

### Description

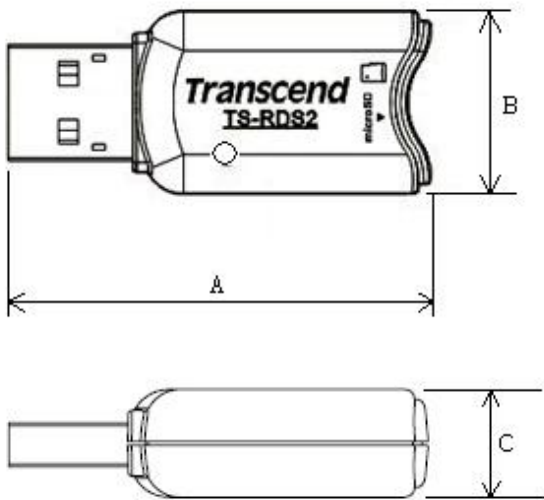
TS-RDS2 is a USB 2.0 Compact Card Reader. It is a small device specifically designed for fast and easy data transfer. The Card Reader accepts the direct insertion of **microSD™** Memory Cards.

### Features

- Fully Compliant with the Hi-Speed USB 2.0 specification
- Supports the direct input of Memory Card: **microSD™**
- Hi-Speed Data transfer rates up to 480Mb/s
- USB powered (no external power or battery needed)

- One of the following Operating Systems:
  - Windows® Me
  - Windows® 2000
  - Windows® XP
  - Windows Vista™
  - Mac™ OS 9.0, or later
  - Linux™ Kernel 2.4.2, or later

### Placement



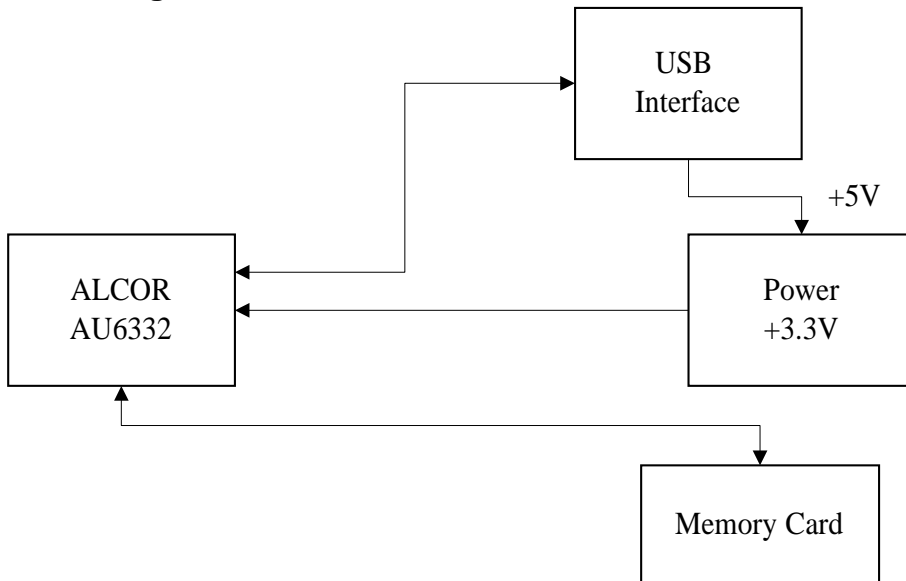
### Dimensions

Side	Millimeters	Inches
A	44.00 ± 1.00	1.73 ± 0.04
B	19.00 ± 1.00	0.75 ± 0.04
C	11.00 ± 1.00	0.43 ± 0.04

### System Requirements

- Desktop or notebook computer with a working USB port

### Block Diagram



### Pinouts

Pin No.	Pin Name
01	VCC
02	USB-
03	USB+
04	VSS

### Pin Identification

Symbol	Function
USB- USB+	USB differential signal: The pairs are used to transmit Data/Address/Command
VSS	Ground
VCC	USB Power Input

### Absolute Maximum Ratings

SYMBOL	PARAMETER	RATING	UNITS
$V_{DDHM}$	Power Supply	-0.3 to $V_{DDHM} + 0.3$	V
$V_{IN}$	Input signal Voltage	-0.3 to 3.6	V
$V_{OUT}$	Output signal Voltage	-0.3 to $V_{DDHM} + 0.3$	V
$T_{STG}$	Storage Temperature	-40 to 150	°C

### Recommended Operating Conditions

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS
$V_{DDHM}$	Power Supply	3.0	3.3	3.6	V
$V_{DD}$	Digital Supply	1.62	1.8	1.98	V
$V_{IN}$	Input signal Voltage	0	3.3	3.6	V
$T_{OPR}$	Operating Temperature	0		70	°C

### General DC Characteristics

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
$I_{IN}$	Input current	no pull-up or pull-down	-10	±1	10	μA
$I_{OZ}$	Tri-state leakage current		-10	±1	10	μA
$C_{IN}$	Input capacitance	Pad Limit		2.8		pF
$C_{OUT}$	Output capacitance	Pad Limit		2.8		pF
$C_{BID}$	Bi-directional buffer capacitance	Pad Limit		2.8		pF

### DC Electrical Characteristics of 3.3V I/O Cells

SYMBOL	PARAMETER	CONDITIONS	Limits			UNIT
			MIN	TYP	MAX	
$V_{DDHM}$	Power supply	3.3V I/O	3.0	3.3	3.6	V
$V_{il}$	Input low voltage	LVTTTL			0.8	V
$V_{ih}$	Input high voltage		2.0			V
$V_{ol}$	Output low voltage	$ I_{ol}  = 2 \sim 16\text{mA}$			0.4	V
$V_{oh}$	Output high voltage	$ I_{oh}  = 2 \sim 16\text{mA}$	2.4			V
$R_{pu}$	Input pull-up resistance	PU=high, PD=low	55	75	110	$K\Omega$
$R_{pd}$	Input pull-down resistance	PU=low, PD=high	40	75	150	$K\Omega$
$I_{in}$	Input leakage current	$V_{in} = V_{DDHM}$ or 0	-10	$\pm 1$	10	$\mu A$
$I_{oz}$	Tri-state output leakage current		-10	$\pm 1$	10	$\mu A$

### Electrical Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
VD33	Analog supply voltage		3.0	3.3	3.6	V
VDDA VDDU	Digital supply voltage		1.62	1.8	1.98	V
$I_{CC}$	Operating supply current	High speed operating at 480 MHz			55	mA
$I_{CC(susp)}$	Suspend supply current	In suspend mode, current with 1.5k $\Omega$ pull-up resistor on pin RPU			120	$\mu A$

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