PCB design considerations

Maximum current according to track width

Next table indicates maximum current capabilities depending of more common traces width used in our labs (for an increment of 10^{o}C above ambient temp)

Data has been obtained by the online calculator from DigiKey:

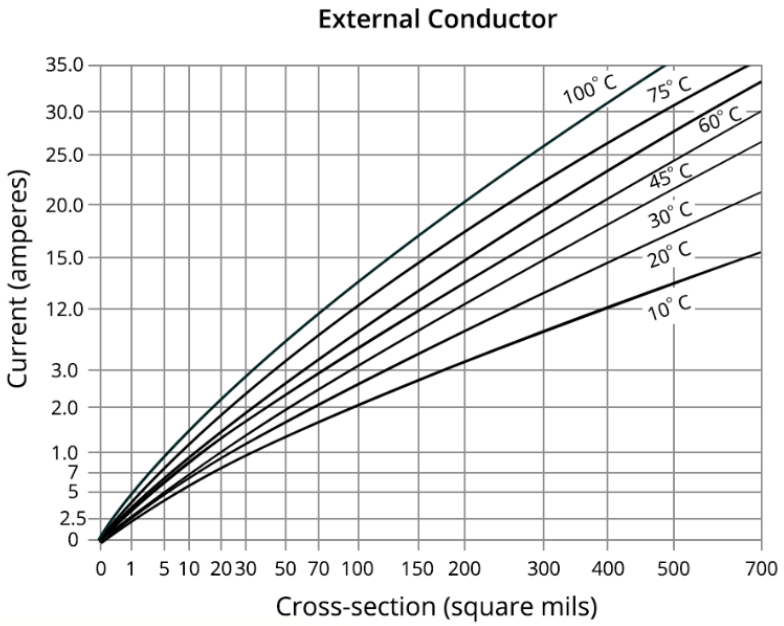
https://www.digikey.es/es/resources/conversion-calculators/conversion-calculator-pcb-trace-width?srsltid=AfmBOopNOZ3_QDf3OyPkBhdrRJYpS7bBpc4VYQ7qk2U03INr4itppTOP

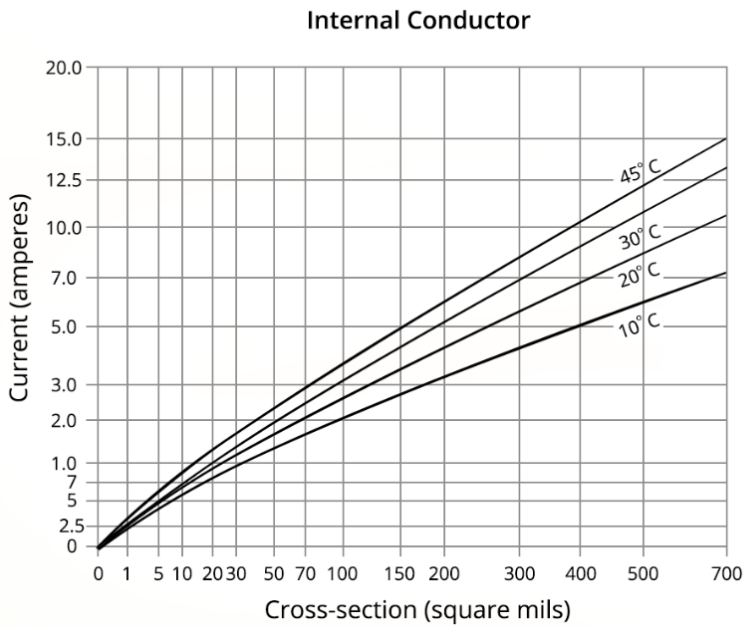
This data refers to a standard copper layer of 1 oz/ft^2 weight, which leads to a copper thickness of 35 µm

Trace width	**0,2**	**7,874**	**0,3**	**11,81**	**0,5**	**19,68**	**1**	**39,37**	**2**	**78,74**	**mm-mils**
Copper thickness	0,035	1,377	0,035	1,377	0,035	1,377	0,035	1,377	0,035	1,377	mm-mils
Cross section	0,007	10,842	0,0105	16,262	0,0175	27,099	0,035	54,212	0,07	108,425	mm^2-mils^2
t amb	25	25	25	25	25	25	25	25	25	25	^{0}C
Temp increasement	10	10	10	10	10	10	10	10	10	10	^{0}C
Trace length	200	7.874,01	200	7.874,01	200	7.874,01	200	7.874,01	200	7.874,01	mm-mils
Current	**0,75**	**0,75**	**1**	**1**	**1,45**	**1,45**	**2,45**	**2,45**	**3,95**	**3,95**	**A**
Voltage drop	0,374	0,374	0,336V	0,336V	0,291 V	0,291 V	0,239 V	0,239 V	0,199 V	0,199 V	V
Layer	External	External	External	External	External	External	External	External	External	External	
Substrate	FR4	FR4	FR4	FR4	FR4	FR4	FR4	FR4	FR4	FR4	

Another approach to obtain the current is using next tables from Altium:

https://resources.altium.com/es/p/pcb-trace-width-vs-current-table-high-voltage-design





Current (A)	Trace width (mil)
1	10
2	30
3	50
4	80
5	110
6	150
7	180
8	220
9	260
10	300

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