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2. Pin Assignment

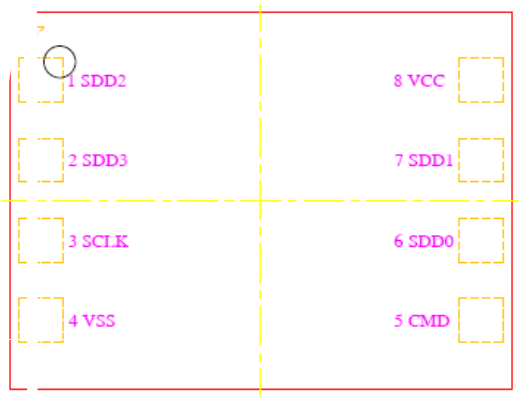


Figure 1:Top View

		SD Mode	SPI Mode	
Name	**Tyte**	**Description**	**Tyte**	**Description**
DAT2	I/O/PP	Data Line [Bit2]	RSV	Reserved
DAT3	I/O/PP	Data Line [Bit3]	I3	Chip select(neg true)
		Clock	I	Clock
GND	S	Supply voltage ground	S	Supply voltage ground
		Supply voltage	S	Supply voltage
	PP	Data Line [Bit1]	RSV	Reserved
	PP	Data Line [Bit0]	OPP	Data Out
		Command/Response	I	Data In

3. Product List

Product model	Capacity	Actual Size	Sequential R/W (Note1)	Package
HHW1GS60C-B1	128MB	119MB	12/4 MB/s	6.00*8.00 (mm)

6. Physical Dimension

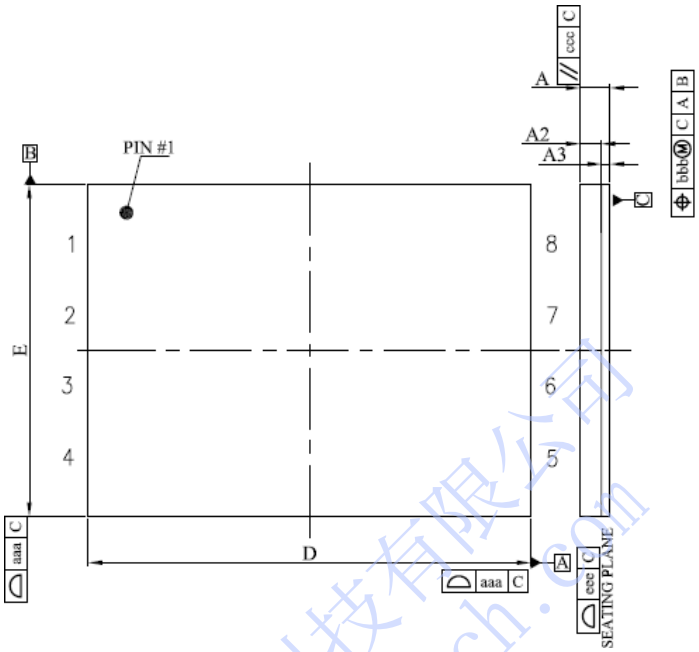


Figure 2:Top View and Side View

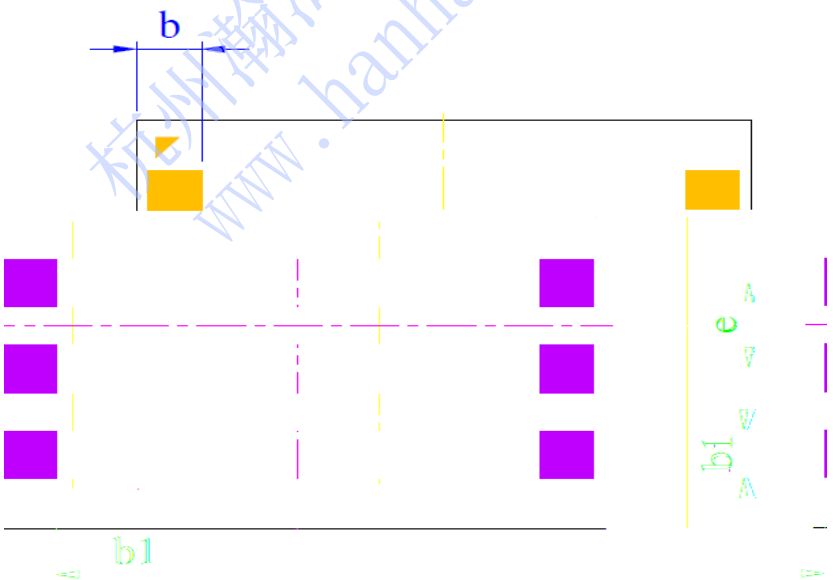


Figure 3: Bottom View

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Item		Symbol	DIMENSION (mm)		
			MIN.	NOM.	MAX
Total height		A	0.75	0.80	0.85
Mold thickness		A2	0.60	0.62	0.63
SBT thickness		A3	0.15	0.18	0.21
Lead width		b	0.80	0.85	0.90
Lead width		b1	0.70	0.75	0.80
Package size	X	D	7.90	8.00	8.10
	Y	E	5.90	6.00	6.10
Lead pitch		e	1.27BSC		
Package profile of a surface		aaa	0.25		
Lead position		bbb	0.10		
Paralleliam		ccc	0.10		
Package profile of a surface		eee	0.08		

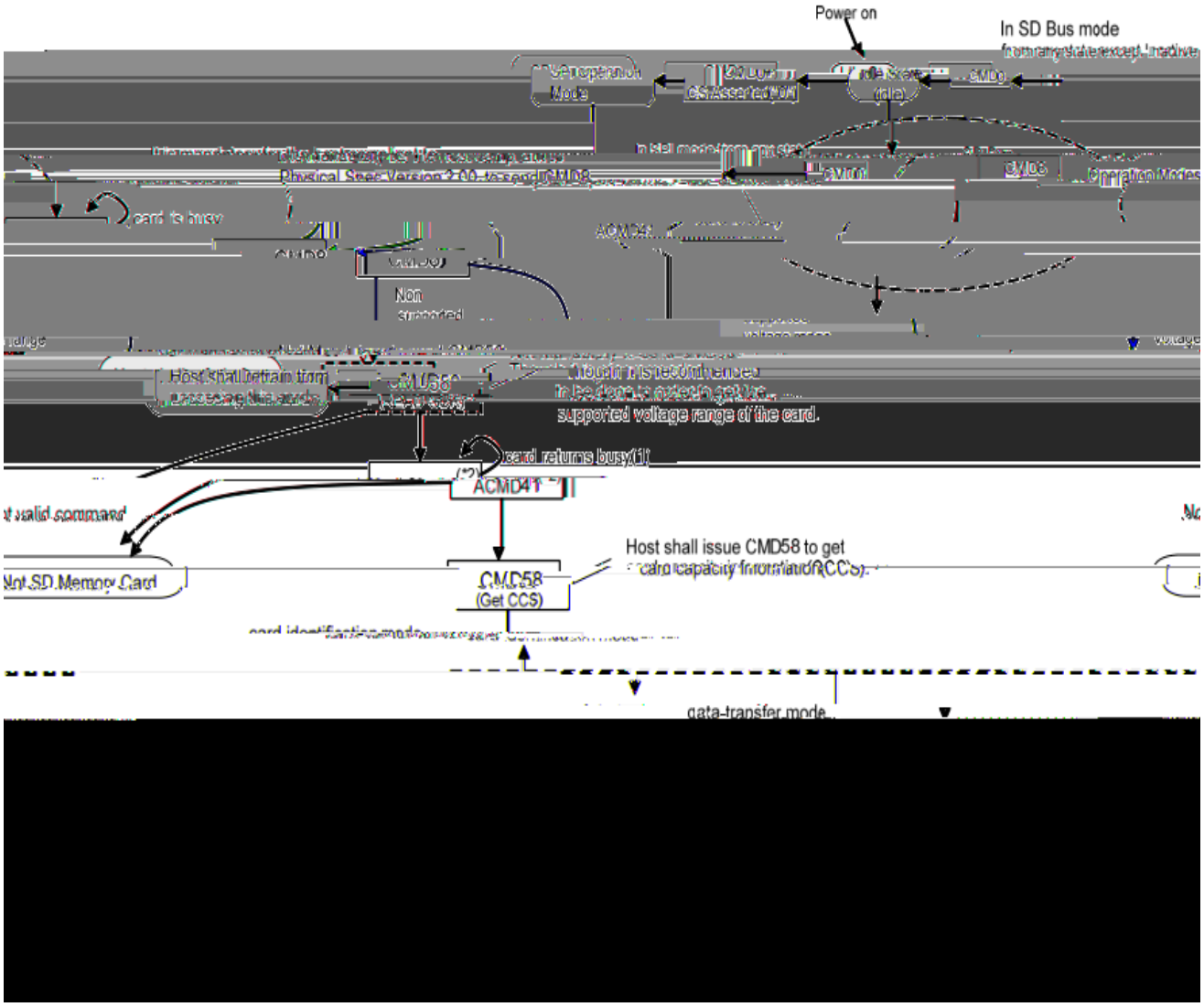
Table 4: T-Flash Package: Dimension

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Card Command Class (CCC)		0	1	2	3	4	5	6	7	8	9	10	11
Supported commands	Class description	basic	reserved	block read	reserved	write block write	erase	appli-cation spec. protec-tion	LCK card	ion spe-cific	mode	switch	reserved
00	Mandatory	+											CMD
02	Mandatory	+											CMD
03	Mandatory	+											CMD
04	Mandatory	+											CMD
05	Optional										+		CMD
06[2]	Mandatory											+	CMD
										CMD7	Mandatory		+
										CMD8[3]	Mandatory		+
										CMD9	Mandatory		+
										CMD10	Mandatory		+
										CMD11[5]	Optional		+
										CMD12	Mandatory		+

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CMD56	Mandatory									+			
CMD57[2]	Optional											+	
ACMD6	Mandatory									+			
ACMD13	Mandatory									+			


Power on
In SD Bus mode
CMD0
card is busy
Non
supported
Host shall refrain from
CMD58
supported voltage range of the card.
card returns busy(1)
ACMD41
Host shall issue CMD58 to get
CMD58
(Get CCS)
data-transfer mode

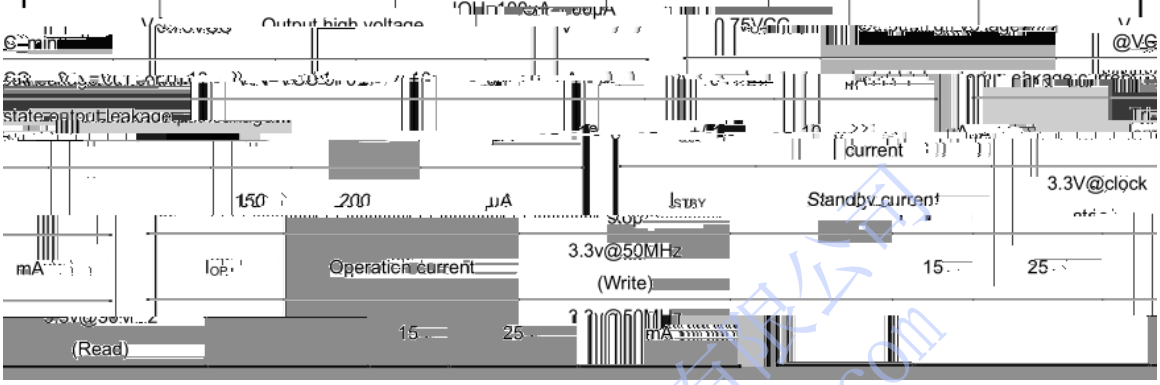
12. SD Mode



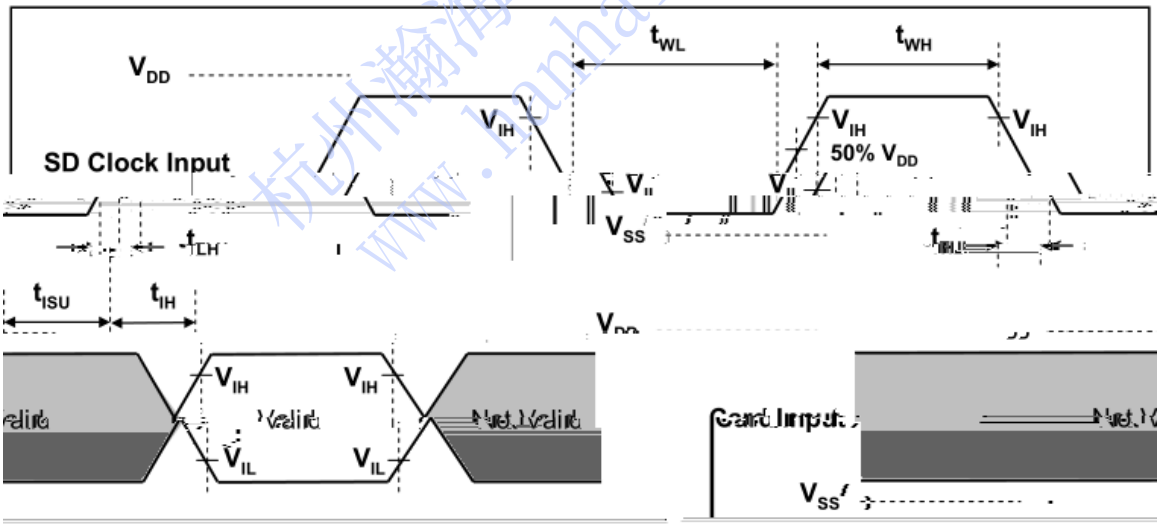
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13. DC Characteristics

Symbol	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
V_{IL}	Input low voltage		VSS-0.3		0.25VCC	V
V_{IH}	Input high voltage		0.625VCC		VCC+0.3	V
V_{OL}	Output low voltage	IOL=100μA @VCC_min			0.125VCC	V

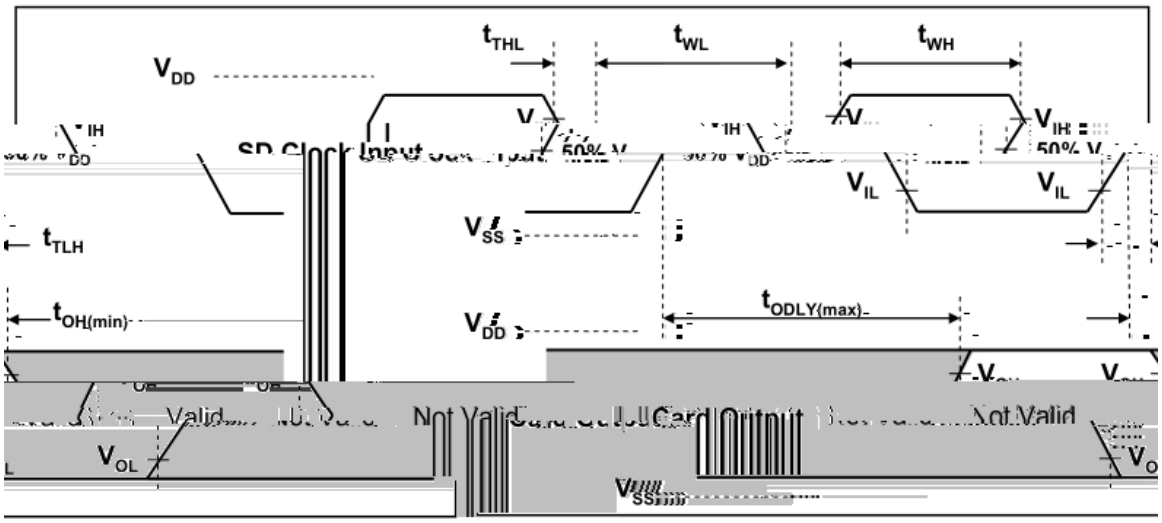


14. Bus Timing (High-Speed Mode)



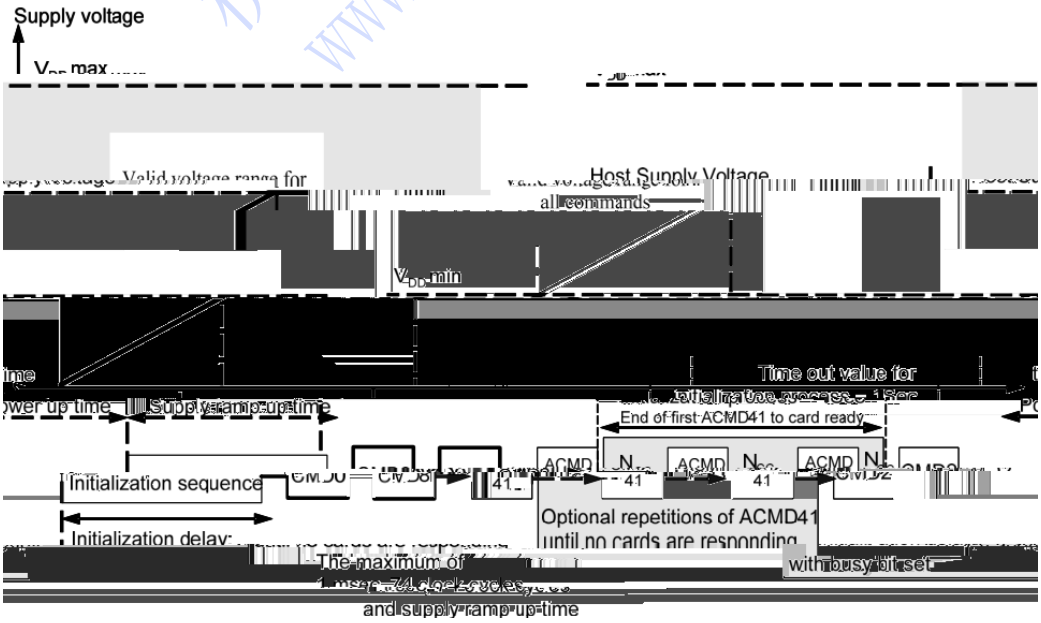
Card Input Timing (High Speed Card)

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Card Output Timing (High Speed Mode)

15. Power Up



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Power-up Diagram

'Power up time' is defined as voltage rising time from 0 volt to Vop min (refer to 6.6) and depends on application parameters such as the maximum number of SD Cards, the bus length and the characteristic of the power supply unit.

'Supply ramp up time' provides the time that the power is built up to the operating level (Host Suppl Voltage) and the time to wait until the SD card can accept the first command.

The host shall supply power to the card so that the voltage is reached to Vdd