

EVVOSEMI[®]

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

Product Specification

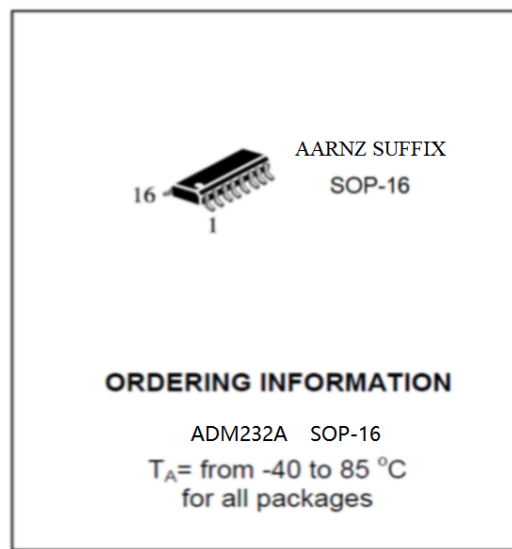
▶ Domestic	Part Number	ADM232AARNZ
▶ Overseas	Part Number	ADM232AARNZ
▶ Equivalent	Part Number	ADM232AARNZ

EV is the abbreviation of name EVVO

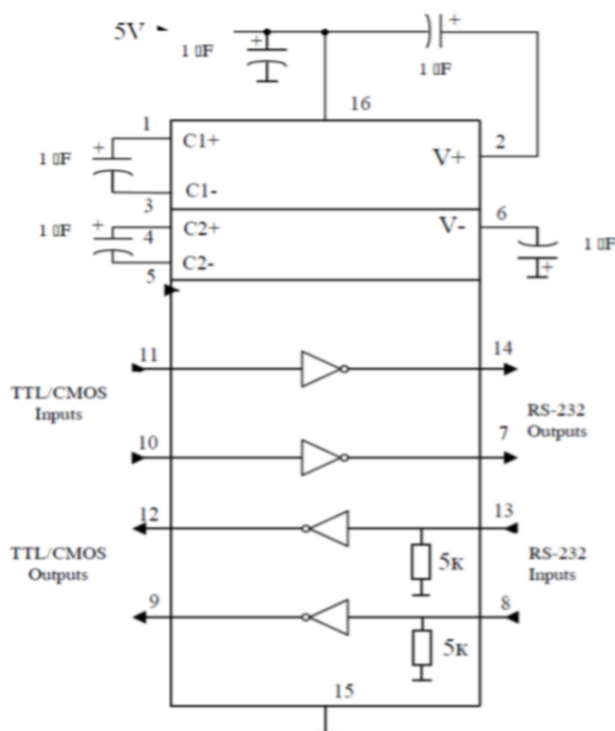
+5 V-Powered, Multi-Channel RS-232 Drivers/Receivers

The ADM232A have two drives and two receivers. The drivers and receivers meet all EIA/TIA-232E and CCITT V.28 specifications at data rates up to 120 kbps when loaded in accordance with the EIA/TIA-232E specification

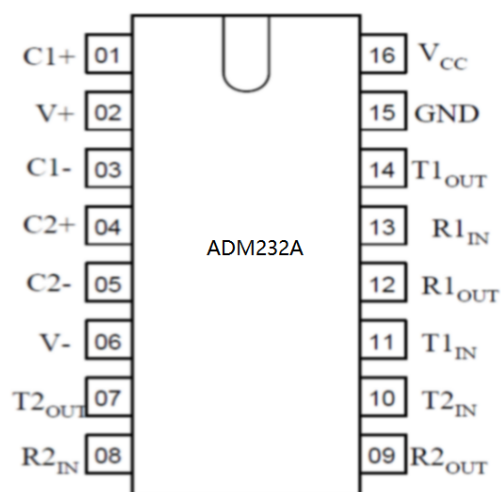
- Operate from Single +5 V Power Supply;
- Guaranteed 120 kbps Data Rate;
- Latchup Free;
- ESD Protection $\pm 2\text{kV}$



Typical Operating Circuit



Pin configuration



+5 V-Powered, Multi-Channel RS-232 Drivers/Receivers

Pin descriptions

Pin No	Symbol	Function
01	C1+	Terminal for positive charge-pump capacitor
02	V+	+2 V _{CC} voltage generated by the charge-pump
03	C1-	Terminal for positive charge-pump capacitor
04	C2+	Terminal for negative charge-pump capacitor
05	C2-	Terminal for negative charge-pump capacitor
06	V-	-2 V _{CC} voltage generated by the charge-pump
07	T2 _{OUT}	RS – 232 Driver Output
08	R2 _{IN}	RS – 232 Receiver Input
09	R2 _{OUT}	RS – 232 Receiver Output
10	T2 _{IN}	RS – 232 Driver Input
11	T1 _{IN}	RS – 232 Driver Input
12	R1 _{OUT}	RS – 232 Receiver Output
13	R1 _{IN}	RS – 232 Receiver Input
14	T1 _{OUT}	RS – 232 Driver Output
15	GND	Ground
16	V _{CC}	+ 4.5 V to 5.5 V Supply Voltage Input

Absolute maximum conditions

Symbol	Parameter	Rate		Unit
		min	max	
V _{CC}	Supply voltage	-0.3	6.0	V
V+	Transmitter high output voltage	V _{CC} – 0.3	14	
V-	Transmitter low output voltage	-14	+0.3	
V _{TIN}	Transmitter input voltage	-0.3	V _{CC} +0.3	
V _{RIN}	Receiver input voltage	-30	30	
V _{T OUT}	Output voltages (transmitters)	V ₋ -0.3	V ₊ +0.3	V
V _{R OUT}	Output voltages (receivers)	-0.3	V _{CC} +0.3	
P _D	Power dissipation DIP – package (derate 10.53 mW/°C above 70 °C) SO – package (derate 9.52 mW/°C above 70 °C)	-	842 762	mW
I _{SC}	Short-Circuit Duration (T _{out})	-	Continu- ous	
T _{stg}	Storage temperature	-60	150	°C
T _A	Operating voltage range	-40	85	°C

+5 V-Powered, Multi-Channel RS-232 Drivers/Receivers

ELECTRICAL CHARACTERISTICS

($V_{CC} = 4.5V$ to $5.5V$, $C1-C4 = 1\mu F$; $T_A = -40$ to $+85^\circ C$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Max	Units
DC CHARACTERISTICS					
V_{CC}	Operating Voltage Range	$V_{IL}=0V$	4.5	5.5	V
I_{CC}	V_{CC} Supply Current	No load, $T_A = 25^\circ C$		10.0	mA
LOGIC					
I_I	Input Leakage Current	$T_{IN} = 0V$ to V_{CC}	0.2	± 10	μA
V_{IL}	Input Threshold Low	T_{IN}		0.8	V
V_{IH}	Input Threshold High	T_{IN}	2.0		V
V_{OL}	Output Voltage Low	R_{OUT} ; $I_{OUT} = 3.2mA$		0.4	V
V_{OH}	Output Voltage High	R_{OUT} ; $I_{OUT} = -1.0mA$	3.5		V
RECEIVER INPUTS					
V_{RIN}	Input Voltage Range	All parts, normal operation	-30	+30	V
V_{ff}	Input Threshold Low	$T_A = +25^\circ C$, $V_{CC}=5V$	0.8		V
I_{on}	Input Threshold High	$T_A = +25^\circ C$, $V_{CC}=5V$	-	2.4	V
V_h	Input Hysteresis	$V_{CC} = 5V$	0.2	1.0	V
R_I	Input Resistance	$T_A = +25^\circ C$, $V_{CC}=5V$	3	7	k Ω
TRANSMITTER OUTPUTS					
ΔV_O	Output Voltage Swing	All driver inputs loaded with $3k\Omega$ to ground	± 5.0		V
R_O	Output resistance	$V_{CC}=V+=V-=0V$; $V_{OUT}=\pm 2V$	300		Ω
I_{SC}	Output Short-Circuit Current			± 60	mA
TIMING CHARACTERISTICS					
ST	Maximum Data Rate	$R_L=3.0k\Omega$ to $7k\Omega$, $C_L=50pF$ to $1000pF$, one transmitter switching	120		kbps
t_{PLHR} , t_{PHLR}	Receiver Propagation Delay	$C_L = 150pF$ All parts, normal operation (Fig. 1)		10	μS
t_{PLHT} , t_{PHLT}	Transmitter Propagation Delay	$R_L=3.0k\Omega$, $C_L=2500pF$, all transmitters loaded (Fig. 2)		6.0	μS
SR	Transition-Region Slew Rate	$T_A = 25^\circ C$, $V_{CC} = 5V$, $R_L=3.0k\Omega$ to $7k\Omega$, $C_L=50pF$ to $2500pF$, measured from $-3V$ to $+3V$ or $+3V$ to $-3V$ (Fig. 3)	3	30	V/ μS

+5 V-Powered, Multi-Channel RS-232 Drivers/Receivers

Timing diagram

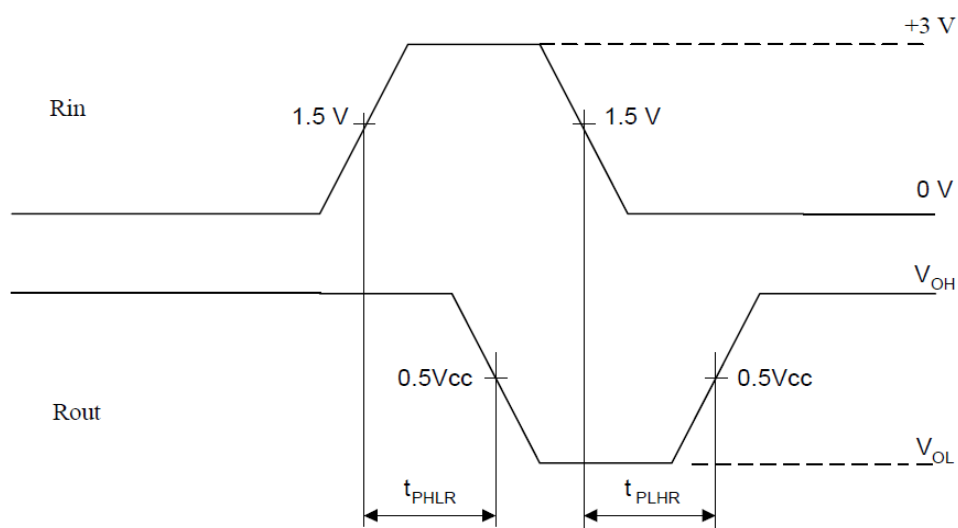


Figure 1

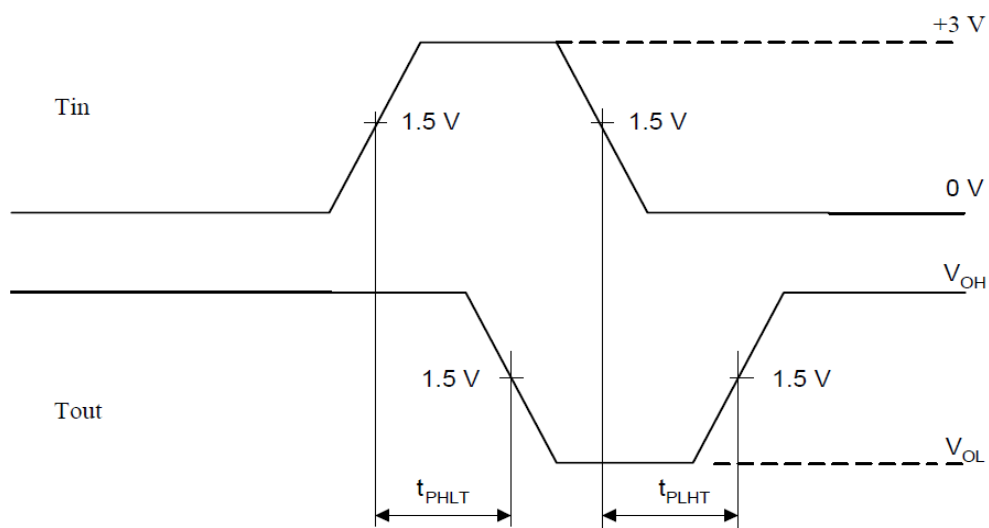


Figure 2

+5 V-Powered, Multi-Channel RS-232 Drivers/Receivers

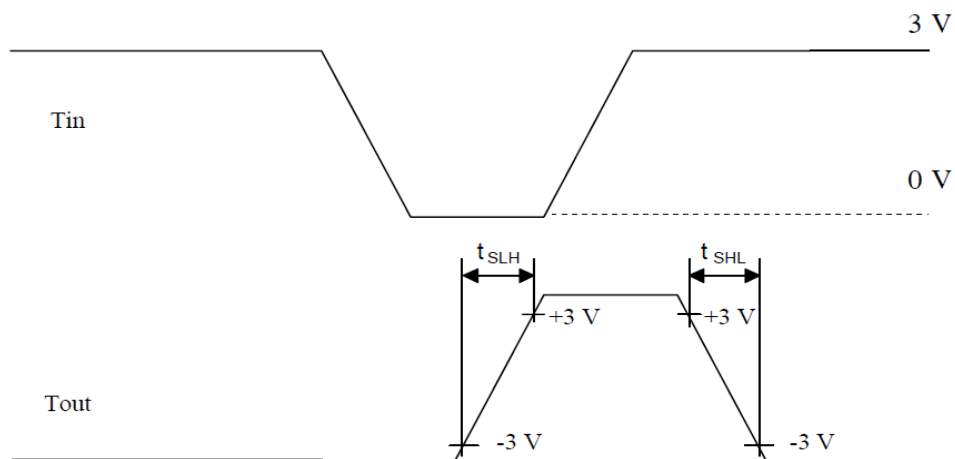


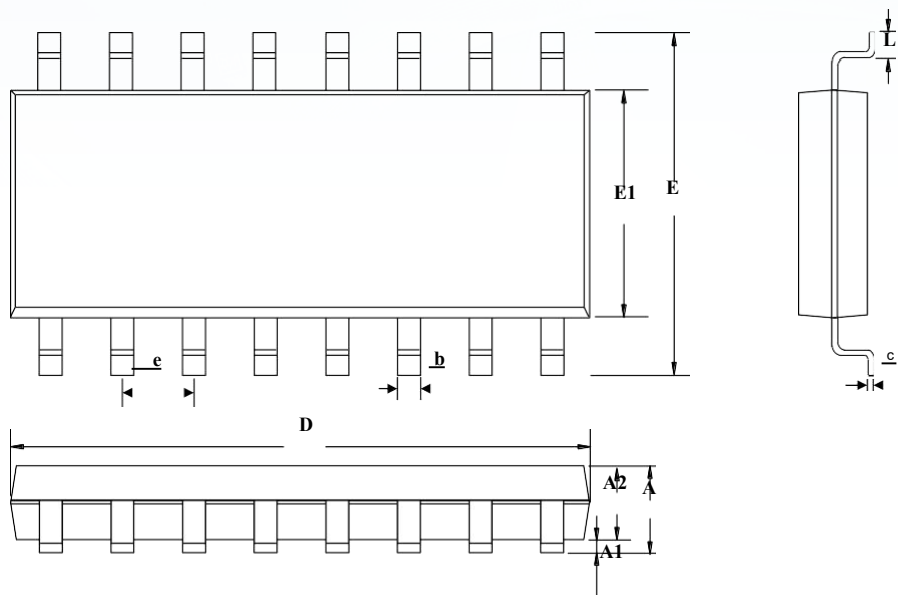
Figure 3

+5 V-Powered, Multi-Channel RS-232 Drivers/Receivers

PACKAGE OUTLINE

SOP-16

UNIT: mm



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	—	—	1.80
A1	0.10	0.15	0.25
A2	1.25	1.45	1.65
b	0.33	—	0.51
c	0.17	—	0.25
D	9.50	—	10.20
E	5.80	6.00	6.20
E1	3.70	—	4.10
e	1.27BSC		
L	0.45	0.60	0.80

Ordering information

Order code	Package	Baseqty	Delivery mode	Operating temperature range
ADM232AARNZ	SOP-16	2500	Tape and reel	-40° - +85°

Disclaimer

EVVOSEMI ("EVVO") reserves the right to make corrections, enhancements, improvements, and other changes to its products and services at any time, and to discontinue any product or service without notice.

EVVO warrants the performance of its hardware products to the specifications applicable at the time of sale in accordance with its standard warranty. Testing and other quality control techniques are used as deemed necessary by EVVO to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

Customers should obtain and confirm the latest product information and specifications before final design, purchase, or use. EVVO makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose, nor does EVVO assume any liability for application assistance or customer product design. EVVO does not warrant or accept any liability for products that are purchased or used for any unintended or unauthorized application.

EVVO products are not authorized for use as critical components in life support devices or systems without the express written approval of EVVOSEMI.

The EVVO logo and EVVOSEMI are trademarks of EVVOSEMI or its subsidiaries in relevant jurisdictions. EVVO reserves the right to make changes without further notice to any products herein.