Integrated Circuit Systems, Inc.

ICS9S857

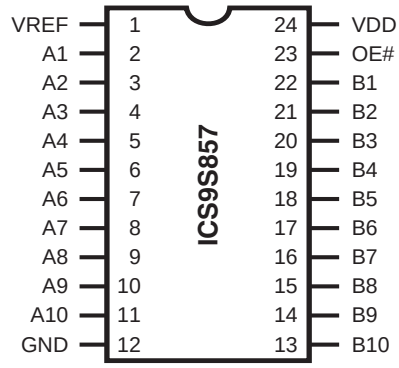
Preliminary Product Preview

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

Product Features:

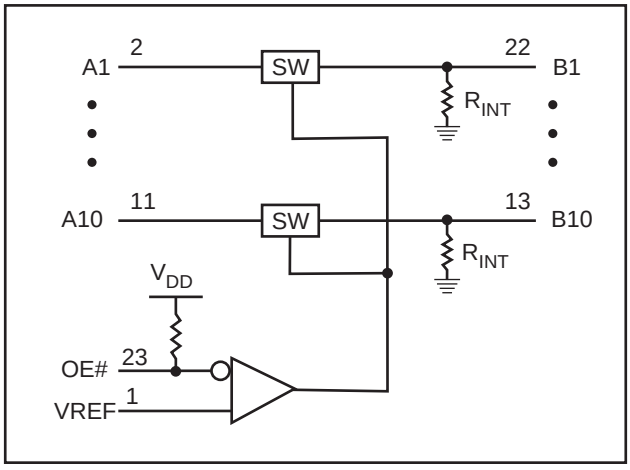
- Full DDR solution provided when used with ICSSSTV16857 and ICS93857
- Enable signal is SSTL_2 compatible
- Flow-through architecture optimizes PCB layout
- Designed for use with 200 Mbit/s Double Data-Rate (DDR) SDRAM applications
- Switch On-state restance is designed to eliminate series resistor to DDR SDRAM
- Internal 10Ω pulldown resistors to ground on B port
- Internal 50W pullup resistor on Output-Enable (OE#) input
- Latch-up perfromance exceeds 100 mA per JESD 78, Class II
- Available in 24 pin TSSOP package

Pin Configuration

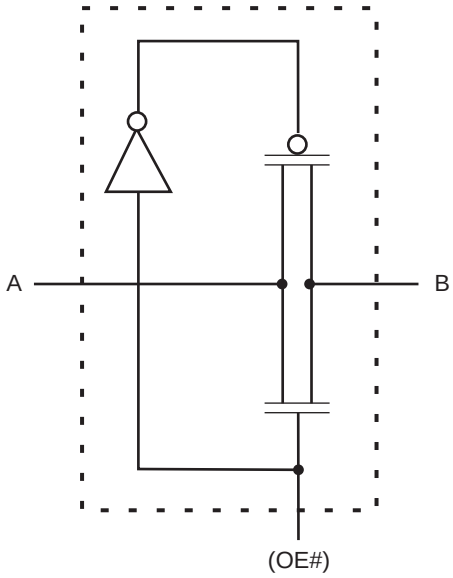


24-Pin TSSOP

Logic Diagram (Positive Logic)



Simplified Shcematic, Each FET Switch



Function Table

INPUT OE#	FUNCTION
L	A port = B port
H	Disconnect

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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

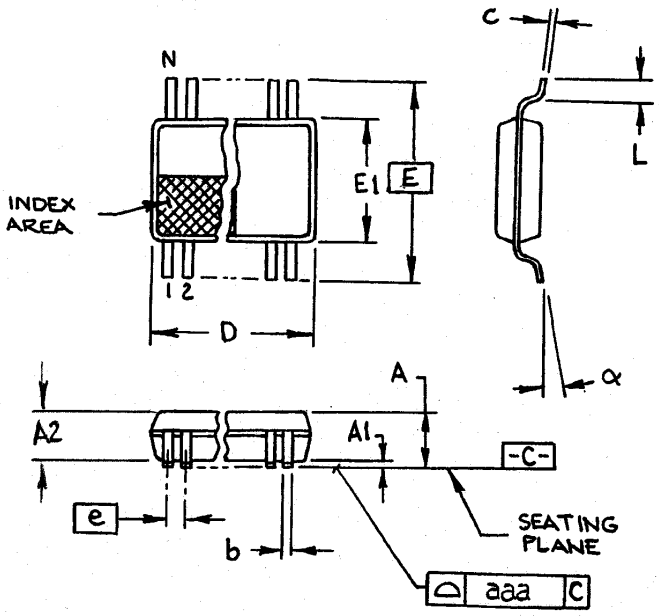
SYMBOL	PARAMETER	CONDITIONS	RATING	UNIT
V_{DD}	DC supply Voltage		-0.5 to +4.6	V
I_{IK}	DC input clamp current	$V_{I/O}$ <0	-50	mA
V_I	DC input voltage range (OE# only)[2]		V_{DD} + 0.5	V
T_{stg}	Storage temperature range		-65 to 150	°C
V_I	DC input voltage (except OE#)[2]		-0.5 to 4.6	V

Notes:

1. 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.
2. The input and output negative-voltage ratings may be exceeded if the input and output clamp-current ratings are observed.
3. The package thermal impedance is calculated in accordance with JESD 51.

Recommended Operating Condidions

SYMBOL	PARAMETER	LIMITS			
		MIN	TYP	MAX	UNIT
V_{DD}	DC supply Voltage	3	3.3	3.6	V
V_{REF}	Reference voltage (0.38 x V_{DD})	1.15	1.25	1.35	V
V_{IH}	AC high-level input	V_{REF}+ 350 mV			V
V_{IL}	AC low-level input voltage			V_{REF} -350mV	V
V_{IH}	DC high-level input voltage	V_{REF}+ 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 COMMON DIMENSIONS		In Inches 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	
α	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

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Ordering Information

ICS9S857yGT

Example:

ICS XXXX y G - PPP - T

- **Designation for tape and reel packaging**
- **Pattern Number (2 or 3 digit number for parts with ROM code patterns)**
- **Package Type**
  G=TSSOP
- **Revision Designator** (will not correlate with datasheet revision)
- **Device Type (consists of 3 or 4 digit numbers)**
- **Prefix**
  ICS, AV = Standard Device

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