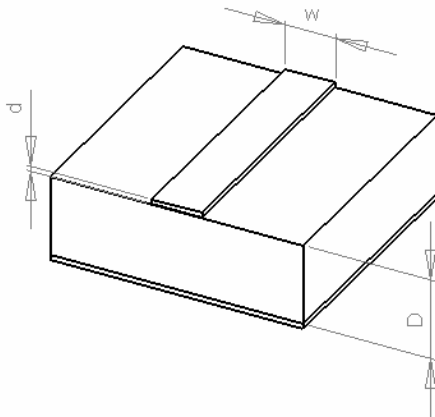


1. PCB copper strip width (external layers)¹



| d = 70 μm | I = 0.5 A | I = 1 A | I = 2 A | I = 5 A | I = 10 A | I = 20 A |
|------------------|------------------|----------------|----------------|----------------|-----------------|-----------------|
| ΔT = 10 K | 0.10 mm | 0.2 mm | 0.5 mm | 1.8 mm | 4.3 mm | 11 mm |
| ΔT = 30 K | 0.05 mm | 0.1 mm | 0.25 mm | 0.8 mm | 2.0 mm | 5 mm |

| d = 35 μm | I = 0.5 A | I = 1 A | I = 2 A | I = 5 A | I = 10 A | I = 20 A |
|------------------|------------------|----------------|----------------|----------------|-----------------|-----------------|
| ΔT = 10 K | 0.2 mm | 0.4 mm | 1.0 mm | 3.5 mm | 9 mm | 22 mm |
| ΔT = 30 K | 0.1 mm | 0.2 mm | 0.5 mm | 1.6 mm | 4 mm | 10 mm |

| d = 18 μm | I = 0.5 A | I = 1 A | I = 2 A | I = 5 A | I = 10 A | I = 20 A |
|------------------|------------------|----------------|----------------|----------------|-----------------|-----------------|
| ΔT = 10 K | 0.4 mm | 0.8 mm | 2.0 mm | 7.0 mm | 18 mm | 45 mm |
| ΔT = 30 K | 0.2 mm | 0.4 mm | 1.0 mm | 3.5 mm | 8 mm | 20 mm |

2. PCB strip spacing

200 V/mm

3. FR-4 dielectric properties

$\epsilon_r = 4.92$

4. Via current²

| Via hole diameter | Max current |
|------------------------|-------------|
| < Ø 0.35 mm | 1 A/via |
| Ø 0.35 mm ... Ø 1.0 mm | 2 A/via |
| > Ø 1.0 mm | 5 A/via |

¹ P. Horowitz, W. Hill, The Art of Electronics, second edition, 1989, Section 12.07, pp840-841

² National Semiconductors Analog University Seminar 2007