



Drone ESC Power Solutions

60V / 80V / 100V N-Channel MOSFETs for Electronic Speed Controllers

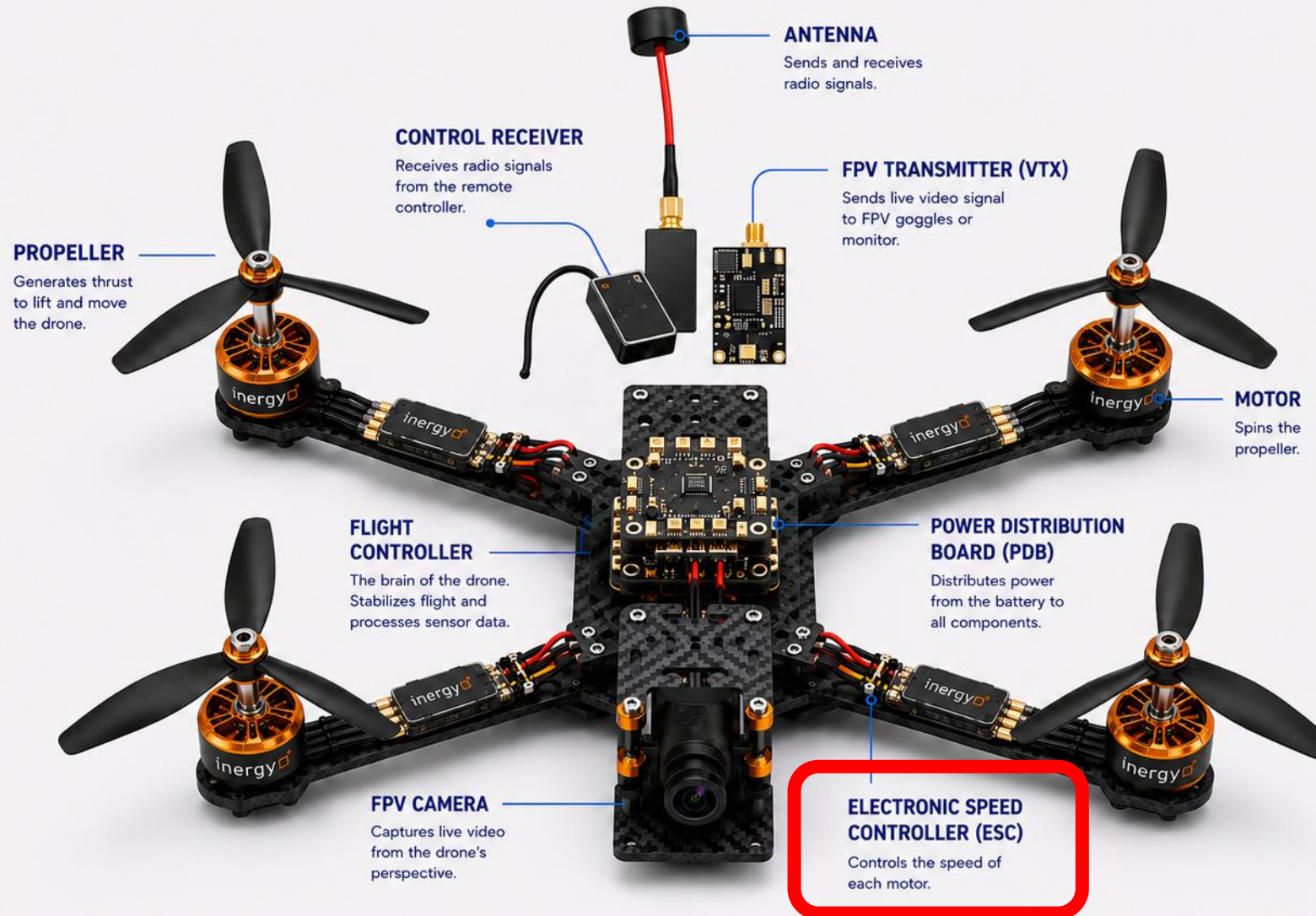
Reduce BOM cost. Simplify design. Maintain robust performance.

MOSFET Selection Guide

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• PARTS OF A DRONE •



HOW IT WORKS



1. Pilot Input
You control the drone using a remote controller.



2. Signal Received
The control receiver receives the signal and sends it to the flight controller.



3. Flight Controller
Processes the data, stabilizes the drone, and sends commands to the ESCs.

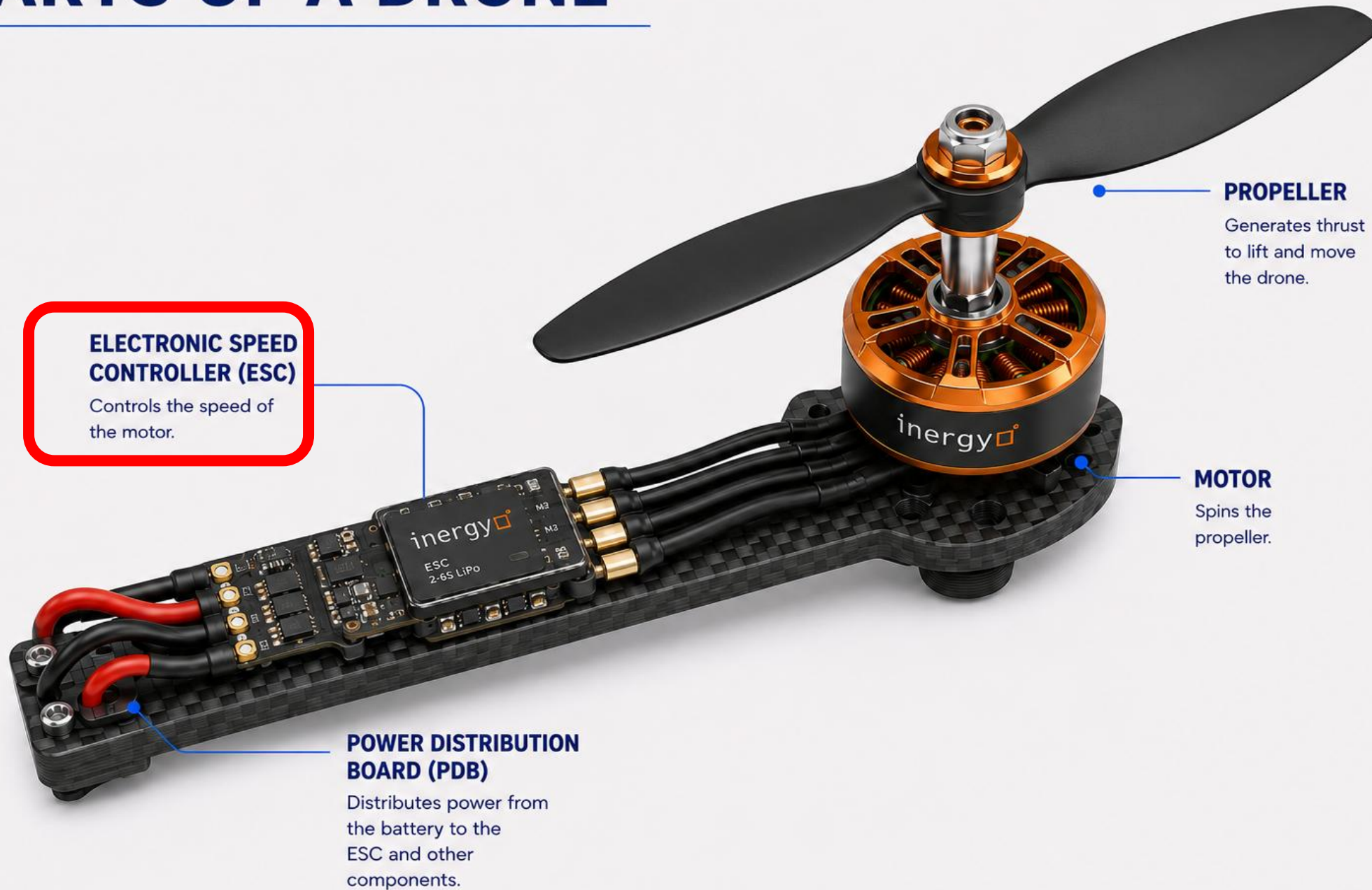


4. Motors Adjust
ESCs adjust motor speed to perform the desired action.



5. Drone Response
The drone moves, stabilizes, and sends live video back to the pilot.

PARTS OF A DRONE



ELECTRONIC SPEED CONTROLLER (ESC)

POWERFUL. EFFICIENT. RELIABLE.

inergy 



HIGH PERFORMANCE

Optimized for maximum efficiency and throttle response.



LOW HEAT

Advanced design and premium components for better heat dissipation.



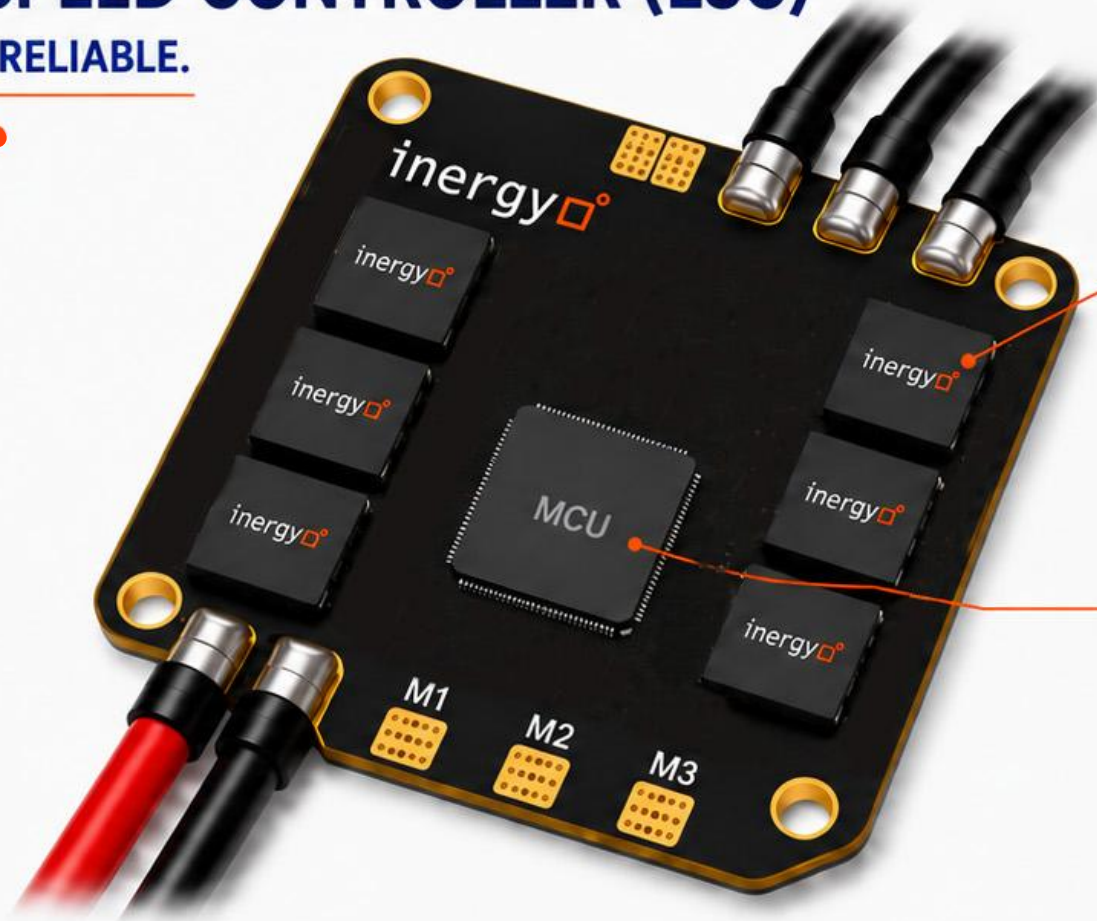
RELIABLE & DURABLE

Built with high-quality components for demanding conditions.



SMOOTH CONTROL

Precise motor control with high-speed processing.



MOSFET

iMN016N10CT TOLL-8L PACKAGE

Low Rds(on) for maximum efficiency and low heat.

MCU

High-performance motor controller for precise and smooth control.

inergy COMPONENTS

inergy iMN016N10CT

- 100V N-Channel MOSFET
- Low Rds(on)
- High Current Capability
- Low Gate Charge
- TOLL-8L Package



Drone MOSFETs

- 80 – 150V N-CH MOSFETs
- Low Rds(on) (< 1mΩ)
- High Current Capability (up to 500A)
- eMOS™ Technology



INPUT VOLTAGE
2S – 6S LiPo
(7.4V – 25.2V)



CONTINUOUS CURRENT
60A



BURST CURRENT
80A (10S)



HIGH EFFICIENCY

Low Rds(on) MOSFETs reduce power loss and heat generation.



LOW HEAT DESIGN

Optimized layout and premium components for cool operation.



FAST RESPONSE

High-speed FOC control for smooth and precise throttle.



BUILT TO LAST

Engineered for reliability in all flight conditions.

Why inergy for Drone ESC?

Power MOSFETs sit at the heart of every ESC. inergy serves this market with a cost-optimized N-channel portfolio built for high current density and low conduction loss.



Cost Optimization

MOSFETs are 40–55% of ESC active BOM cost. Competitive low-Rds(on) pricing moves that line directly.



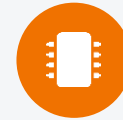
Voltage Margin

60V, 80V and 100V ratings span 4S sport builds through 14S heavy-lift, with headroom against flyback and commutation spikes.



Thermal Efficiency

Rds(on) down to 0.82 mΩ minimizes I²R conduction loss — cooler ESCs, longer flight times.



Package Choice

PDFN5x6 and LPAK5x6 for compact stacks; TOLL and TOLT for high-current payload classes.

Battery Configuration → MOSFET VDS Selection

Selecting the ESC MOSFET starts from the fully-charged pack voltage, not the nominal rating.

Battery Size	Nominal Voltage	Max Voltage (Charged)	Recommended VDS
1S	3.7 V	4.2 – 4.35 V (LiHV)	12 V to 20 V
2S – 3S	7.4 – 11.1 V	8.4 – 12.6 V	20 V to 30 V
4S	14.8 V	16.8 V	30 V
6S	22.2 V	25.2 V	40 V
8S	29.6 V	33.6 V	60 V
12S – 14S	44.4 – 51.8 V	50.4 – 58.8 V	80 V to 100 V

Where inergy's ESC line lands: 60V devices suit 4S–6S sport and inspection builds, 80V covers 8S–12S, and 100V serves 12S–14S heavy-lift and agricultural platforms — each with derating margin for switching-node ringing, long battery leads, and regenerative braking.

ESC Motor-Drive MOSFET Portfolio | MOSFET SELECTION GUIDE — 2026 Q3

N-channel devices from the 2026 Q3 Selection Guide — 60V, 80V and 100V, $\leq 2.6\text{ m}\Omega$, $\geq 100\text{ A}$, surface-mount power packages.

Part Number	VDS	Rds(on) max @10V	ID @25°C	Qg	Package	Status
iMF407	60 V	0.82 mΩ	246 A	144 nC	LFPAK5x6-4L	MP
iMN006N06T	60 V	0.83 mΩ	300 A	264 nC	TOLLA-8L	Preliminary
iMN009N06G	60 V	1.05 mΩ	320 A	153 nC	PDFN5x6B	MP
iMN011N06T	60 V	1.12 mΩ	200 A	150 nC	TOLLA-8L	MP
iM1829	60 V	2.5 mΩ	160 A	99 nC	PDFN5x6A	MP
iMN007N08T	80 V	0.9 mΩ	500 A	338 nC	TOLLA/B-8L	MP
iM7L03	80 V	0.95 mΩ	300 A	329 nC	TOLT	Preliminary
iMF415	80 V	1.6 mΩ	300 A	147 nC	LFPAK5x6-4L	MP
iM7203	80 V	1.68 mΩ	306 A	166 nC	TOLLB-8L	Preliminary
iMN1R5N08G	80 V	1.8 mΩ	200 A	143 nC	PDFN5x6C	MP
iMN1R5N08GH	80 V	1.9 mΩ	200 A	131 nC	PDFN5x6C	MP
iM7207	100 V	1.2 mΩ	400 A	254 nC	TOLLB-8L	Preliminary
iMN009N10TG	100 V	1.25 mΩ	300 A	284 nC	TOLLB/C-8L	Preliminary
iMN01N10T	100 V	1.4 mΩ	300 A	233 nC	TOLLA-8L	MP
iMN016N10CT	100 V	1.6 mΩ	324 A	173 nC	TOLLB-8L	Preliminary
iM7131	100 V	1.8 mΩ	277 A	96 nC	TOLLB-8L	MP

Reading it: low Rds(on) cuts conduction loss at hover; low Qg cuts switching loss at high PWM rates. iMN1R5N08G and -GH are a matched pair — 1.8 mΩ / 143 nC versus 1.9 mΩ / 131 nC — trading conduction against switching in the same PDFN5x6C footprint. Italic status = Preliminary.

Partner with inergy.

Start your design-in today.

01

Request Samples

Evaluation samples of the 60V / 80V / 100V N-channel devices, shipped against your ESC schematic.

02

BOM Cost Review

Joint session to quantify savings in your specific ESC design versus current sourcing. Real numbers on the table.

03

Design-In Support

FAE support for schematic review, PCB layout, thermal analysis, and device selection for your exact platform.

04

Volume Agreement

Volume pricing and supply security aligned to your production ramp. Taiwan-based manufacturing.

Contact inergy Drone Power Solutions Team: mkt@inergy.com.tw | www.inergy.com.tw

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