

# MEMORY CARDS



## Industrial Grade 3.0 MicroSD Card

- Comply to the Secure Digital Association / SDA standard
- MLC and Ultra MLC\* NAND Flash technology
- MLC capacity 2 ~ 32GB, Ultra MLC capacity 2 ~ 16GB
- Temperature range -25 ~ 85°C
- Extreme rugged, vibration, water and shock resistant
- Fixed BOM upon on request

\* Ultra MLC features and endurance is close to SLC performance but to lower cost.

### Technical data:

#### Electrical & performance:

Interface:	8-pin. Supports version 3.0
Operating frequency:	50MHz or 100MHz
DC input voltage:	2.7-3.6VDC
Power consumption:	100mA (typical)
Transfer rate MLC/Ultra:	Read 22/22MB/s and write 10/18MB/s

#### Environmental:

Temperature range:	-25°C ~ +85°C
Humidity:	10% ~ 95%, non-condensing
Vibration:	5G (10-500Hz), 20G (60-2000Hz)
Shock:	1500G (0.5ms)
ESD proof:	Yes, +/-4kV
Acoustic noise:	0dB
IP class:	IPX7

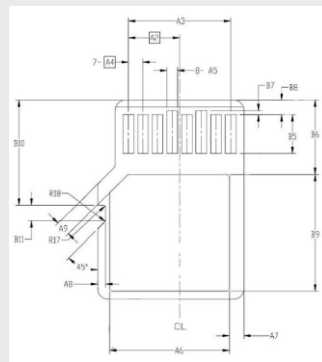
#### Reliability:

Endurance:	>2.000.000 erase/write cycles
Program/erase cycles:	MLC: 3.000 times / Ultra MLC: 50.000 times
Data retention:	1 ~ 10 years depending upon write erase cycles
Number of Insertion reliability:	10.000 times
MTBF:	3.000.000 hours

#### Mechanical & Certificates:

Size:	15x11x1mm
Weight:	<1g (MicroSD card only), 6g packed in small minicase
Certificate:	CE/FCC/RoHS/BSMI

#### Dimensions:



SYMBOL	COMMON DIMENSIONS		
	MIN	NOM	MAX
A	10.90	11.00	11.10
A1	9.60	9.70	9.80
A2	-	3.85	-
A3	7.60	7.70	7.80
A4	-	1.10	-
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	

#### Ordering information:

MLC type	Ultra MLC type	Capacity
Not available	002GEX-PM	2GB
004GMX-PM	004GEX-PM	4GB
008GMX-PM	008GEX-PM	8GB
016GMX-PM	Not available	16GB