

**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 $T_A(max) = 70^\circ C$, and a package derating (T_{JA}) of $52.7^\circ C/W$

--> $T_j(max) = 70 + 1.350 * 52.7 = 141^\circ C$

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