

IN75232

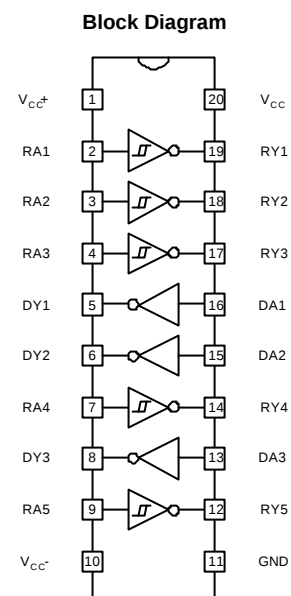
EIA-232-D INTERFACE 1 CHIP IC

DESCRIPTION

The IN75232 is monolithic device containing 3 independent drivers and 5 receivers. It is designed to interphase between data terminal equipment and data communication equipment by EIA-232-D.

FEATURES

- Meets standard EIA-232-D (Revision of RS-232-C)
- Drivers
 - Current Limited Output 10 mA Typical
 - Power-off Output Impedance 300Ω Min
 - Slew Rate Control by Load Capacitor
 - Flexible Supply Voltage Range
 - Input Compatible with Most TTL and DTL Circuits
- Receiver
 - Input Resistance 3 kΩ to 7 kΩ
 - Input Signal Range ±30 V
 - Built-in Input Hysteresis (Double Threshold)
- 20 DIP/SOP



PIN DESCRIPTION

Name	Pin No	Function	Name	Pin No	Function
Vcc+	1	Driver Section Supply	Vcc-	10	Driver Section Supply —
DA1	16	Driver Input	DY1	5	Driver Output
DA2	15		DY2	6	
DA3	13		DY3	8	
Vcc	20	Receiver Section Supply	GND	11	Ground
RA1	2	Receiver Input	RY1	19	Receiver Output
RA2	3		RY2	18	
RA3	4		RY3	17	
RA4	7		RY4	14	
RA5	9		RY5	12	



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BELMICROSYSTEMS

IN75232

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Rating	Unit
V _{CC+}	Supply Voltage	15	V
V _{CC-}	Supply Voltage	-15	V
V _{CC}	Supply Voltage	10	V
V _I (Driver)	Input Voltage	-15...+7	V
V _I (Receiver)	Input Voltage	±30	V
V _O (Driver)	Output Voltage	-15...+15	V
P _T	Continuous Power Dissipation (Below 25°C)	1.0	W
T _{STG}	Storage Temperature	-65...+175	°C
T _{OP}	Operating Temperature	0...+75	°C

ELECTRICAL CHARACTERISTICS

Supply Current

Supply Current

Symbol	Parameter	Test Condition		Min	Typ	Max	Unit
1	2	3		4	5	6	7
Icc+	Supply Current from Vcc+	Vcc+=9V	Vin=1.9V		11.3	15	mA
		No Load	Vin=0.8V		3.4	4.5	
		Vcc+=12V	Vin=1.9V		14.3	19	
		No Load	Vin=0.8V		4.1	5.5	
		Vcc+=15V	Vin=1.9V			25	
		No Load	Vin=0.8V			9	
Icc-	Supply Current from Vcc-	Vcc+=-9V	Vin=1.9V		-12	-15	mA
		No Load	Vin=0.8V			-3.2	
		Vcc+=-12V	Vin=1.9V		-16	-19	
		No Load	Vin=0.8V			-3.2	
		Vcc+=-15V	Vin=1.9V			-25	
		No Load	Vin=0.8V			-3.2	
Icc	Supply Current from Vcc	Vcc=5V	Vin=5V		20	30	mA

Driver Section

V _{OH}	High Level Output Voltage	V _{IL} =0.8V R _L =3 kΩ	V _{CC+} =+9V V _{CC-} =-9V	6	7		V
			V _{CC+} =+13.2V V _{CC-} =-13.2V	9	10.5		
V _{OL}	Low Level Output Voltage	V _{IL} =1.9V R _L =3 kΩ	V _{CC+} =+9 V V _{CC-} =-9V			-6	V
			V _{CC+} =+13.2V V _{CC-} =-13.2V			-9	
I _{IH}	High Level Input Current	V _I =5V				10	μA
I _{IL}	Low Level Input Current	V _I =0			-1	-1.6	mA
I _{OS(H)}	Short Circuit Output Current at High Level	V _I =0.8V V _O =0		-6	-10	-12	mA



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ELECTRICAL CHARACTERISTICS

Supply Current

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
1	2	3	4	5	6	7
$I_{OS}(L)$	Short Circuit Output Current at Low Level	$V_I=1.9V$ $V_O=0$	6	10	12	mA
R_O	Output Resistance, Power Off	$V_{CC+}=0, V_{CC-}=0$ $V_O=-2V$ to $2V$	300			Ω

Driver Switching Characteristics ($V_{CC+}=9V, V_{CC-}=-9V, T_A=25^{\circ}C$)

t_{PLH}	Propogation Delay Time, Low-To-High Level Output	$R_L=3\text{ k}\Omega$ $C_L=15\text{ pF}$		400	500	ns
t_{PHL}	Propogation Time, High -To- Low Level Output			100	175	ns
t_{THL}	Transition Delay Time, Low-To-High Level Output			55	100	ns
t_{TLH}	Transition Delay Time, High-To-Low Level Output			45	75	ns

Receiver Section

V_{OH}	High Level Output Voltage	$V_I=0.75V, I_{OL}=-0,5\text{ mA}$	2.6	4	5	V
		Input Open, $I_{OL}=-0,5\text{ mA}$	2.6	4	5	
V_{OL}	Low Level Output Voltage	$V_I=3V, I_{OL}=10\text{ mA}$		0.2	0,45	V
I_{IH}	High-Level Input Current	$V_I=25V$	3.6		8.3	V
		$V_I=3V$	0.43			
I_{IL}	Low-Level Input Current	$V_I=-25V$	-3.6		-8.3	mA
		$V_I=-3V$	-0.43			
V_{T+}	Positive-Going Thrteshold Voltage		1.75	1.9	2.25	mA
V_{T-}	Negative-Going Thrteshold Voltage		0.75	0.97	1.25	V

Receiver Switching Characteristics

$V_{CC}=5V$

t_{PLH}	Propogation Delay Time, Low-To-High Level Output	$C_L=15\text{ pF}$ $R_L=3.9\text{ k}\Omega$		100	150	ns
t_{PHL}	Propogation Time, High -To- Low Level Output	$C_L=15\text{ iO}$ $R_L=390\text{ k}\Omega$		25	50	ns
t_{THL}	Transition Delay Time, Low-To-High Level Output	$C_L=15\text{ pF}$ $R_L=3.9\text{ k}\Omega$		120	175	ns
t_{TLH}	Transition Delay Time, High-To-Low Level Output	$C_L=15\text{ pF}$ $R_L=390\text{ k}\Omega$		10	20	ns



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