOL   | In Millimeters<br>COMMON DIMENSIONS |      | In Inches<br>COMMON DIMENSIONS |       |
|----------|-------------------------------------|------|--------------------------------|-------|
|          | MIN                                 | MAX  | MIN                            | MAX   |
| A        | -                                   | 1.20 | -                              | 0.047 |
| A1       | 0.05                                | 0.15 | .002                           | .006  |
| A2       | 0.80                                | 1.05 | .032                           | .041  |
| b        | 0.17                                | 0.27 | .007                           | .011  |
| c        | 0.09                                | 0.20 | .0035                          | .008  |
| D        | SEE VARIATIONS                      |      | SEE VARIATIONS                 |       |
| E        | 6.40 BASIC                          |      | 0.252 BASIC                    |       |
| E1       | 4.30                                | 4.50 | .169                           | .177  |
| e        | 0.50 BASIC                          |      | 0.020 BASIC                    |       |
| L        | 0.45                                | 0.75 | .018                           | .030  |
| N        | SEE VARIATIONS                      |      | SEE VARIATIONS                 |       |
| $\alpha$ | 0°                                  | 8°   | 0°                             | 8°    |
| aaa      | -                                   | 0.10 | -                              | .004  |

VARIATIONS

| N  | D mm. |       | D (inch) |      |
|----|-------|-------|----------|------|
|    | MIN   | MAX   | MIN      | MAX  |
| 20 | 4.90  | 5.10  | .193     | .201 |
| 24 | 6.40  | 6.60  | .252     | .260 |
| 28 | 7.70  | 7.90  | .303     | .311 |
| 30 | 7.70  | 7.90  | .303     | .311 |
| 36 | 9.60  | 9.80  | .378     | .386 |
| 38 | 9.60  | 9.80  | .378     | .386 |
| 44 | 10.90 | 11.10 | .429     | .437 |
| 50 | 12.40 | 12.60 | .488     | .496 |

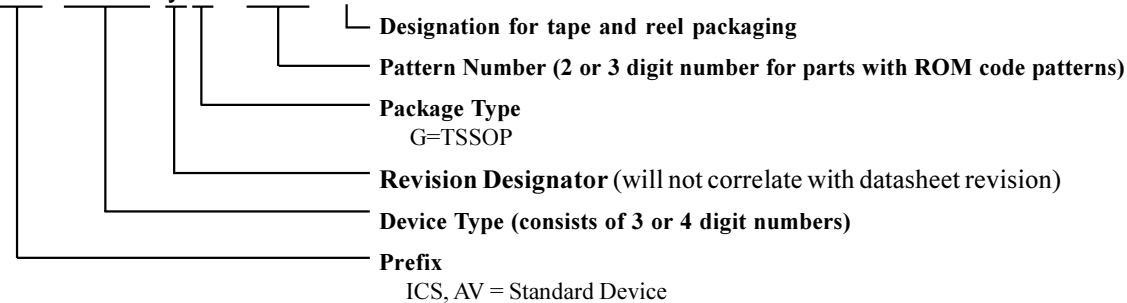
MO-153 JEDEC 7/6/00 Rev B  
Doc.# 10-0036

Ordering Information

ICS9S857yGT

Example:

ICS XXXX y G - PPP - T



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