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Understanding <u>Embedded - FPGAs (Field Programmable Gate Array)</u>

Embedded - FPGAs, or Field Programmable Gate Arrays, are advanced integrated circuits that offer unparalleled flexibility and performance for digital systems. Unlike traditional fixed-function logic devices, FPGAs can be programmed and reprogrammed to execute a wide array of logical operations, enabling customized functionality tailored to specific applications. This reprogrammability allows developers to iterate designs quickly and implement complex functions without the need for custom hardware.

Applications of Embedded - FPGAs

The versatility of Embedded - FPGAs makes them indispensable in numerous fields. In telecommunications.

Details	
Product Status	Active
Number of LABs/CLBs	-
Number of Logic Elements/Cells	-
Total RAM Bits	276480
Number of I/O	223
Number of Gates	1500000
Voltage - Supply	1.425V ~ 1.575V
Mounting Type	Surface Mount
Operating Temperature	-40°C ~ 100°C (TJ)
Package / Case	484-BGA
Supplier Device Package	484-FPBGA (23x23)
Purchase URL	https://www.e-xfl.com/product-detail/microchip-technology/afs1500-2fgg484i

Email: info@E-XFL.COM

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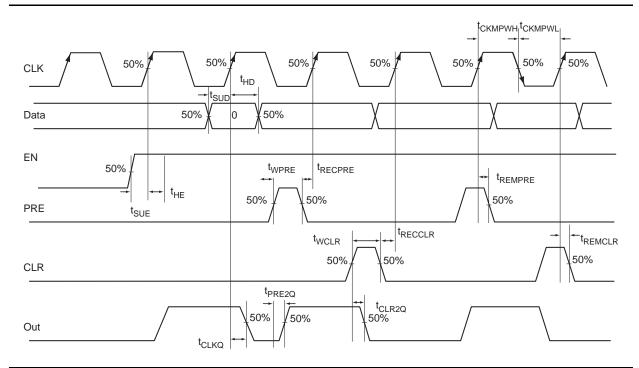


Figure 2-6 • Sequential Timing Model and Waveforms

Sequential Timing Characteristics

Table 2-2 • Register Delays Commercial Temperature Range Conditions: T $_{J}$ = 70°C, Worst-Case VCC = 1.425 V

Parameter	Description	-2	-1	Std.	Units
t _{CLKQ}	Clock-to-Q of the Core Register	0.55	0.63	0.74	ns
t _{SUD}	Data Setup Time for the Core Register	0.43	0.49	0.57	ns
t _{HD}	Data Hold Time for the Core Register	0.00	0.00	0.00	ns
t _{SUE}	Enable Setup Time for the Core Register	0.45	0.52	0.61	ns
t _{HE}	Enable Hold Time for the Core Register	0.00	0.00	0.00	ns
t _{CLR2Q}	Asynchronous Clear-to-Q of the Core Register	0.40	0.45	0.53	ns
t _{PRE2Q}	Asynchronous Preset-to-Q of the Core Register	0.40	0.45	0.53	ns
t _{REMCLR}	Asynchronous Clear Removal Time for the Core Register	0.00	0.00	0.00	ns
t _{RECCLR}	Asynchronous Clear Recovery Time for the Core Register	0.22	0.25	0.30	ns
t _{REMPRE}	Asynchronous Preset Removal Time for the Core Register	0.00	0.00	0.00	ns
t _{RECPRE}	Asynchronous Preset Recovery Time for the Core Register	0.22	0.25	0.30	ns
t _{WCLR}	Asynchronous Clear Minimum Pulse Width for the Core Register	0.22	0.25	0.30	ns
t _{WPRE}	Asynchronous Preset Minimum Pulse Width for the Core Register	0.22	0.25	0.30	ns
t _{CKMPWH}	Clock Minimum Pulse Width High for the Core Register	0.32	0.37	0.43	ns
t _{CKMPWL}	Clock Minimum Pulse Width Low for the Core Register	0.36	0.41	0.48	ns

Note: For the derating values at specific junction temperature and voltage supply levels, refer to Table 3-7 on page 3-9.

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