SP508: FAQ

Sipex Part: SP508
Date: Mar16-07

Question:
On the V.11 driver conversion from ttl to differential it's known that I would probably see a duty cycle change. I see from figure 35 of the data sheet that TPLH is always 2 to 5 ns bigger than TPLH. Thus I could lose from 2-5 ns of duty cycle every time I do a conversion. Assuming that is correct, what is the minimum duty cycle that the converter can receive and still do the conversion correctly? Is it tied to the 30 – 50 ns prop delay?

Answer:
Inverting the signals twice will cancel the delay thereby correcting the duty cycle. This comes at the cost of a channel, but it is a viable solution. Some of our customers do this in their systems.

Question:
In order to do a thermal analysis, I would like to know the Tj max value on a SP508EF chip. I've only find Tcase max (85°C) on the SP508 datasheet.

Answer:
Here are some basic calculations.
Icc(max) in EIA-530 mode (fully loaded, 10Mbps) = 270mA
--> P = 5V*270mA = 1350mW
So with T_A(max) = 70°C, and a package derating (T_{JA}) of 52.7 ºC/W
--> Tj(max) = 70 + 1.350*52.7 = 141ºC

Question:
Are the SP508CF-L / SP508EF-L / SP509CF-L drop in equivalents except for the clock rate?

Answer:
The SP508CF-L / SP508EF-L / SP509CF-L are drop in equivalents for each other with the exception of speed and temp ratings. All Sipex part numbers with the "-L" suffix are RoHS

