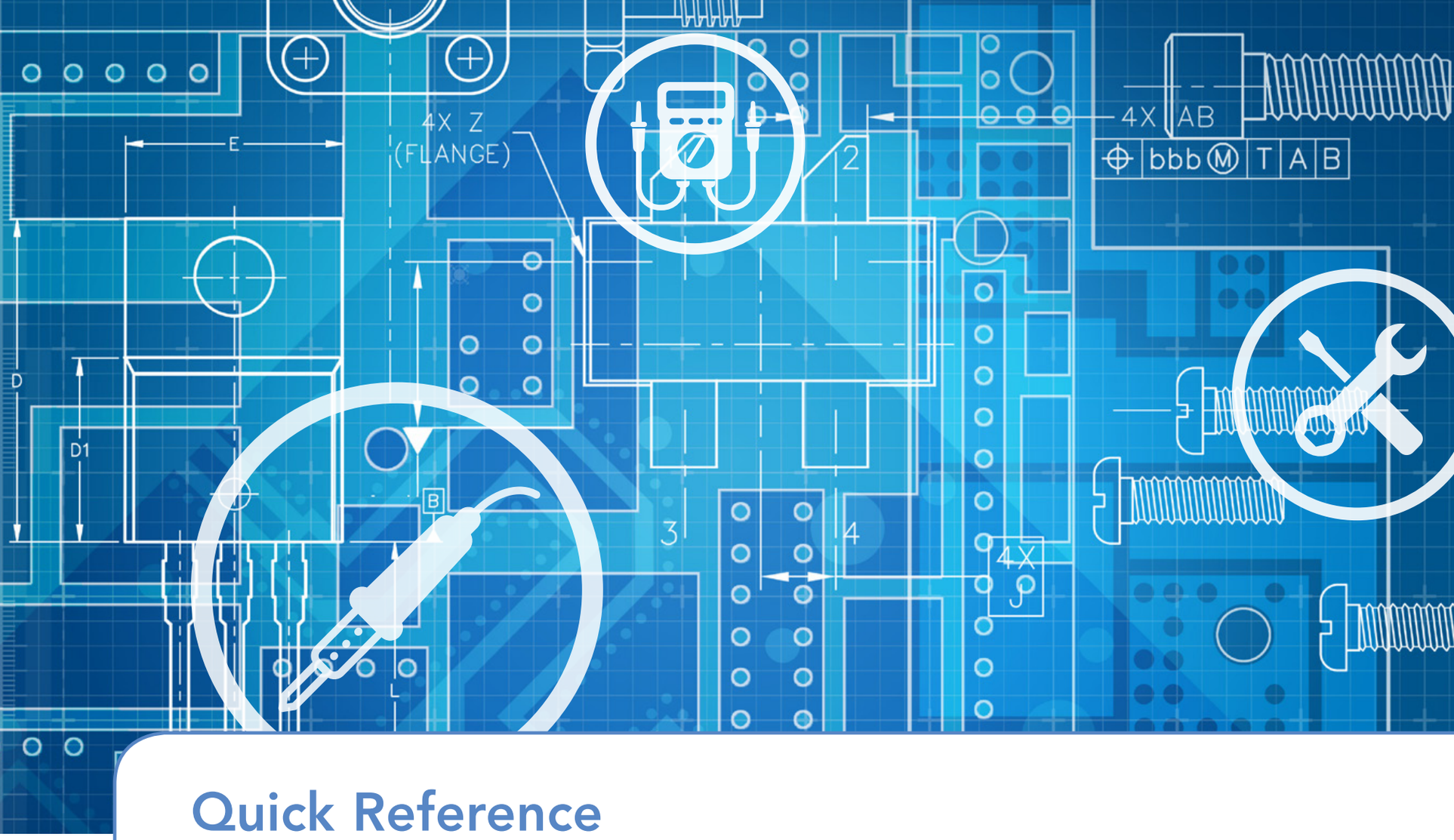

Quick Reference

MRF101AN RF Essentials Kit

Accelerate Your RF Amplifier Design
with the Essential Components Kit

GET TO KNOW THE MRF101AN KIT

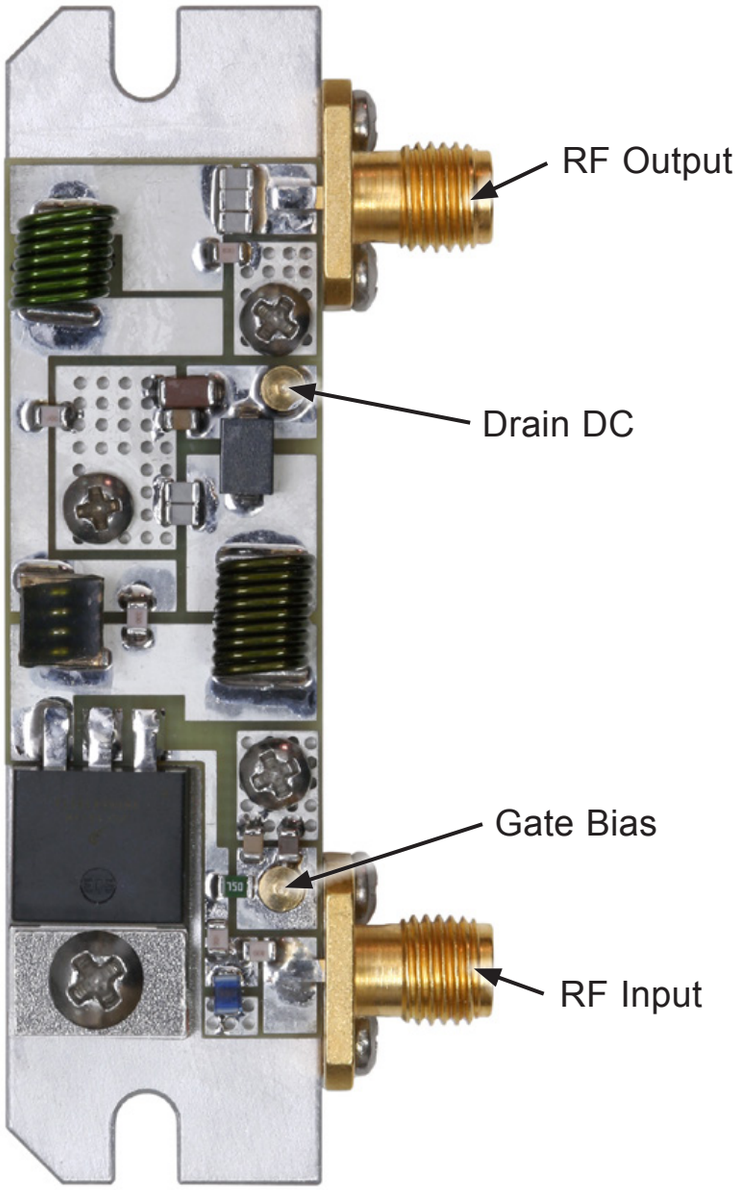

Figure 1: MRF101AN Board Connections

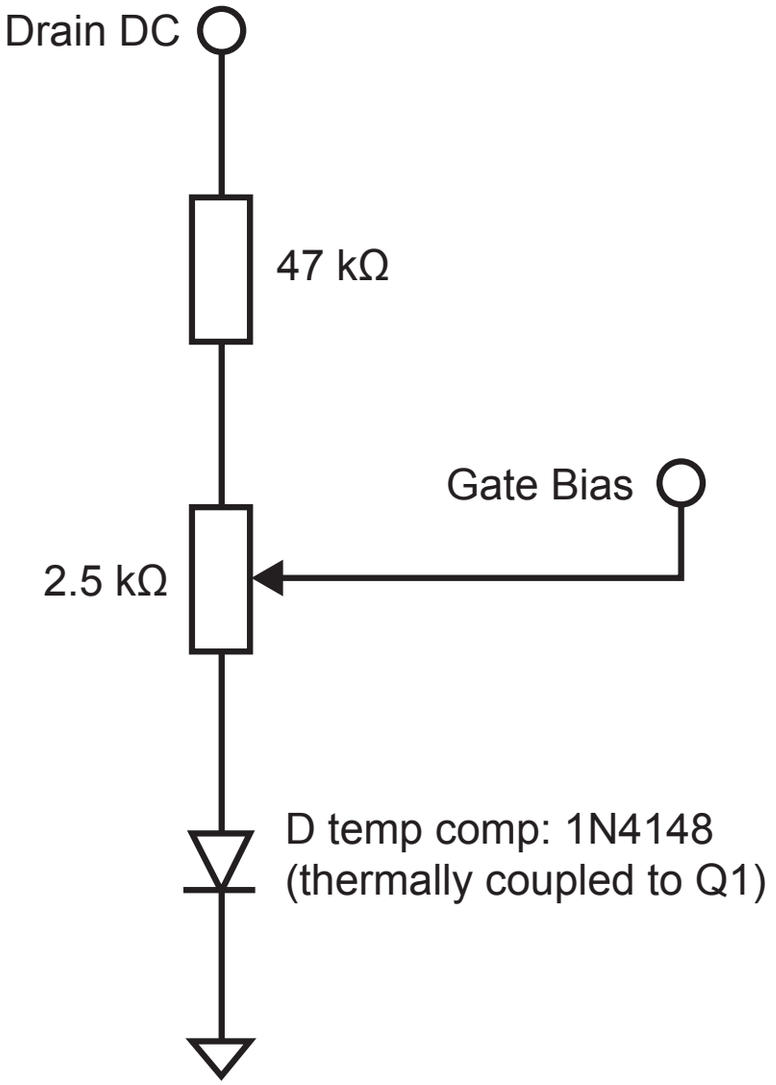

Figure 2: External Temperature Compensating Gate Bias Circuit

HOW TO GET STARTED

If the fixture is a new build:

1. Check gate bias connection using an ohmmeter: it should read open circuit.
2. Check drain DC power terminal using an ohmmeter: short gate bias to ground and drain DC power terminal should read open circuit.

Initial power on:

1. Mount baseplate onto a heatsink capable of dissipating more than 40 W.
2. Terminate RF output with a 50 ohm load capable of dissipating more than 100 W.
3. Connect RF input to a 50 ohm source with RF off.
4. Set gate bias to 0 V.
5. Apply 40 to 50 Vdc to drain DC terminal. Current should be 0 A.
6. Adjust gate bias to desired target current, typically 1-10% of full rated current (50-500 mA).
7. Slowly increment RF input power source taking care not to exceed 1 W. Monitor drain DC current and RF output power (4 A max at 100 W).
8. Check drain DC current, RF output power and temperature (4 A max at 100 W).

Shutdown:

1. Shut off RF input power.
2. Reset gate bias to 0 V.
3. Remove drain DC voltage.

Assembly notes:

- Mount all SMT devices on PCB (device values are dependent on frequency of operation).
- Make sure no solder blobs are on non-component side of board.
- Trim leads of MRF101AN to shoulder.
- Mount board onto baseplate.
- Mount device using thermal grease, solder only after tightening device mounting screw.
- Mount connectors and solder center pin.
- Connect bias network if used.

For design examples go to www.nxp.com/MRF101AN-TSP

www.nxp.com/MRF101KIT

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