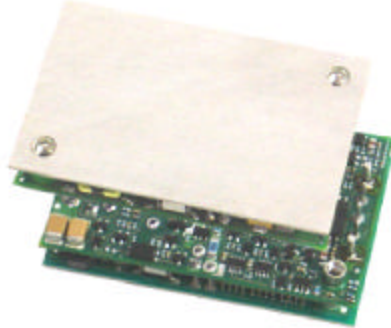


Advance Product Brief: Supereta™ Series – Single Output High Current Quarter Brick

Supereta™ iQN Series DC/DC Power Modules 48V Input, 28V Output, 200W Quarter Brick



The Supereta™ iQN Series offers an **industry standard quarter brick** high current power module with true useable output power. Its **92%** typical efficiency, a power density greater than 118W per cubic inch, output voltage fold-back current limit feature, and superior thermal performance make the iQN Series of power modules ideally suited for wireless applications to power various RF amplifiers. This rugged building block is designed to serve as the core of the high reliability system. The droop current sharing capability allows multiple modules connected in parallel to be possible. A wide output voltage **trim range, -40 to +10%**, remote sensing, and remote ON/OFF control are standard features enhancing versatility.

Features

- Standard Quarter Brick Pinout
- Size: 2.28" × 1.45" × 0.5"
- Up to 7A of output current
- Power density > 118W / in³
- Efficiency – up to 93.5%
- Full load efficiency – 92%
- Droop load share (0.125V/A)
- Voltage foldback constant current limit
- Wide output voltage trim range 17-30.8V
- Insulated Metal Substrate (IMS) for high usable power
- Suitable for wireless RF applications
- Basic insulation – 1500Vdc
- Choice of remote on/off configuration
- Remote sense
- Constant switching frequency
- Latched output over-voltage protection
- Auto-recovery full protections:
 - Input under and over voltage
 - Output over-current
 - Output short circuit
 - Thermal limit
- UL 60950 (US and Canada), VDE 0805, CB scheme (IEC950) Safety markings and CE Mark (EN60950)
- Optional 0.110", 0.180", 0.200" pin length
- Optional Thru-Hole PEM Studs
- Optional non-latching OVP protection
- Optional Latched over-current protection
- Optional Latched OTP
- EMI: CISPR 22 A or B with external filter
- Multiple patents
- ISO9000 certified manufacturing facilities

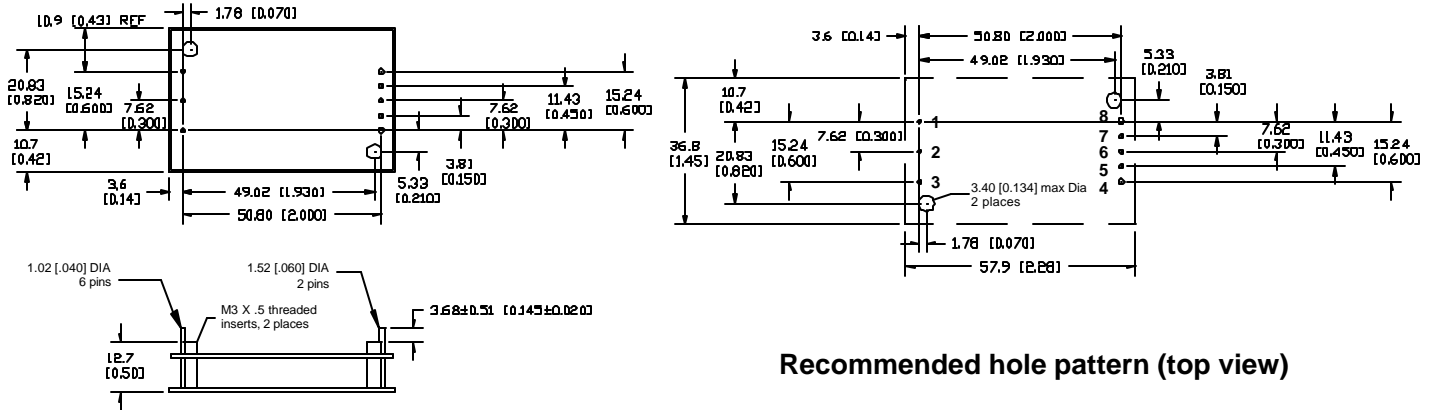
TDK Innoveta Base Product Code	Input Voltage	Output Voltage	Output Current	Efficiency 100%Load
iQN48007A280V	36-75V	28V	7A	92%

Typical Performance

Input Characteristics		
Operating input range	36-75V	
Transient input voltage	100V	100mS max
Turn-on voltage	34.5V	
Turn-off voltage	32.3V	
Start-up time	50 mS	On/Off to 90% Vout
Maximum input current	7A	Input 0-75V, I _{o,max}
Output Characteristics		
Output Initial set-point accuracy	+/- 1%	V _{in} =V _{in,nom} , I _o =0A, T _c =operating range
Efficiency	92%	I _{o,max}
Line regulation	28 mV	Over rated input
Droop Rate	0.125 V/ A	Help to load share
Load regulation	28 mV*	Over rated load * Excluding the droop
Output voltage adjustment	60%-110%	%V _{o,nom}
Output ripple	75 mVp-p	20MHz bandwidth
Output current range	0 to 7A	With voltage droop
Dynamic response	Load step 25% of I _{o,max}	
Transient voltage	375 mV	slew rate =0.1A/us
Recovery time	0.85 mS	
Output Load Capacitance	5000 uF	Min ESR > 3mΩ
Ripple frequency	310 kHz	Fixed
Protection		
Output over-current	Constant Current	Voltage foldback
Short circuit	Constant Current	Continuous protection
Output over-voltage	120% of V _{out,nom}	Latching
Thermal shutdown	120C	Auto recovery with hysteresis
Environmental		
Operating temperature	-40C to 115C	See full datasheet

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Dimensions are in mm [in]. Unless otherwise specified tolerances are: $x.x \pm 0.5$ [0.02], $x.xx \pm 0.25$ [0.010].



Recommended hole pattern (top view)

PIN	FUNCTION	PIN	FUNCTION
1	Vin (+)	4	Vo (-)
2	On/Off	5	Sense (-)
3	Vin (-)	6	Trim
		7	Sense (+)
		8	Vout (+)

Ordering Information

Product Identifier	Package Size	Platform	Input Voltage	Output Current/Power	Output Units	Main Output Voltage	# of Outputs	Safety Class	Feature Set
i	Q	N	48	007	A	280	V	- 0	00
TDK Innoveta	Quarter-Brick	Supereta	36-75V	007 – 7A	Amps	280 – 28V	Single		00 – Standard

Feature Set	On/Off Logic	OVP	Pin Length
00	Positive	Latch	0.145"
01	Negative	Latch	0.145"
02	Positive	Latch	0.110"
03	Negative	Latch	0.110"
04	Positive	Latch	0.200"
05	Negative	Latch	0.200"
06	Positive	Non-Latch	0.145"
07	Negative	Non-Latch	0.145"
08	Positive	Latch	0.180"
09	Negative	Latch	0.180"

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