

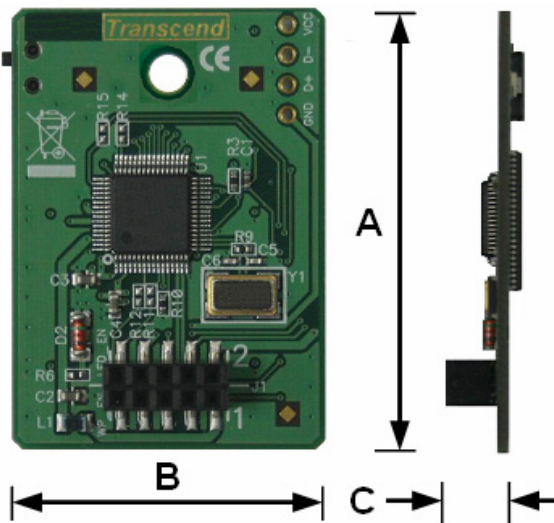
TS128M~4GUFM-H

128MB~4GB USB Flash Module (Horizontal)

Description

TS128M~4GUFM-H are 128MB~4GB USB Flash Modules (Horizontal) with 1 or 2 pcs of Flash Memory assembled on a printed circuit board.

Outline



Dimensions

Side	Millimeters	Inches
A	37.80 ± 1.00	1.49 ± 0.04
B	26.65 ± 1.00	1.05 ± 0.04
C	7.00 ± 1.00	0.28 ± 0.04

Order Information

Transcend P/N	Capacity
TS128MUFM-H	128MB
TS256MUFM-H	256MB
TS512MUFM-H	512MB
TS1GUFM-H	1GB
TS2GUFM-H	2GB
TS4GUFM-H	4GB

Features

- RoHS compliant products
- High-speed USB 2.0 interface
- Compatible with Windows Vista and support to ReadyBoost
- Fully compatible with open industry standards and Operating Systems (OS) that support the USB standard
- 8032 8-bit Micro-controller with enhanced feature
 - Integrated 4-byte ECC circuits
 - 4 clocks per instruction cycle
 - Embedded RAM and ROM
- Low Power Consumption
- Write protection switch
- Additional external 4-pin-out (male, pitch = 2.54mm) USB connector
- LED indicates the access status of USB Flash Module
- Support Outside-Control for Write-Protect and LED Indication functions

System Requirement

- Hardware: An available 10-pin male USB port (pitch = 2.0mm) on motherboard
- Operating System: Windows® 98SE, Windows® Me, Windows® 2000, Windows® XP, and Linux™ Kernel 2.4 or later

LED Status

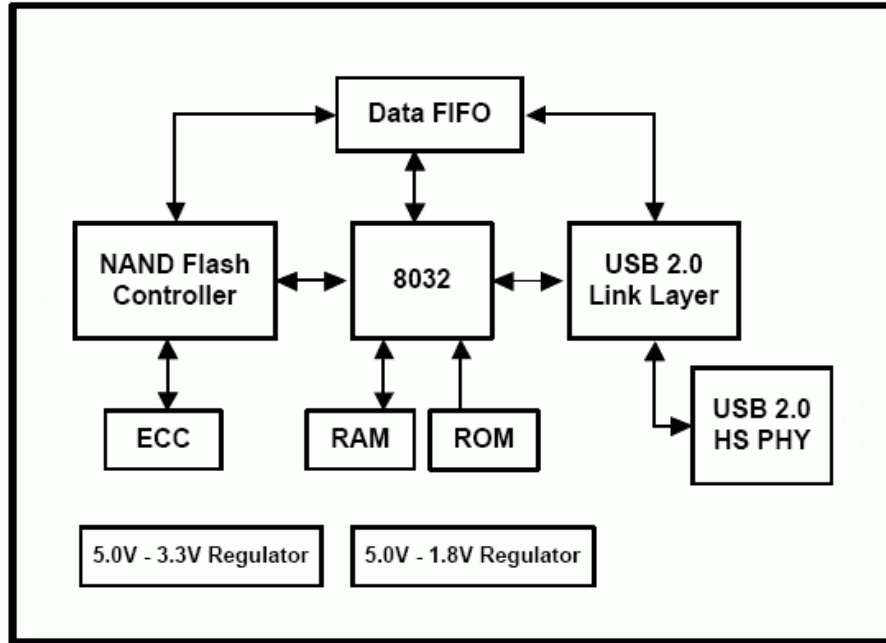
Mode	Potential	LED
Idle	VCC	OFF
Read/Write	VCC/GND	GLITTER

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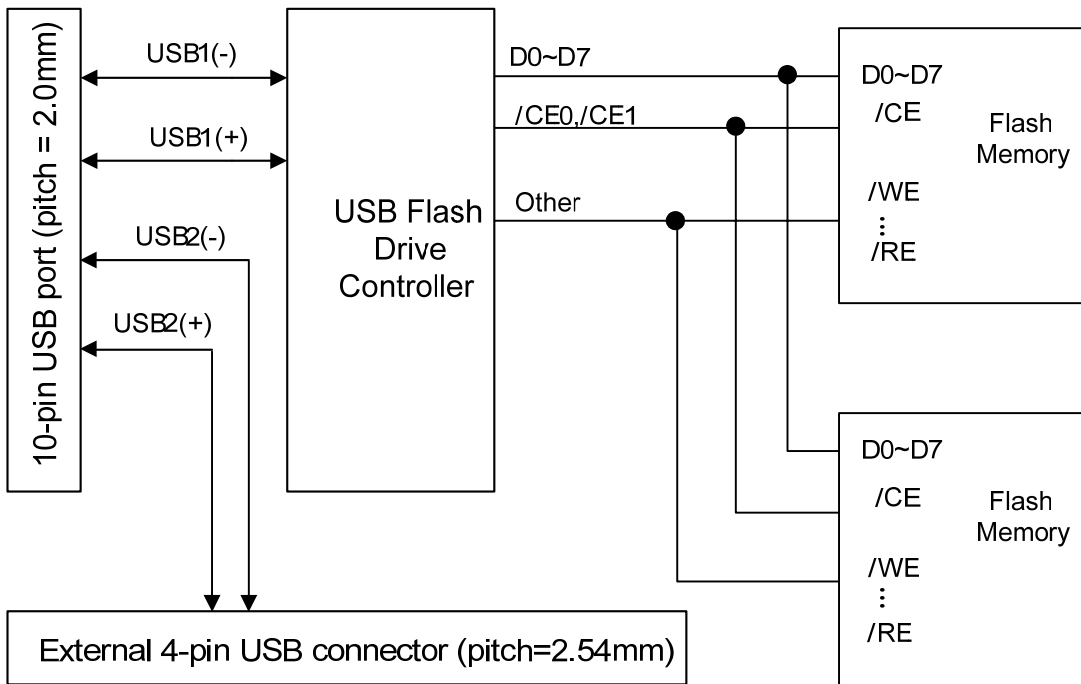
128MB~4GB USB Flash Module (Horizontal)

Block Diagram

- USB Flash Drive controller



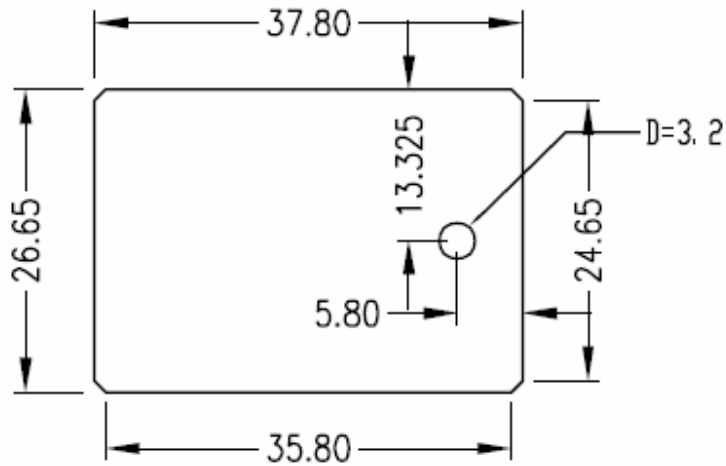
- With 1 or 2 pcs of Flash Memory



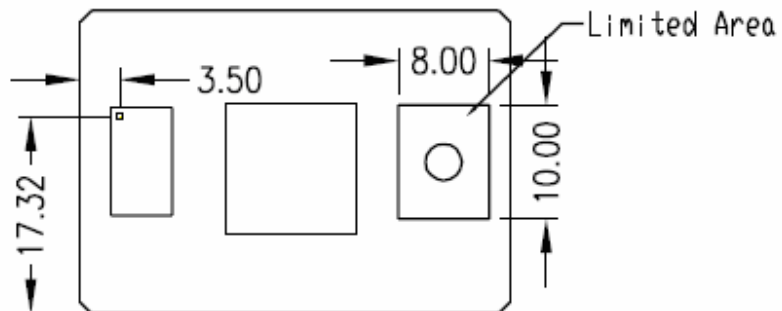
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128MB~4GB USB Flash Module (Horizontal)

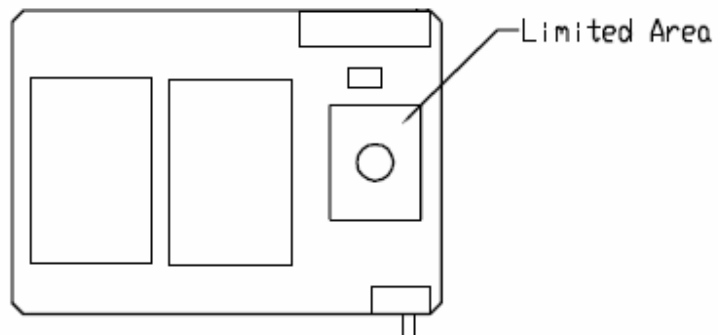
PCB Dimension (unit: mm)



• Top side



• Bottom side



TS128M~4GUFM-H

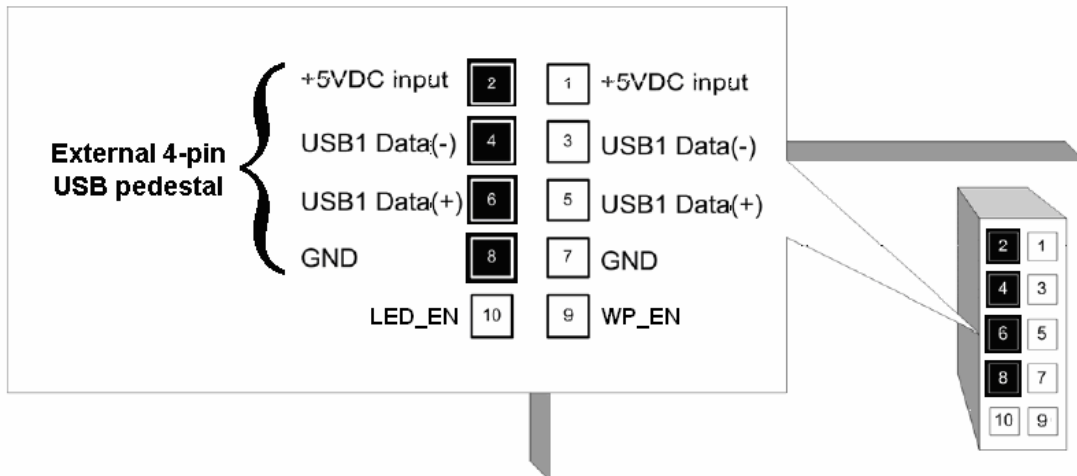
128MB~4GB USB Flash Module (Horizontal)

Pinouts

Pin No.	Pin Name
01	VCC
02	VCC(to external USB)
03	USB1(-)
04	USB2(-)(to external USB)
05	USB1(+)
06	USB2(+)(to external USB)
07	VSS
08	VSS(to external USB)
09	WP_EN
10	LED_EN

Pin Identification

Symbol	Function
USB1(-) USB2(-) USB1(+) USB2(+)	USB differential signal: The pairs are used to transmit Data/Address/Command
VSS	Ground
VCC	USB power input
WP_EN	Outside-Controlling for Write-Protect function
LED_EN	Outside-Controlling for LED Indication

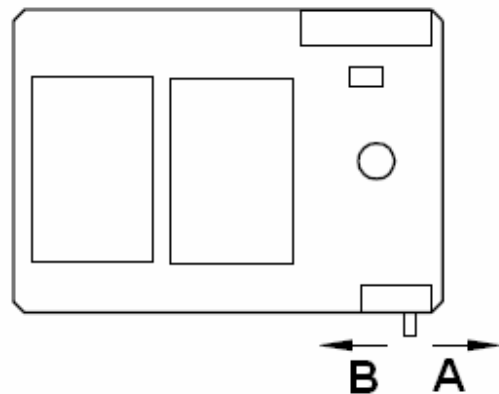


Switch Setting

Setting	Potential	Write-Protect
A	Open	OFF
B	GND	ON

Information Setting

Item	Setting
Product Name	TS128M~4GUFM-H
Manufactures String	Transcend
Product String	TS128M~4GUFM-H



TS128M~4GUFM-H

128MB~4GB USB Flash Module (Horizontal)

Specifications

Environment		
Capacity		128MB~4GB
Temperature	Operating	0 °C to 70 °C
	Non-Operating	-40 °C to 85 °C
System Performance	Read Speed	30 MB/sec (Max.)
	Write Speed	20 MB/sec (Max.)
Power Requirement	Voltage	DC 5V ± 10%
Power Consumption	Read Current	96.6 mA
	Write Current	104.8 mA
	Idle Current	43.8 mA
	Suspend Current	500 uA
Dimension	LxWxH	37.8mmx26.65mmx7mm
Weight		5g
Data Retention		10 years
Connector Durability		10,000 times
Erase Cycles		>2,000,000 times
Certificates		CE, FCC, BSMI

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DC Characteristics

Symbol	Parameter	Min.	Max.	Unit
V_{IH_TTL}	TTL Input High Voltage	2	$0.3+V_{CC3}$	V
V_{IL_TTL}	TTL Input Low Voltage	-0.3	0.8	V
V_{OH_TTL}	TTL Output High Voltage	$0.9V_{CC3}$		V
V_{OL_TTL}	TTL Output Low Voltage		0.45	V
I_{OH_TTL}	TTL Output High Current	-4		mA
I_{OL_TTL}	TTL Output Low Current		4	mA
V_{IH_USB}	USB Input High Voltage for Low-/Full-Speed	2.0		V
V_{IL_USB}	USB Input Low Voltage for Low-/Full-Speed		0.8	V
$V_{I_USB_CM}$	Differential Common Mode Input Range for Low-/Full-Speed	0.8	2.5	V
$V_{I_USB_HSSQ}$	USB High-Speed squelch Input Detection Threshold	0.1	0.15	V
$V_{I_USB_HSDSC}$	USB High-Speed disconnect Input Detection Threshold	0.525	0.625	V
$V_{I_USB_HSCM}$	USB High-Speed Signaling	-0.05	0.5	V
V_{OH_USB}	USB Output High Voltage for Low-/Full-Speed	2.8	3.6	V
V_{OL_USB}	USB Output Low Voltage for Low-/Full-Speed		0.3	V
$V_{OH_USB_HS}$	USB Output High Voltage for High-Speed	0.36	0.44	V
$V_{OL_USB_HS}$	USB Output Low Voltage for High-Speed	-0.01	0.01	V
I_{OH_USB}	USB Output High Current for Low-/Full-Speed	-10		mA
I_{OL_USB}	USB Output Low Current for Low-/Full-Speed		10	mA
$I_{OH_USB_HS}$	USB Output High Current for High-Speed	-40		mA
$I_{OL_USB_HS}$	USB Output Low Current for High-Speed		40	mA

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AC Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Unit
TP _{ILH}	Input Rising Delay	0.61 (0.8pF)	0.72 (2.4pF)	0.92 (4.8pF)	ns
TP _{IHL}	Input Falling Delay	0.88 (0.8pF)	1.03 (2.4pF)	1.24 (4.8pF)	ns
TP _{OLH}	Output Rising Delay	2.40 (10pF)	3.42 (30pF)	4.88 (60pF)	ns
TP _{OHL}	Output Falling Delay	2.61 (10pF)	3.62 (30pF)	5.03 (60pF)	ns
TR	Output Rising Delay	2.26 (10pF)	4.45 (30pF)	7.83 (60pF)	ns
TF	Output Falling Delay	1.90 (10pF)	3.63 (30pF)	6.23 (60pF)	ns

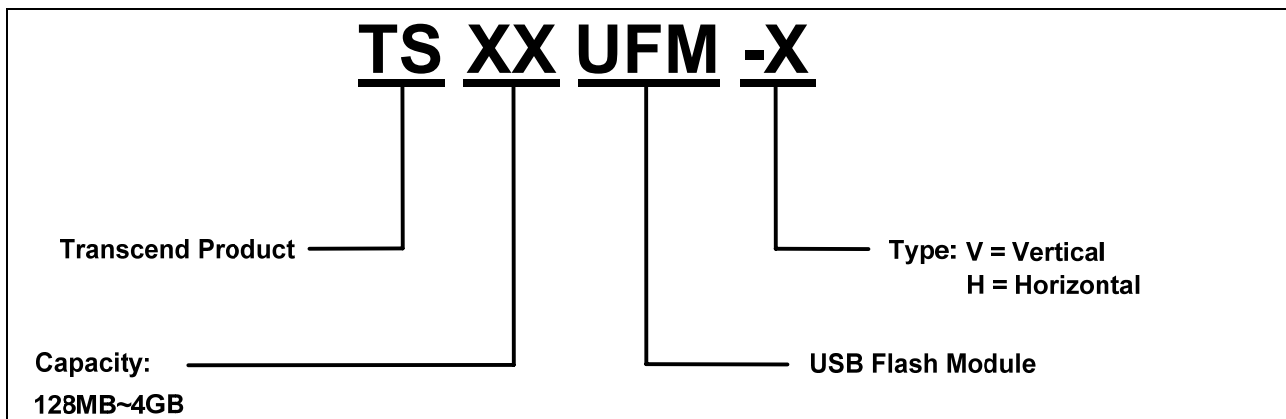
Absolute Maximum Ratings

Symbol	Parameter	Min.	Max.	Unit
T _{STORAGE}	Storage Temperature	-40	85	°C
T _A	Ambient Operating Temperature	0	75	°C
V _{CC3}	3.3V Supply Voltage	-0.3	3.6	V
V _{CC18}	1.8V Supply Voltage	-0.3	2	V
V _{in3.3}	3.3V Buffer Input Voltage	-0.3	3.6	V
V _{in3/5}	3.3V/5V Buffer Input Voltage	-0.3	5	V
V _{in1.8}	1.8V Buffer Input Voltage	-0.3	2	V

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Naming Rule



Above technical information is based on industry standard data and tested to be reliable. However, Transcend makes no warranty, either expressed or implied, as to its accuracy and assumes no liability in connection with the use of this product. Transcend reserves the right to make changes in specifications at any time without prior notice.

Transcend
Exceeding Your Expectations

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