

SOA and Thermal Checklist for External FET

- 1) Worst-case: VIN max, Tamb max, airflow, enclosure
- 2) Short energy rectangle: $V * I * t$ within FET SOA curve
- 3) Gate control: fast turn-off, blanking clamps, Miller control
- 4) Thermal path: $R_{\theta J C}$, pad size, via count, copper spread
- 5) Repetitive stress: auto-retry duty-cycle; junction cooldown margin
- 6) Validate: thermocouples or IR; scope Vds/Ids; lot-to-lot repeatability