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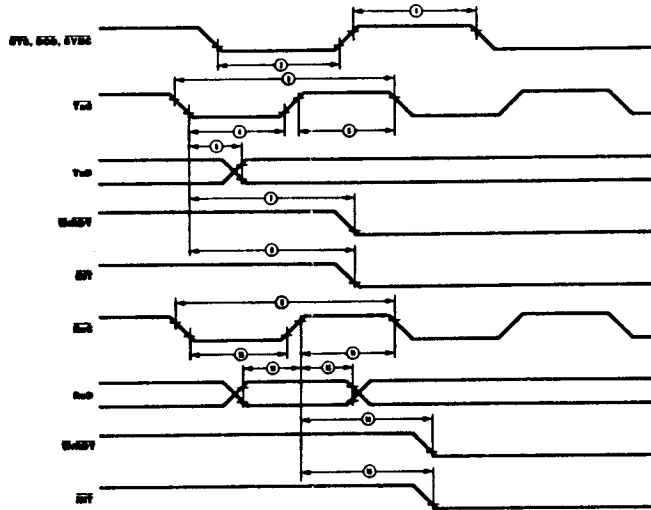


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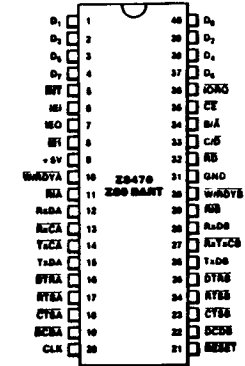
Zilog

Z08470 Customer
Procurement Spec (CPS)



GENERAL DESCRIPTION

The Z80 DART (Dual-Channel Asynchronous Receiver/Transmitter) is a dual-channel multifunction peripheral component that satisfies a wide variety of asynchronous serial data communications requirements in microcomputer systems. The Z80 DART is used as a serial-to-parallel, parallel-to-serial converter/controller in asynchronous applications. In addition, the device also provides modem controls for both channels. In applications where modem controls are not needed, these lines can be used for general-purpose I/O.



40-Pin Dual-In-Line Package (DIP),
Pin Assignments

Z80 is a registered trademark of Zilog, Inc.

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(MARCOM) DC2847 DOCUMENT CONTROL MASTER

DC CHARACTERISTICS

Symbol	Parameter	Min	Max	Unit	Test Condition
V _{IL} C	Clock Input Low Voltage	-0.3 ^a	+0.45 ^a	V	
V _{IH} C	Clock Input High Voltage	V _{CC} - 0.6 ^a	+5.5 ^a	V	
V _{IL}	Input Low Voltage	-0.3 ^a	+0.8 ^a	V	
V _{IH}	Input High Voltage	+2.0 ^a	+5.5 ^a	V	
V _{OL}	Output Low Voltage		+0.4 ^a	V	I _{OL} = 2.0 mA
V _{OH}	Output High Voltage	+2.4 ^a		V	I _{OH} = -250 μA
I _{IL}	Input/3-State Output Leakage Current	-10 ^b	+10 ^b	μA	0.4 < V _{IN} < 2.4V
I _{IPB}	R _I Pin Leakage Current	-40 ^b	+10 ^b	μA	0.4 < V _{IN} < 2.4V
I _{CC}	Power Supply Current		100 ^b	mA	

V_L = 0°C to 70°C; V_{CC} = -0.5 V to 5.5 V

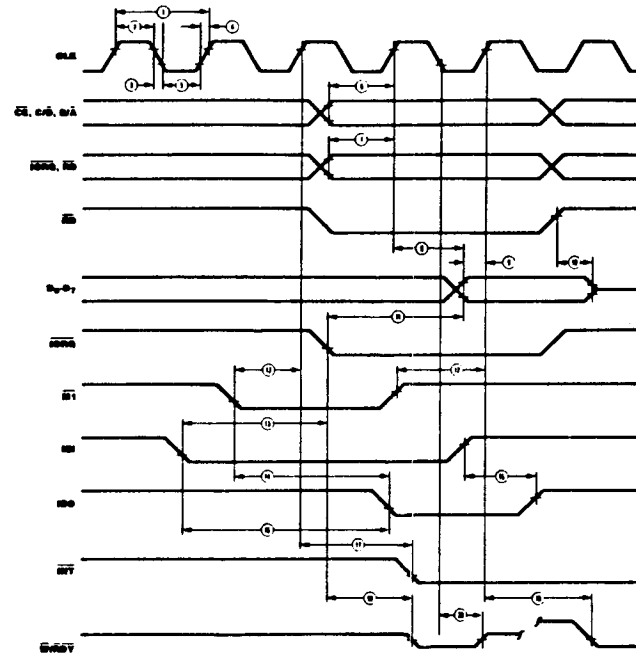
- a Tested
- b Guaranteed by Design
- c Guaranteed by Characterization

AC CHARACTERISTICS*

Number	Symbol	Parameter	Z80-4 DART		Z80-6 DART	
			Min	Max	Min	Max
1	T _c C	Clock Cycle Time	250 ^a	4000 ^a	165 ^a	4000 ^a
2	T _w Ch	Clock Width (High)	105 ^a	2000 ^a	70 ^a	2000 ^a
3	T _f C	Clock Fall Time		30 ^a		15 ^a
4	T _r C	Clock Rise Time		30 ^a		15 ^a
5	T _w Cl	Clock Width (Low)	105 ^a	2000 ^a	70 ^a	2000 ^a
6	T _s AD(C)	CE, C/Σ, B/A to Clock ↑ Setup Time	145 ^b		80 ^b	
7	T _s CS(C)	IORC, RD to Clock ↑ Setup Time	115 ^b		80 ^b	
8	T _d C(DO)	Clock ↑ to Data Out Delay		220 ^b		150 ^b
9	T _d C(C)	Data In to Clock ↑ Setup (Write or M1 Cycle)	50 ^b		30 ^b	
10	T _d RD(DOz)	RD ↑ to Data Out Float Delay		110 ^c		90 ^c
11	T _d RO(DOz)	IORC ↓ to Data Out Delay (NTACK Cycle)		180 ^c		100 ^c
12	T _s M1(C)	M1 to Clock ↑ Setup Time	90 ^b		75 ^b	
13	T _s IE(EO)	IE1 to IORC ↓ Setup Time (NTACK Cycle)	140 ^c		120 ^c	
14	T _d M1(EO)	M1 ↓ to IE0 ↓ Delay (interrupt before M1)	180 ^c		180 ^c	
15	T _d IE(EOz)	IE1 ↑ to IE0 ↓ Delay (after ED decode)	100 ^c		70 ^c	
16	T _d IE(EOz)	IE1 ↓ to IE0 ↓ Delay	100 ^b		70 ^b	
17	T _d C(INT)	Clock ↑ to INT ↓ Delay	200 ^b		150 ^b	
18	T _d OR(WRRW)	IORC ↓ or CE ↓ to W/RDY ↓ Delay (Wait Mode)	210 ^c		175 ^c	
19	T _d C(WRR)	Clock ↑ to W/RDY ↓ Delay (Ready Mode)	120 ^b		100 ^c	
20	T _d C(WRRz)	Clock ↓ to W/RDY Float Delay (Wait Mode)	130 ^c		110 ^c	

*Units in nanoseconds (ns).

- a Tested
- b Guaranteed by Design
- c Guaranteed by Characterization



AC CHARACTERISTICS (Continued)

Number	Symbol	Parameter	Z80-4 DART		Z80-6 DART		Notes*
			Min	Max	Min	Max	
1	T _w Ph	Pulse Width (High)	200 ^c		200 ^c		2
2	T _w Pl	Pulse Width (Low)	200 ^c		200 ^c		2
3	T _c T _c	ΣC Cycle Time	400 ^c	∞ ^c	330 ^c	∞ ^c	2
4	T _w T _c l	ΣC Width (Low)	180 ^c	∞ ^c	100 ^c	∞ ^c	2
5	T _w T _c h	ΣC Width (High)	180 ^c	∞ ^c	100 ^c	∞ ^c	2
6	T _d T _c (RxD)	ΣC ↓ to RxD Delay		300 ^b	220 ^b		2
7	T _d T _c C(WRR)	ΣC ↓ to W/RDY ↓ Delay (Ready Mode)	5 ^c	9 ^c	5 ^c	9 ^c	1
8	T _d T _c C(INT)	ΣC ↓ to INT ↓ Delay	5 ^c	9 ^c	5 ^c	9 ^c	1
9	T _c RxC	RxC Cycle Time	400 ^c	∞ ^c	330 ^c	∞ ^c	2
10	T _w RxC	RxC Width (Low)	180 ^c	∞ ^c	100 ^c	∞ ^c	2
11	T _w RxC	RxC Width (High)	180 ^c	∞ ^c	100 ^c	∞ ^c	2
12	T _s RxD(RxC)	RxD to RxC ↑ Setup Time (x1 Mode)	0 ^c		0 ^c		2
13	T _h RxD(RxC)	RxD Hold Time (x1 Mode)	140 ^c		100 ^c		2
14	T _d RxC(WRR)	RxC ↑ to W/RDY ↓ Delay (Ready Mode)	10 ^c	13 ^c	10 ^c	13 ^c	1
15	T _d RxC(INT)	RxC ↑ to INT ↓ Delay	10 ^c	13 ^c	10 ^c	13 ^c	1

* In all modes, the System Clock rate must be at least five times the maximum data rate. RESET must be active a minimum of one complete clock cycle.

1 Units equal to System Clock Periods.

2 Units in nanoseconds (ns).

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- c Guaranteed by Characterization