



20N1 Active Clamp Forward Series

Key features & specifications

TOPOLOGY
Active Clamp Forward

FREQ. RANGE
180–240 kHz typical

ISOLATION
1500–2250 Vdc

POWER RANGE
30–80 W

EFFICIENCY
94% typical

CORE PLATFORM
ER20 (custom)

INSULATION CLASS
H

OPER. TEMP.
–55 to +155 °C

Optimized for opto-isolated Active Clamp Forward & synchronous-rectifier converter designs. Aggressive interleave planar construction achieves the lowest leakage inductance; multilayer PCB optimization minimizes AC resistance & proximity loss. Integer turns 1–16 available (contact us if not shown). Options: surface mount, thru-hole, pad-to-pad, thermal pad, embedded planar windings. Demonstration boards available.

Part number & parameter table

Stresses beyond values listed may cause permanent damage. Functional operation beyond any rating is not implied. All values at $T_{amb} = 25\text{ °C}$ unless noted.

Part Number	Topology	Vin Min (V)	Vin Nom (V)	Vin Max (V)	Vout (V)	Output Power (W)	Frequency (kHz)	Simulation	LTSpice	Output Inductor
20N1-1202-80R	Active Clamp Forward	36	48	72	3.3	60	240	—	—	PQL2050-3R3-22
20N1-0802-80R	Active Clamp Forward	36	48	72	5.0	60	240	—	—	PQL2050-4R9-14
20N1-1005	Active Clamp Forward	36	48	72	12.0	60	240	—	—	PQi2050-20-HX
20N1-1012	Active Clamp Forward	36	48	72	24.0	60	240	—	—	PQi2050-100-6-LTC
20N1-0702-40R	Active Clamp Forward	18	28	36	3.3	60	240	—	—	PQL2050-3R3-22
20N1-0603-40R	Active Clamp Forward	18	28	36	5.0	60	240	—	—	PQL2050-4R9-14
20N1-0606-40R	Active Clamp Forward	18	28	36	12.0	60	240	—	—	PQi2050-20-HX
20N1-0612-40R	Active Clamp Forward	18	28	36	24.0	60	240	—	—	PQi2050-100-6-LTC
20N1-0302	Active Clamp Forward	9	12	32	3.3	60	240	—	—	PQL2050-3R3-22
20N1-0303	Active Clamp Forward	9	12	32	5.0	60	240	—	—	PQL2050-4R9-14
20N1-0306	Active Clamp Forward	9	12	32	12.0	60	240	—	—	PQi2050-20-HX
20N1-0312	Active Clamp Forward	9	12	32	24.0	60	240	—	—	PQi2050-100-6-LTC

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Mechanical outline & package dimensions

Length	L	21.0
Width	W	17.8
Height	H	7.0
Weight (approx.)		10 g
Tolerances		±0.78 mm unless noted
Finish		RoHS · Cu leads · Sn/Ag 96/4

Notes

- The 20N1 series is designed for opto-isolated Active Clamp Forward circuits as described by the LT3753 controller (Analog Devices).
- Secondary-side synchronous-rectifier FETs are typically controlled by the LT8311 secondary-side IC. Direct drive through the secondary winding is ideal for a 2:1 input range.
- The 20N1 series can also operate over a wider input range, or be configured for different input/output voltages and rated power. Increased height allows higher output power through higher current capability.
- Integer turns from 1T to 16T are available; windings can be used as primary or secondary. The mechanical outline allows a “flex” arrangement. Contact the factory for any power-topology design.
- All designs can be supplied with planar windings embedded in the PCB of the converter main module. Heatsink, installed power components, SMT assembly and module integration are also available.
- Operating temperature = ambient + temperature rise; must not exceed the insulation-class limit.
- Contact applications engineering for custom variants.

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