# IN75232

EIA-232-D INTERFACE 1 CHIP IC

DESCRIPTION

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

FEATURES

Block Diagram

- 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
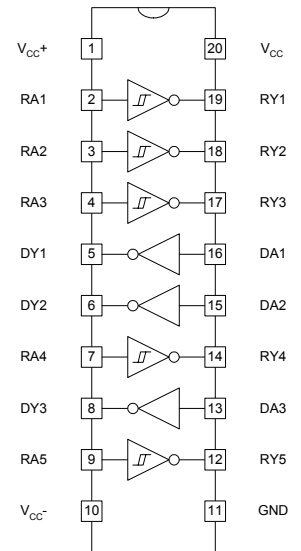
PIN DESCRIPTION

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

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ABSOLUTE MAXIMUM RATINGS

Symbol	Parametr	Rating	Unit
Vcc+	Supply Voltage	15	V
Vcc-	Supply Voltage	-15	V
Vcc	Supply Voltage	10	V
VI (Driver)	Input Voltage	-15...+7	V
VI (Receiver)	Input Voltage	±30	V
VO (Driver)	Output Voltage	-15...+15	V
PT	Continuous Power Dissipation (Below 25°C)	1.0	W
T_{STG}	Storage Tempetatura	-65...+175	^{o}C
T_{OP}	Operating Tempetatura	0...+75	^{o}C

ELECTRICAL CHARACTERISTICS

Supply Current

Symbol	Parameter	Test Condition		Min	Typ	Max	Unit
1	2	3		4	5	6	7
Icc+	Supply Current from Vcc+	Vcc+=9V No Load	Vin=1.9V		11.3	15	mA
			Vin=0.8V		3.4	4.5	
		Vcc+=12V No Load	Vin=1.9V		14.3	19	
			Vin=0.8V		4.1	5.5	
		Vcc+=15V No Load	Vin=1.9V			25	
			Vin=0.8V			9	
Icc-	Supply Current from Vcc-	Vcc+=-9V No Load	Vin=1.9V		-12	-15	mA
			Vin=0.8V			-3.2	
		Vcc+=-12V No Load	Vin=1.9V		-16	-19	
			Vin=0.8V			-3.2	
		Vcc+=-15V No Load	Vin=1.9V			-25	
			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	Vcc+=9V Vcc-=-9V	6	7		V
			Vcc+=13.2V Vcc-=-13.2V	9	10.5		
V_{OL}	Low Level Output Voltage	V_{IL}=1.9V R_L=3 kΩ	Vcc+=9 V Vcc-=-9V			-6	V
			Vcc+=13.2V Vcc-=-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	Vcc+=0, Vcc-=0 V_O= -2V to 2V	300			Ω
Driver Switching Characteristics		(Vcc+=9V, Vcc-=-9V, T_A=25°C)				
t_{PLH}	Propogation Delay Time, Low-To-High Level Output	R_L=3 kΩ C_L=15 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	bns
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 mÀ	2.6	4	5	V
		Input Open, I_{OL}=-0,5 mÀ	2.6	4	5	
V_{OL}	Low Level Output Voltage	V_I=3V, I_{OL}=10 mÀ		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			
VT+	Positive-Going Thrteshold Voltage		1.75	1.9	2.25	mA
VT-	Negative-Going Thrteshold Voltage		0.75	0.97	1.25	V
	Receiver Switching Characteristics	Vcc=5V				
t_{PLH}	Propogation Delay Time, Low-To-High Level Output	C_L=15 pF R_L=3.9 kΩ		100	150	ns
t_{PHL}	Propogation Time, High -To- Low Level Output	C_L=15 ïÔ R_L=390 kΩ		25	50	ns
t_{THL}	Transition Delay Time, Low-To-High Level Output	C_L=15 pF R_L=3.9 kΩ		120	175	ns
t_{TLH}	Transition Delay Time, High-To-Low Level Output	C_L=15 pF R_L=390 kΩ		10	20	ns

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