



storage solutions  
for demanding applications™

Product Specification

## 2.5" IDE CompactFlash Adapter - I25CF

Adtron's I25CF CompactFlash adapter offers easy storage solutions without the need for system modifications, making the I25CF a simple upgrade to all solid state performance. The I25CF uses industry standard ATA interface and connects to IDE controllers found in the majority of today's embedded computers. The I25CF integrates both master and slave storage functions using two independent flash media within one package. This feature of the I25CF allows the data, application and operating system to be installed on independent media.

Adtron's I25CF is available in two models, 01 and 10. Model 10 offers write protect options on one or both CompactFlash cards. Both models offer low profile 2.5" flash disks that provide the same storage functions found in hard disk drives. In addition, the I25CF has operating reliability with extended MTBF and rugged durability.



I25CF Model 10

### Adtron Corporation

4415 E. Cotton Center Blvd., Suite 100  
Phoenix, AZ 85040  
Tel: (602) 735-0300 • Fax: (602) 735-0359  
Email: [info@adtron.com](mailto:info@adtron.com)  
Web: <http://www.adtron.com>

Europe: Zurich, Switzerland  
Tel: +41-56-496-5640 • Fax: +41-56-496-5648  
Email: [europe@adtron.com](mailto:europe@adtron.com)

## CONTENTS

<b>2.5" COMPACTFLASH ADAPTER - I25CF</b> .....	<b>1</b>
General Description .....	1
Applications .....	1
Features.....	1
<b>PIN CONFIGURATION</b> .....	<b>2</b>
Connector Configuration Pinout.....	2
I25CF 44-Pin Connector .....	2
I25CF Jumpers.....	2
Connector Configuration Descriptions .....	3
<b>I25CF MODEL 10 OPTIONS</b> .....	<b>4</b>
Write Protect Options.....	4
LED Operation .....	4
J3 Master and Slave Indicators .....	4
J3 Signal Descriptions External.....	4
<b>I25CF CHARACTERISTICS</b> .....	<b>5</b>
Absolute Maximum Ratings .....	5
Recommended Operating Conditions .....	5
Power Requirements .....	5
Physical Characteristics .....	5
Capacitance .....	5
<b>PACKAGE DIMENSIONS</b> .....	<b>6</b>
I25CF Model 01 .....	6
I25CF Model 10 .....	7
<b>ORDERING INFORMATION</b> .....	<b>8</b>

---

Trademarks are the property of their respective owners.

The information contained in this document is subject to change without notice and does not represent or imply warranty, and no liability is assumed by Adtron Corp.

## **2.5" COMPACTFLASH ADAPTER - I25CF**

### **General Description**

- The Adtron I25CF is an easy to use CompactFlash adapter in a 2.5" IDE disk drive form factor.
- The I25CF applies solid state reliability to replace hard disks in applications where extreme temperature, shock and vibration prohibit use of traditional rotating media.
- The I25CF offers integrated master and slave storage with a different CompactFlash card for each.
- The I25CF includes a cover and mounting brackets.
- Media is not included.

### **Applications**

- Telecommunication switches
- Network routers
- Information kiosks
- Display systems
- Instrumentation
- Factory automation
- Robotics

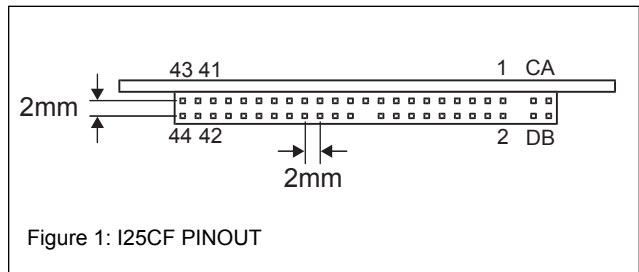
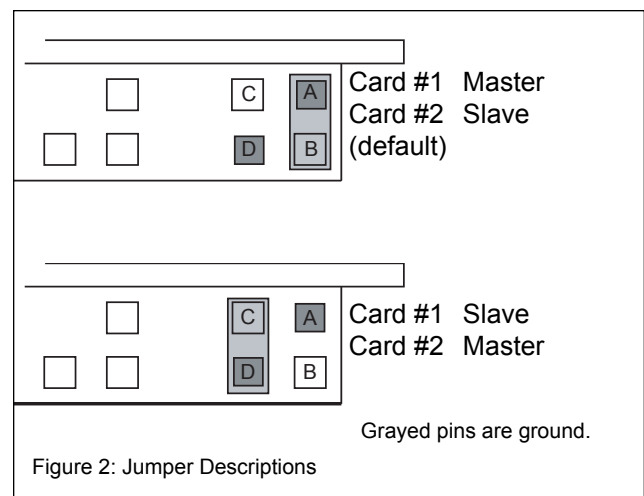
### **Features**

- Model 10 provides write protection on one or both CompactFlash cards
- Standard 2.5" IDE drive form factor
- Standard IDE 44-pin, 2mm connector and interface
- No software drivers required
- Supports one or two CompactFlash cards
- Configures as a single master or single slave IDE device, or as both master and slave IDE devices
- Includes Multiword DMA connections
- Lower power, no noise, and lower profile compared to traditional rotating media
- The I25CF adapter is rated for Industrial operating temperature ranges.
- Standard Warranty: 3 years

**PIN CONFIGURATION**
**Connector Configuration Pinout**

Pin	Signal	Pin	Signal
A	GND	B	M/S # 1
C	M/S #2	D	GND
1	-RESET	2	GND
3	D7	4	D8
5	D6	6	D9
7	D5	8	D10
9	D4	10	D11
11	D3	12	D12
13	D2	14	D13
15	D1	16	D14
17	D0	18	D15
19	GND	20	[KEY]
21	DMARQ	22	GND
23	-IOWR	24	GND
25	-IORD	26	GND
27	IORDY	28	CSEL
29	-DMACK	30	GND
31	INTRQ	32	-IOCS16
33	A1	34	-PDIAG
35	A0	36	A2
37	-CS0	38	-CS1
39	-DASP	40	GND
41	+5V	42	+5V
43	GND	44	N/C

Table 1: 44-Pin IDE Connector Pinout

**I25CF 44-Pin Connector**

**I25CF Jumpers**


**Connector Configuration Descriptions**

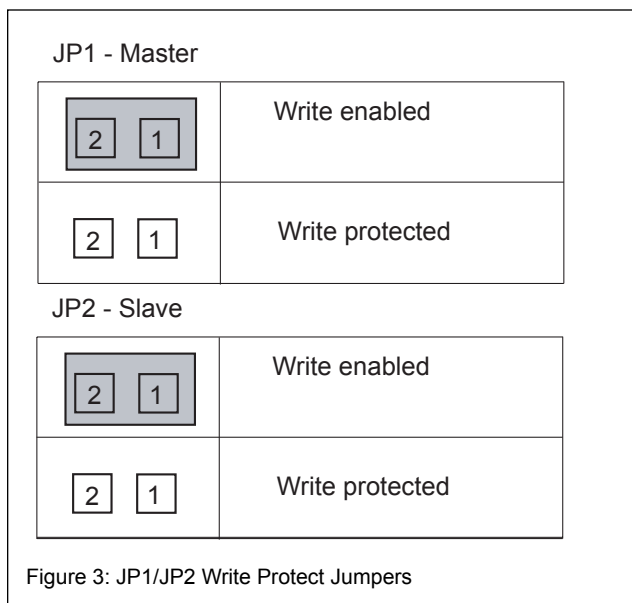
Signal Name	Dir	Pin	Description
A2-A0	I	36, 33, 35	A2-A0 are used to select the one of eight registers in the Task File
-CS0, -CS1	I	38, 37	-CS0 is the chip select for the task file registers while -CS1 is used to select the Alternate Status Register and the Device Control Register
CSEL	I	28	This internally pulled-up signal is used to configure this device as a master or a slave. When the pin is grounded, this device is configured as a Master. When the pin is open, this device is configured as a Slave
D15-D00	I/O	18, 16, 14, 12, 10, 8, 6, 4, 3, 5, 7, 9, 11, 13, 15, 17	All Task File operations occur in byte mode on the low order bus D00-D07 while all data transfers are 16 bit using D00-D15
-DASP	I/O	39	This input/output is the Disk Active/Slave Present signal in the master/slave handshake protocol.
-DMARQ	O	21	DMA transfer request
-DMACK	I	29	DMA request acknowledge
-IOWR	I	23	The I/O Write strobe pulse is used to clock I/O data on the Card Data bus into the drive controller registers when the drive is configured to use the I/O interface. The clocking will occur on the negative to positive edge of the signal (trailing edge)
-IORD	I	25	This is an I/O Read strobe generated by the host. This signal gates I/O data onto the bus from the drive
-IORDY	O	27	This output signal may be used as IORDY
-IOCS16	O	32	This output signal is asserted low when this device is expecting a word data transfer cycle
-PDIAG	I/O	34	This input/output is the pass diagnostic signal in the master/slave handshake protocol
-RESET	I	1	This input pin is the active low hardware reset from the host
GND	--	2, 19, 22, 24, 26, 30, 40, 43, A, D	Ground
Key	--	20	This pin is keyed so that the drive can only be connected with the cable pin 1 to drive pin 1
M/S # 1	--	B	Card # 1 master/slave Jumper
M/S # 2	--	C	Card # 2 master/slave Jumper
N/C	--	44	No Connect

Table 2: Signal Descriptions

## I25CF MODEL 10 OPTIONS

### Write Protect Options

The I25CF Model 10 is configured with write protect options. The I25CF write protection ensures data will not be accidentally overwritten or erased on either or both cards (depending on jumper setting). Refer to page 7 for Package Dimensions for the I25CF Model 10 and for the exact location of JP1 and JP2 on the board. JP1 always sets the write protect for the master and JP2 always sets the write protect for the slave. JP1 and JP2 are shown below. Refer to Table 4 and Figure 4 for the write protect signals on J3.



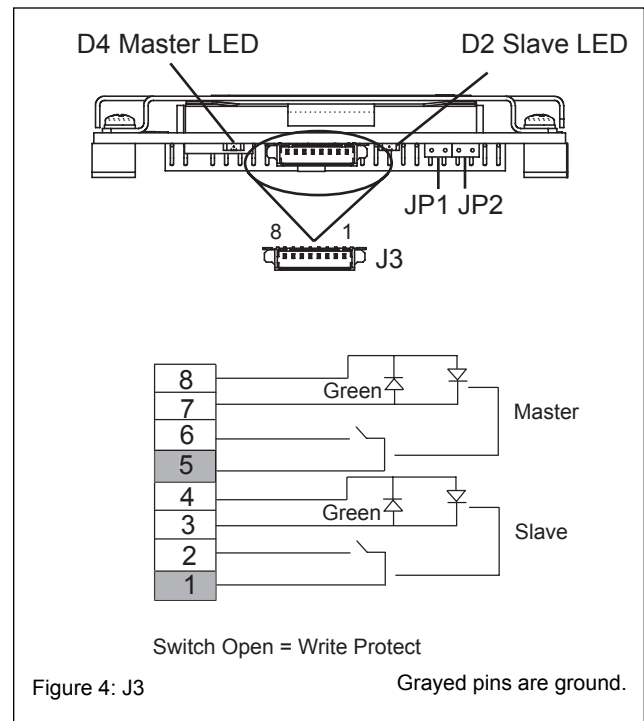
### LED Operation

The I25CF has a master LED (D4) and a slave LED (D2). Only one LED, either master or slave will be on at a time. Whichever was accessed last is indicated by the last LED ON.

LED	Description
Off	Indicates continuous Host accesses occurring
Green	Power has been applied and drive is in an idle state
Orange	Power has been applied and drive is in an idle state. Indicates that the drive is protected and a write has occurred.
Flashing LED	Indicates intermittent Host accesses occurring

Table 3: LED Indicators

### J3 Master and Slave Indicators



### J3 Signal Descriptions External

The I25CF's J3 connector is used to cable write protect jumpers to the board and control master/slave options using LED indicators.

Pin	Signal
1	Ground
2	Slave write protect
3	Slave LED power anode
4	Slave exterior LED cathode
5	Ground
6	Master write protect
7	Master LED power anode
8	Master exterior LED cathode

Table 4: J3 Signals

## I25CF CHARACTERISTICS

### Absolute Maximum Ratings

Parameter	Symbol	Value	Unit	Note
Vcc	Vcc	-0.3 to +5.5	V	
All input/output voltages	Vin, Vout	-0.3 to Vcc +0.3	V	Vin, Vout min = -2.0V for pulse widths less than 10 NS.
Storage temperature	Tstg	-50 to +90	°C	

Table 5

### Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Vcc	Vcc	4.75	5.25	5.5	V
Industrial operating temperature	Ta	-40	--	85	°C

Table 6

### Power Requirements

Parameter	Value (Model 01)	Value (Model 10)	Unit
Power <sup>1</sup>	175 (maximum)	200 (maximum)	mA

Table 7

Note 1: With two typical CF cards

### Physical Characteristics

Parameter	Value
Height	12.7mm [.500"]
Width	69.9mm [2.750"]
Length	101.6mm [4.00"]
Weight	Based on capacity

Table 8

### Capacitance<sup>2</sup>

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Input Capacitance	Cin	--	--	15	pF	(Vin = 0V)
Output Capacitance	Cout	--	--	15	pF	(Vout = 0V)

Table 9

Note 2: (Ta + 25°C, f + 1MHZ)

**PACKAGE DIMENSIONS**
**I25CF Model 01**

Refer to the figure below for enclosures and mounting dimensions of the I25CF Model 01 2.5" CompactFlash adapter. Dimensions shown in mm[inches].

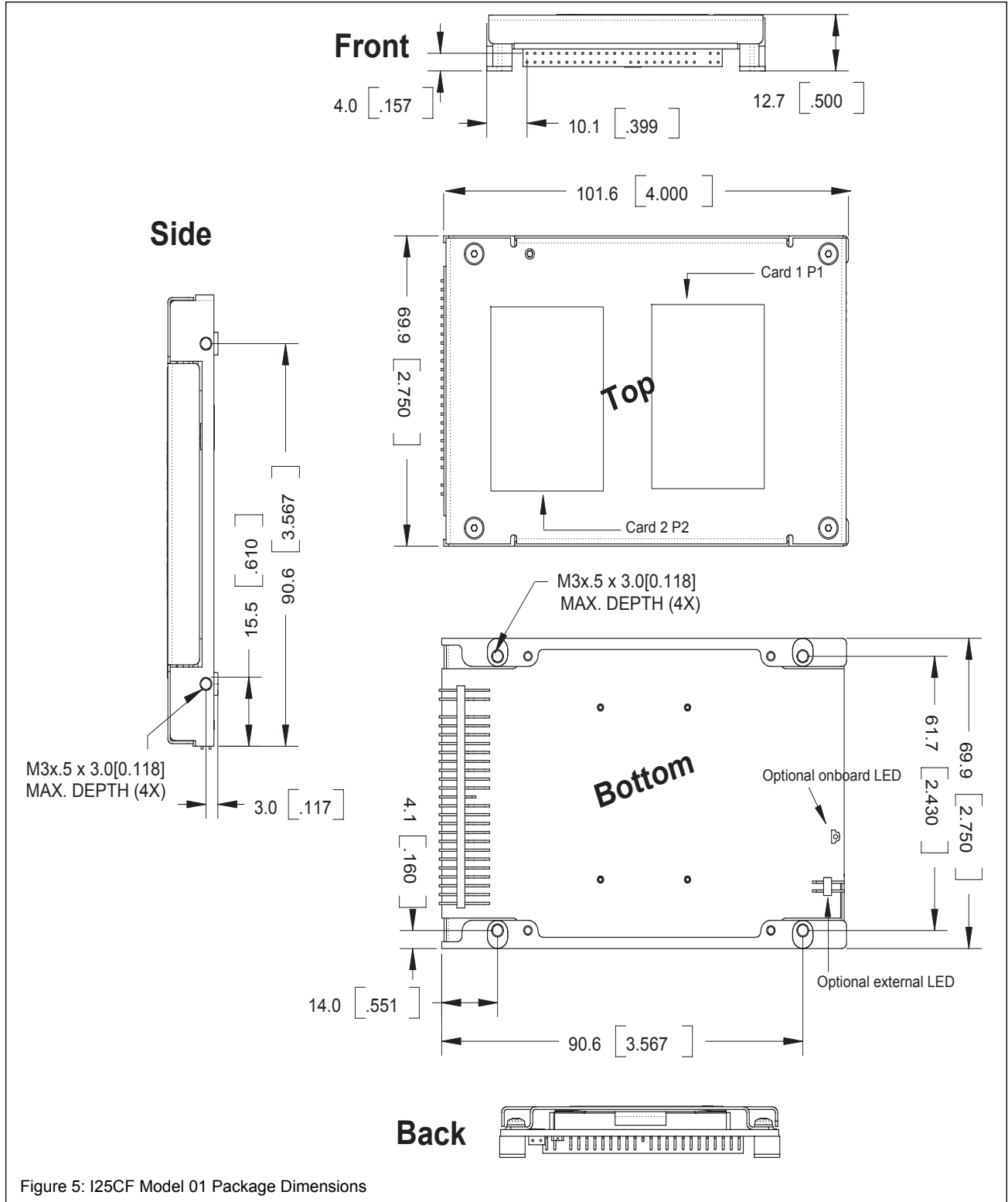


Figure 5: I25CF Model 01 Package Dimensions

**I25CF Model 10**

Refer to the figure below for enclosures and mounting dimensions of the I25CF Model 10 2.5" CompactFlash adapter. Dimensions shown in mm[inches].

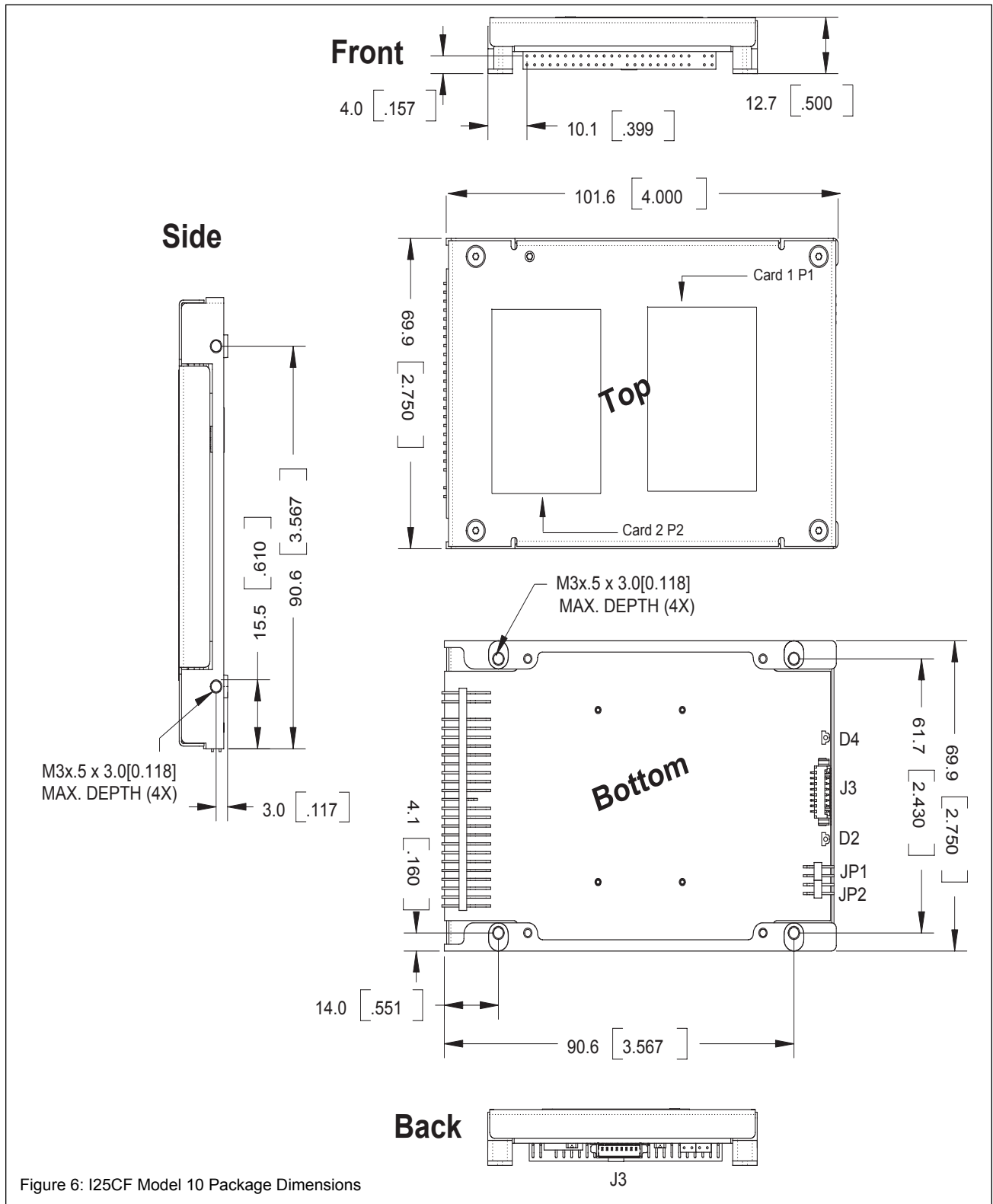


Figure 6: I25CF Model 10 Package Dimensions

**ORDERING INFORMATION**

I25CF - M0SX | ZZ

**Configuration**

01 - Standard Model  
10 - Write Protect Model

**Industrial Temperature**

-40 to +85°C

**M0SX = 0 capacity 1 socket**

**M0S0 = 0 capacity 2 socket**

**Interface - Form Factor**

IDE - 2.5" - CompactFlash adapter

**Adtron Corporation**

**www.adtron.com**

**Made in the USA**

4415 E. Cotton Center Blvd., Suite 100

Phoenix, AZ 85040

Tel: (602) 735-0300 • Fax: (602) 735-0359

Email: [info@adtron.com](mailto:info@adtron.com)

Trademarks are the property of their respective owners.

The information contained in this document is subject to change without notice and does not represent or imply warranty, and no liability is assumed by Adtron Corp.