

MICRODIA®

52XTRA™
microSD™ &
microSDHC™ Card
Specifications

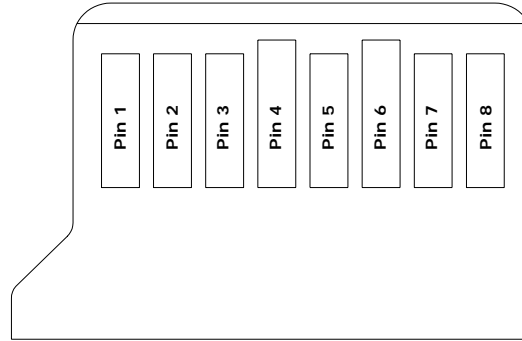
microSD™ Card Features

- Ultra Fast Read and Write Speeds of 7.8MB/sec
- Selectable write protect switch for preventing your data from being overwritten (SD Adapter)
- Advanced IC packaging technology
- PRIME Grade Flash ICs
- Waterproof, dust proof, ESD proof and extreme temperature resistant
- Durable, reliable and thoroughly tested – temperature tested (heat and cold); shock and vibration tested
- Compliant with the Secure Digital Music Initiative. (SDMI)
- Tested internally by MICRODIA under HD BENCH
- MICRODIA's Exclusive Lifetime Limited Warranty

microSDHC™ Card Features

- Compliant with SD V2.00 Specification
- Ultra Fast Read and Write Speeds of 7.8MB/sec
- Class Speed is defined to indicate minimum performance of the card
- Selectable write protect switch for preventing your data from being overwritten (SD Adapter)
- Advanced IC packaging technology
- PRIME Grade Flash ICs
- Waterproof, dust proof, ESD proof and extreme temperature resistant
- Durable, reliable and thoroughly tested – temperature tested (heat and cold); shock and vibration tested
- High storage capacity for storing essential digital content such as high quality photos, videos, music and movie.
- Compliant with the Secure Digital Music Initiative. (SDMI)
- Optimal speed and performance for microSDHC compatible devices
- Tested internally by MICRODIA under HD BENCH
- MICRODIA's Exclusive Lifetime Limited Warranty

Pin Configuration



Pin No.	SD Mode			SPI Mode		
	Name	Type ¹	Description	Name	Type	Description
1	DAT2	I/O/PP	Data Line (Bit 2)	RSV		Reserved
2	CD/DAT ²	I/O/PP ³	Card Detect/Data Line (Bit 3)	CS	I ³	Chip Select (neg true)
3	CMD	PP	Command/Response	DI	I	Data In
4	V _{DD}	S	Supply voltage	V _{DD}	S	Supply voltage
5	CLK	I	Clock	SCLK	I	Clock
6	V _{SS}	S	Supply voltage ground	V _{SS}	S	Supply voltage ground
7	DAT0	I/O/PP	Data Line (Bit 0)	DO	O/PP	Data Out
8	DAT1	I/O/PP	Data Line (Bit 1)	RSV		Reserved

DC Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit
Supply Voltage	V _{CC}	2.0	3.3	3.6	V
Operating Current	I _{CC}	-	-	50	mA
Standby Current	I _{SB}	-	-	70	μA
Input Leakage Current	I _{LI}	-10	-	10	μA
Output Leakage Current	I _{LO}	-10	-	10	μA
Input High Voltage	V _{IH}	0.8 x V _{DD}	-	V _{CC} + 0.3	V
Input Low Voltage	V _{IL}	-	-	0.2 x V _{DD}	V
Output High Voltage	V _{OH}	2.4	-	-	V
Output Low Voltage	V _{OL}	-	-	0.4 x V _{DD}	V

Electrical Characteristics

Type	Measurement
Card Support	2.0V to 3.6V
Card Support Frequency:	0 to 50MHz
Data Width Support:	1 and 4 bits
Data Transfer Rate:	Up to 7.8MB/sec.

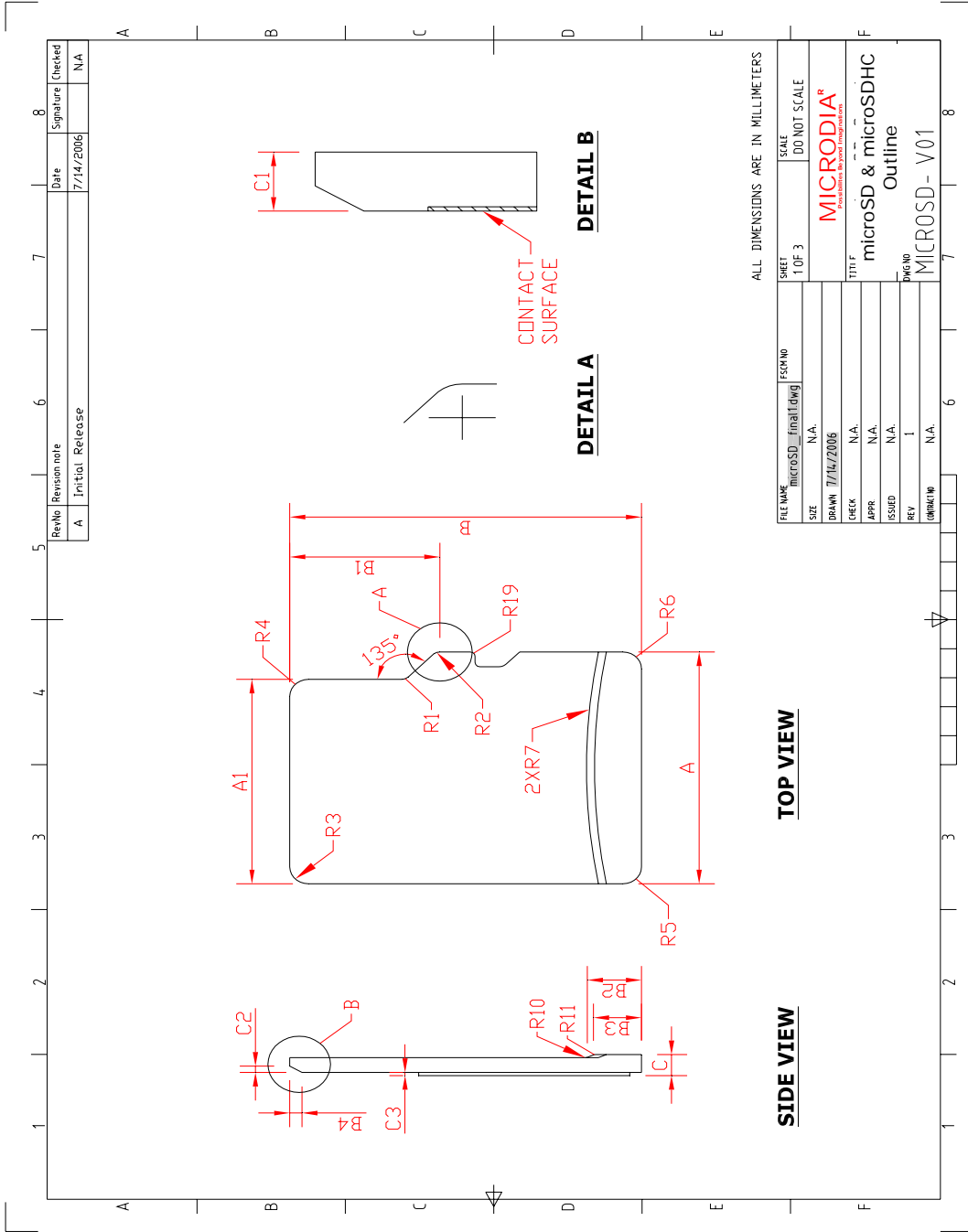
Environment Specifications

Type		Standard
Temperature	Operating	-25°C to - 85°C
	Non-Operating	-40°C to - 85°C
Humidity	Operating	8% to – 95%, non-condensing
	Non-Operating	8% to – 95%, non-condensing
Vibration	Operating	15G peak-to-peak Max.
	Non-Operating	15G peak-to-peak Max.
Mechanical Shock	Operating	1,000G Max
	Non-Operating	1,000G Max

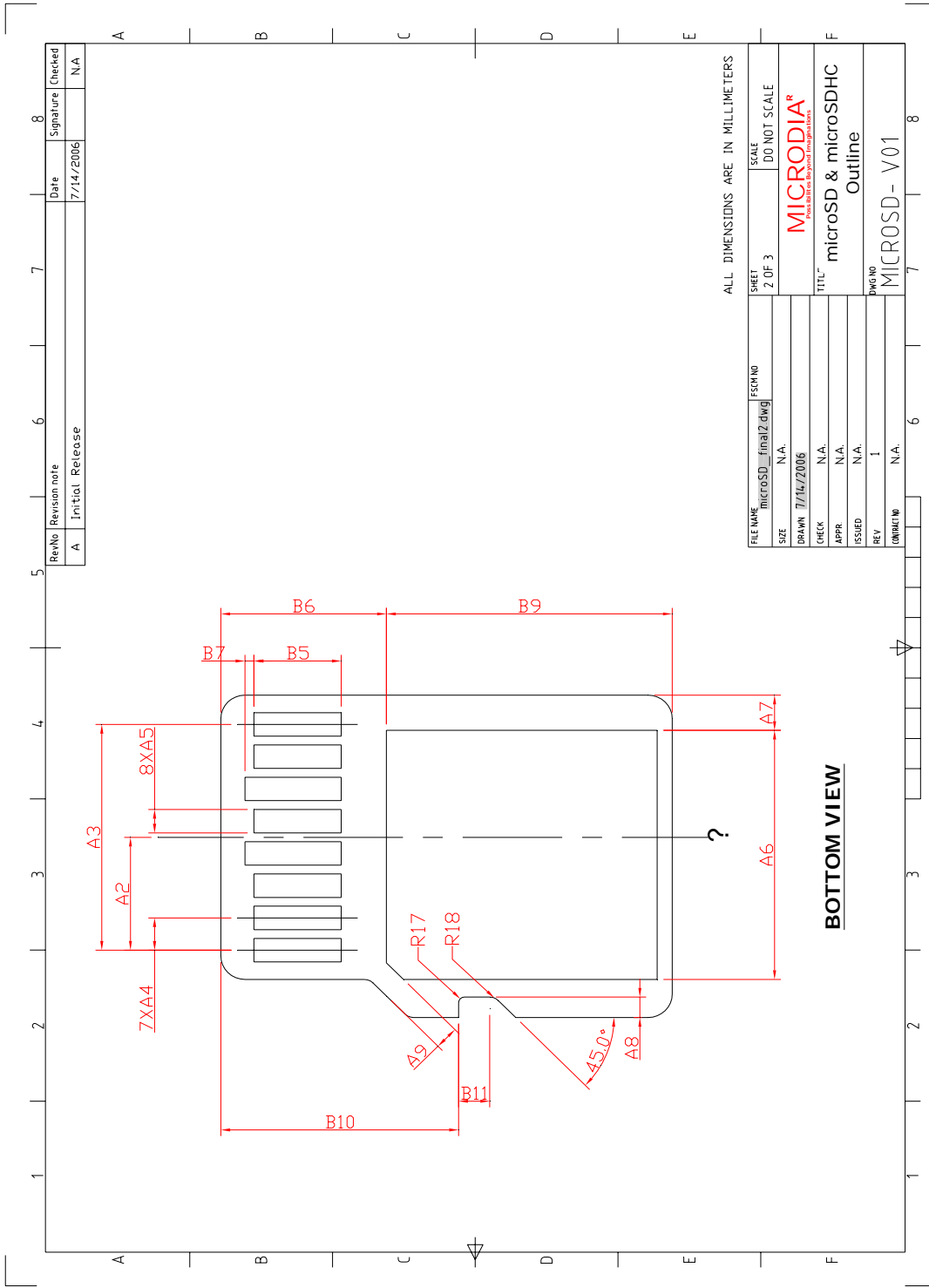
Physical Dimension Specifications

Type	Measurement
Length	11.00 ± 0.10 mm
Width	15.00 ± 0.10 mm
Thickness	0.95 ± 0.15 mm
Weight	Approx. 0.4 g

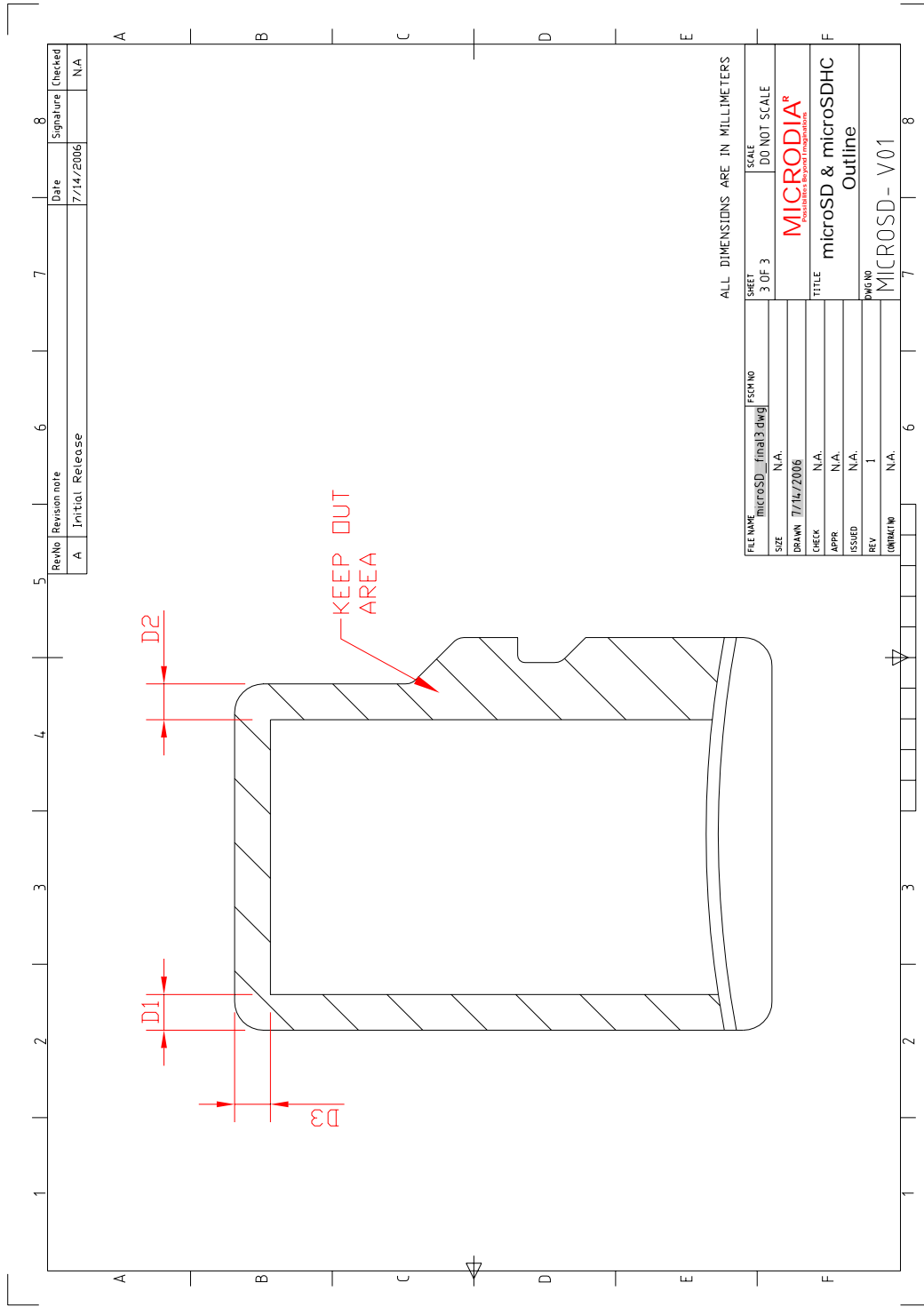
Mechanical Form Factor



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RevNo	Revision note	Date	Signature	Checked
A	Initial Release	7/14/2006		NA

ALL DIMENSIONS ARE IN MILLIMETERS

FILE NAME	microSD_final3.dwg	ESCHNO	SHEET	SCALE
SIZE	N/A		3 OF 3	DO NOT SCALE
DRAWN	7/14/2006			
CHECK	N/A			
APPR	N/A			
ISSUED	N/A			
REV	1			
ORIGINATOR	N/A			

TITLE
MICRODIA[®]
 microSD & microSDHC
 Outline

DWG NO
 MICROSD- V01

COMMON DIMENSIONS				
SYMBOL	MIN	NOM	MAX	NOTE
A	10.90	11.00	11.10	
A1	9.60	9.70	9.80	
A2	-	3.85	-	BASIC
A3	7.60	7.70	7.80	
A4	-	1.10	-	BASIC
A5	0.75	0.80	0.85	
A6	-	-	8.50	
A7	0.90	-	-	
A8	0.60	0.70	0.80	
A9	0.80	-	-	
B	14.90	15.00	15.10	
B1	6.30	6.40	6.50	
B2	1.64	1.84	2.04	
B3	1.30	1.50	1.70	
B4	0.42	0.52	0.62	
B5	2.80	2.90	3.00	
B6	5.50	-	-	
B7	0.20	0.30	0.40	
B8	1.00	1.10	1.20	
B9	-	-	9.00	
B10	7.80	7.90	8.00	
B11	1.10	1.20	1.30	
C	0.90	1.00	1.10	
C1	0.60	0.70	0.80	
C2	0.20	0.30	0.40	
C3	0.00	-	0.15	
D1	1.00	-	-	
D2	1.00	-	-	
D3	1.00	-	-	
R1	0.20	0.40	0.60	
R2	0.20	0.40	0.60	
R3	0.70	0.80	0.90	
R4	0.70	0.80	0.90	
R5	0.70	0.80	0.90	
R6	0.70	0.80	0.90	
R7	29.50	30.00	30.50	
R10	-	0.20	-	
R11	-	0.20	-	
R17	0.10	0.20	0.30	
R18	0.20	0.40	0.60	
R19	0.05	-	0.20	

Notes:

1. DIMENSIONING AND TOLERANCE PER ASME Y14.5M - 1994
2. DIMENSIONS ARE IN MILLIMETERS.