Features

- Output voltage levels are compatible with input levels of K-MOS, N-MOS and TTL integrated circuits
- Supply voltage : 5V
- Low input current: 1.0μA; 0.1μA at T_A= 25℃
- Output current 24mA
- Latching current not less than 450mA at T_A= 25℃
- Enhanced ESD Specifications:

  ±15kV IEC61000-4-2 Air Discharge

  ±8kV IEC61000-4-2 Contact Discharge

General Description

CBM232 is purposed for application in high-performance information processing systems and control devices of wide application.

Applications

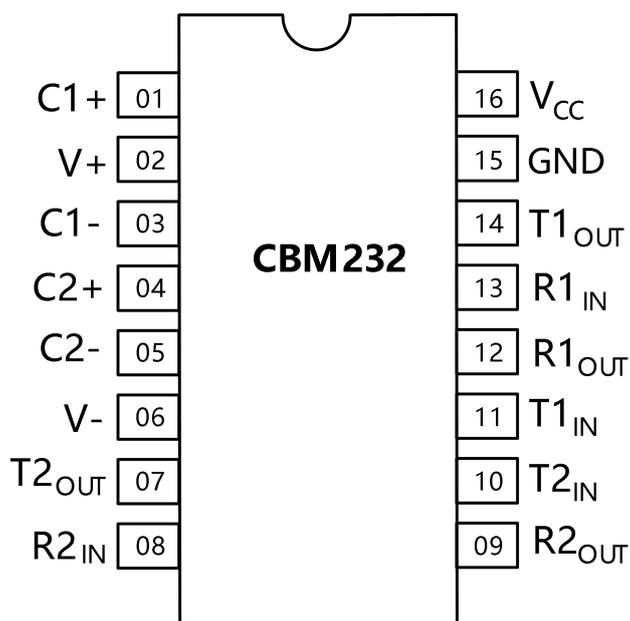- Computers
- Peripherals
- Modems
- Printers
- Instruments

CATALOG

Revision History

Version	Revision date	Change content	Reason for Change	Modified by	Reviewed By	Note
V1.0				WW	LYL	
V1.1	2026.3.9	Update SOP16 package drawing for incorrect marking.		WW	LYL	

Pin symbols in package

```
         ┌───────⌣───────┐
C1+  │01│              │16│  V_CC
V+   │02│              │15│  GND
C1-  │03│              │14│  T1_OUT
C2+  │04│   CBM232     │13│  R1_IN
C2-  │05│              │12│  R1_OUT
V-   │06│              │11│  T1_IN
T2_OUT│07│             │10│  T2_IN
R2_IN│08│              │09│  R2_OUT
         └──────────────┘
```

Inputs	Outputs
R_{IN}, T_{IN}	R_{OVT}, T_{OVT}
H	L
L	H
Note: H – voltage high level; L – low voltage level	

Table of pin description

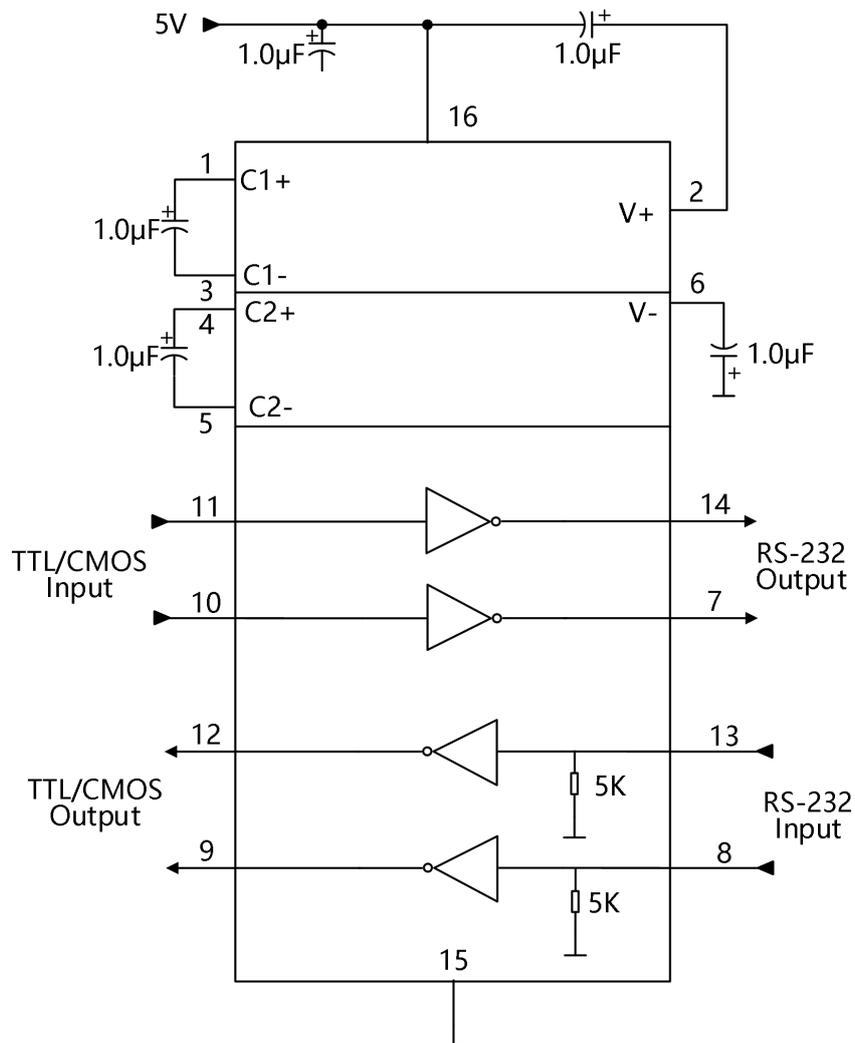| Pin No.	Symbol	Pin name
01	C_1+	Output of external capacitance of positive voltage multiplier unit
02	V+	Output of positive voltage of multiplier unit
03	C_1-	Output of external capacitance of positive voltage multiplier unit
04	C_2+	Output of external capacitance of negative voltage multiplier unit
05	C_2-	Output of external capacitance of negative voltage multiplier unit
06	V-	Output of negative voltage of multiplier unit
07	$T2_{OUT}$	Output of transmitter data (levels RS– 232)
08	$R2_{IN}$	Input of receiver data (levels RS – 232)
09	$R2_{OUT}$	Output of receiver data (levels TTL/KMOS)
10	$T2_{IN}$	Input of transmitter data (levels TTL/KMOS)
11	$T1_{IN}$	Input of transmitter data (levels TTL/KMOS)
12	$R1_{OUT}$	Output of receiver data (levels TTL/KMOS)
13	$R1_{IN}$	Input of receiver data (levels RS – 232)
14	$T1_{OUT}$	Output of transmitter data (levels RS – 232)
15	GND	Common output
16	V_{CC}	Supply output of voltage source

Absolute Maximum Ratings

Symbol	Parameter	Rate		Unit
		Min	Max	
V_{CC}	Supply voltage	-0.3	6.0	V
V+	Transmitter high output voltage	VCC -0.3	14	
V-	Transmitter low output voltage	-0.3	-14	
V_{TIN}	Transmitter input voltage	-0.3	V+ +0.3	
V_{RIN}	Receiver input voltage	-30	30	
P_D	Dissipated power DIP – package SO – package	-	842	mW
			762	
I_{SC}	Output current of transmitter short circuit	-	Continu-ously	mA
T_S	Storage temperature	-60	150	℃

* Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied.

Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

Recommended Operating Conditions

Symbol	Parameter	Rate		Unit
		Min	Max	
V_{CC}	Supply voltage	4.5	5.5	V
V+	Transmitter output high voltage	5.0	-	
V-	Transmitter output low voltage	-5.0	-	
V_{TIN}	Transmitter input voltage	0	VCC	
V_{RIN}	Receiver input voltage	-30	30	
I_{SC}	Transmitter short circuit output current	-	±60	mA
T_A	Ambient temperature	-40	125	℃

Static parameters

Symbol	Parameter	Test conditions	Rate				Unit
			25℃		-40℃ to 125℃		
			Min	Max	Min	Max	
I_{CC}	Consumption current static	V_{CC} =5.0 V V_{IL} = 0 V	-	10.0	-	14.0*	mA
Receiver electrical parameters							
V_H	Hysteresis voltage	V_{CC} =5.0 V	0.2	0.9	0.2	1.0	V
V_{ON}	On (operation) voltage	V_O≤0.1 V I_{OL}≤20uA	-	2.4	-	2.3	
V_{OFF}	Off (dropout) voltage	V_O≥V_{CC} -0.1 V I_{OH}≤-20uA	0.8	-	0.9	-	
V_{OL}	Output low voltage	I_{OL} = 3.2mA V_{CC} = 4.5 V V_{IH} = 2.4 V	-	0.3	0.4		
V_{OH}	Output high voltage	I_{OH} = -1.0 mA V_{CC} = 4.5 V V_{IL} = 0.8 V	3.6	-	3.5	-	
R_I	Input resistance	V_{CC} = 5.0 V	3.0	7.0	3.0	7.0	kOhm
Transmitter electrical parameters							
V_{OL}	Output low voltage	V_{CC} = 4.5V V_{IH} = 2.0V R_L = 3.0kOhm	-	-5.2	-	5.0	V
V_{OH}	Output high voltage	V_{CC} = 4.5V V_{IL} = 0.8V RL = 3.0kOhm	5.2	-	5.0	-	
I_{IL}	Input low current	V_{CC} =5.5V V_{IL} = 0V	-	-1.0	-	-10.0	uA
I_{IH}	Input high current	V_{CC} =5.5V V_{IH} = V_{CC}	-	1.0	-	10.0	
SR	Speed of output front change	V_{CC} =5.0V C_L=50 - 1000pF R_L=3.0-7.0kOhm	3.0	30	2.7	27	V/μs
R_O	Output resistance	V_{CC}=V+=V-=0V V_O=2V	350	-	300	-	Ohm
I_{SC}	Short circuit output current	V_{CC} =5.5 V					mA

		V_O = 0 V					
		V_I = V_CC		-50		-60	
		V_I = 0 V		50		60	
ST	Speed of information transmission	V_{CC} =4.5 V C_L = 1000 pF R_L = 3.0kOhm T_W = 7us (for extreme -T_W = 8us)	140	-	120	-	kbps
Dynamic parameters							
T_{PHLR} (T_{PLHR})	Signal propagation delay time when switching on (off)	V_{CC} = 4.5V C_L = 150pF V_{IL} = 0V V_{IH} = 3.0V T_{LH} = T_{HL}≤10 ns	-	9.7	-	10	
T_{PHLT} (T_{PLHT})	Signal propagation delay time when switching on (off)	V_{CC} = 4.5V C_L = 2500pF V_{IL} = 0V V_{IH} = 3.0 V R_L = 3kOhm T_{LH} =T_{HL}≤10 ns	-	5.0*		6.0*	us

Capacitance

Symbol	Parameter	V_CC,	Rate	Unit
C_{IN}	Input capacitance	5.0	9.0	pF
C_{PD}	Dynamic capacitance		90	

Timing diagram when measuring IC dynamic parameters

Tin

t_{SLH} t_{SHL}

+3V   +3V

Tout

-3V   -3V

t_W t_W

T_{IN}

t_W t_W

T_{OUT}

Control
strobe
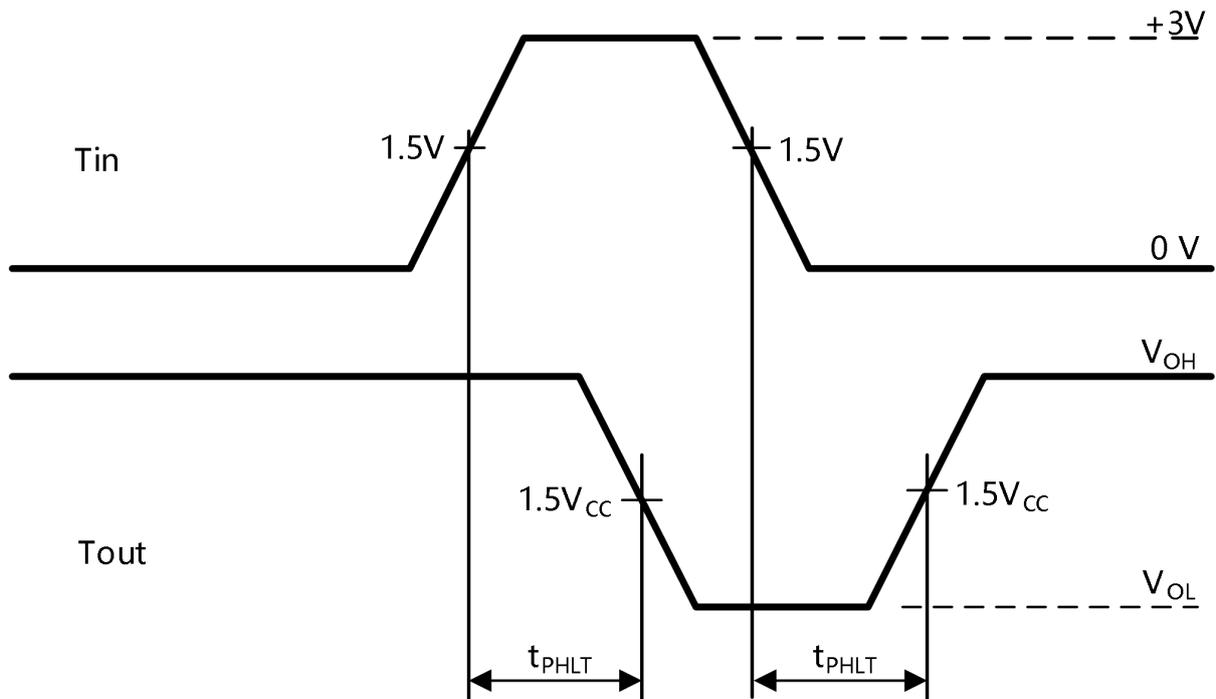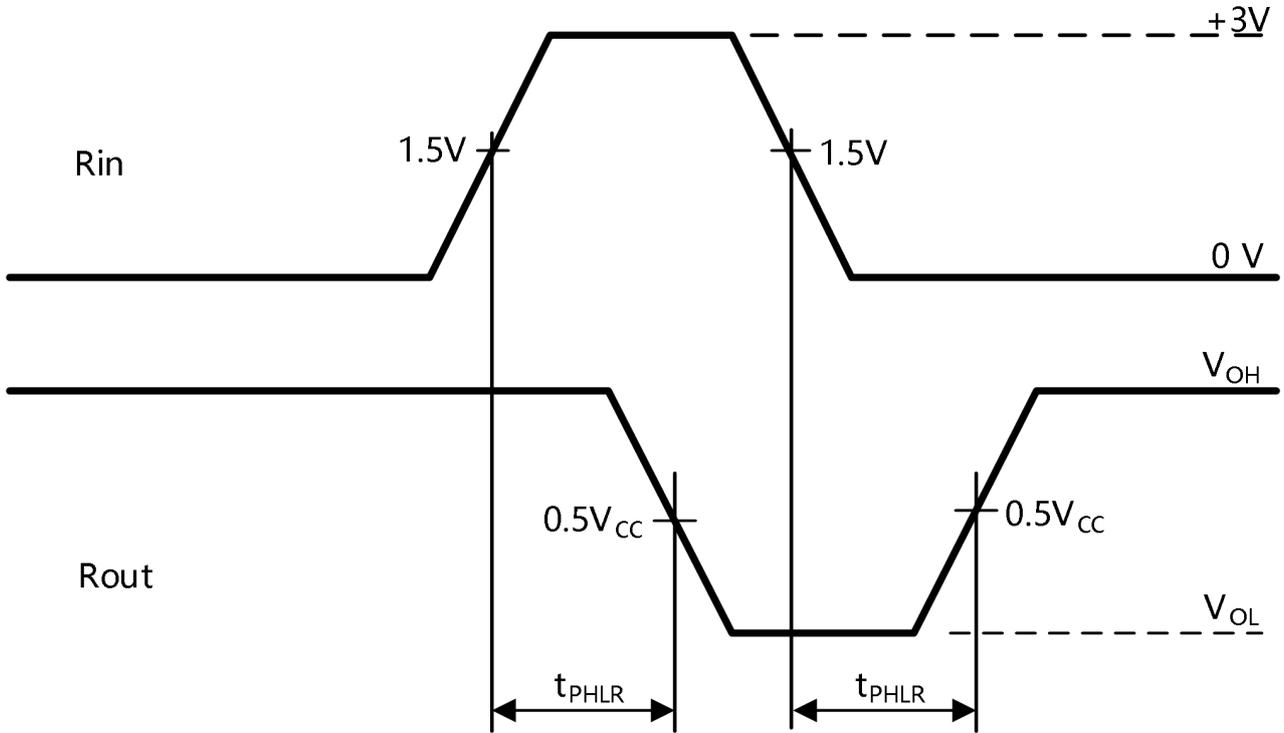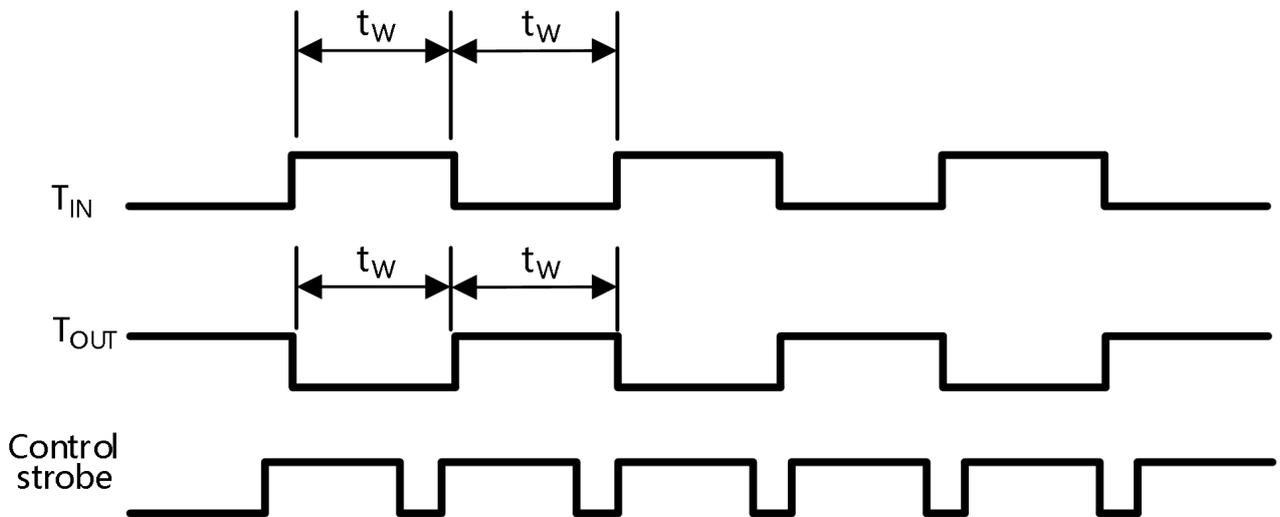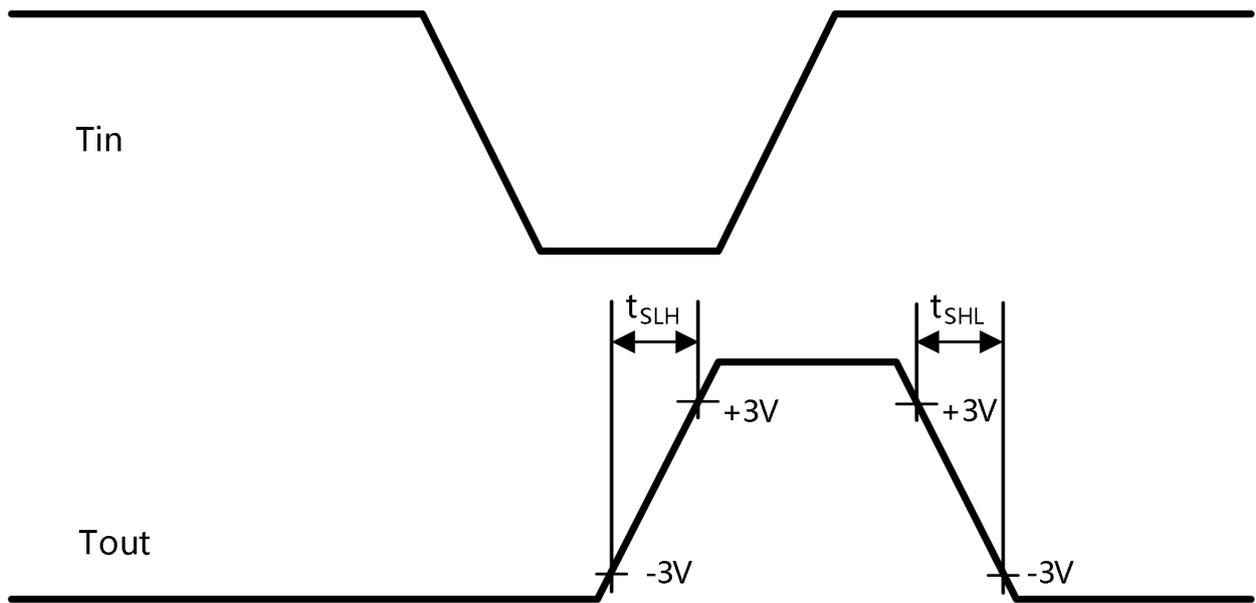
Package Outline Dimensions

SOP-16
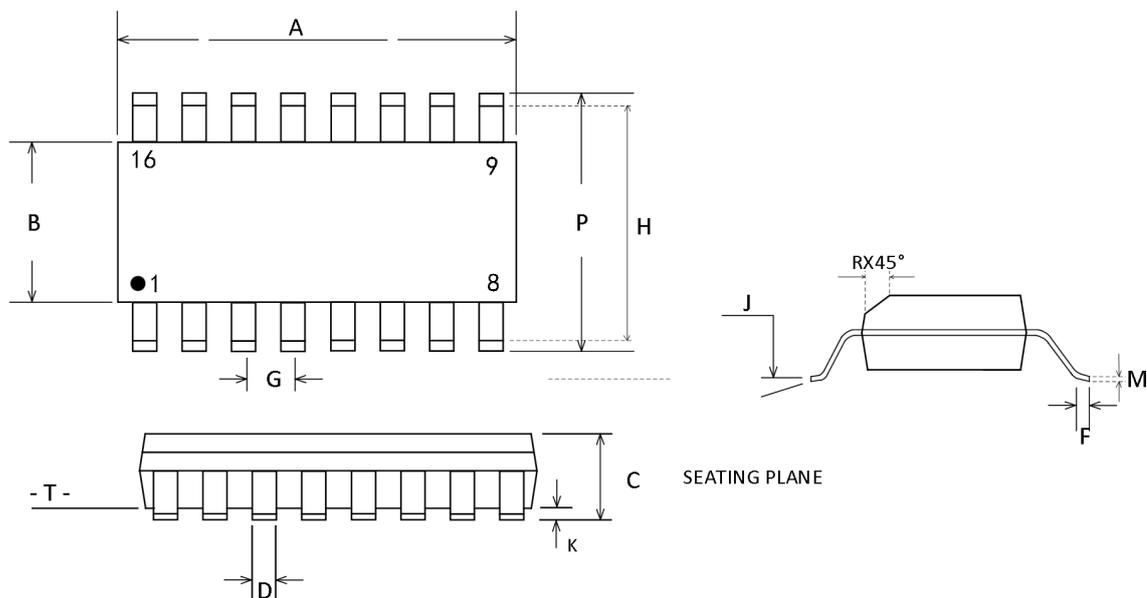
NOTES: 1. Dimensions A and B do not include mold flash or protrusion.

2. Maximum mold flash or protrusion 0.15 mm (0.006) per side for A; for B － 0.25 mm (0.010) per side.

Symbol	Dimensions ,mm	
	Min	Max
A	9.8	10
B	3.8	4
C	1.35	1.75
D	0.33	0.51
F	0.4	1.27
G	1.27	
H	5.72	
J	0°	8°
K	0.1	0.25
M	0.19	0.25
P	5.8	6.2
R	0.25	0.5

Package/Ordering Information

PRODUCT TYPE	OPERATING TEMPERTURE	PACKAGE	PACKAGE MARKING	NUMBER OF PACKAGES
CBM232AS16	-40℃~125℃	SOP-16	CBM232AS	Tape and Reel, 2500
CBM232AS16-RL	-40℃~125℃	SOP-16	CBM232AS	Tape and Reel, 3000
CBM232AS16-REEL	-40℃~125℃	SOP-16	CBM232AS	Tape and Reel, 4000