

## YX4735 – Three-Phase 100V, 6A/12A, Half Bridge Gate Driver with ISNS/TMON

**1 Features**

- Three-phase half bridge driver for Si&GaN FETs
- Three integrated current sense amplifiers
- Up to 100V maximum input voltage
- Adjustable slew rate control for optimal EMI
- Programmable over current (OC) limit and dead time control
- Tri-state PWM input
- Integrated bootstrap diode
- Internal bootstrap supply voltage clamping
- 6A/12A peak source and sink current
- Split gate driver with programmable pull-up and pull-down driving capability
- Extremely short propagation delay
- Fast gate rise and fall time
- Excellent noise rejection, switching node slew rate >50V/ns
- Enable (EN) control for low standby power
- On-Die accurate temperature monitoring
- Output current and temperature monitoring
- Build-In UVLO, OTP, HSS, OCP protection and reporting
- QFN6x6-56L

**2 Applications**

- Three-phase BLDC motor drive
- Robotics and FPVs
- Fan, Pumper and Motors
- E-bike, E-scooter and EV

**3 Description**

The YX4735 is a three-phase half bridge gate driver with three integrated current sense amplifiers designed for Si FET and high-speed GaN FET applications for BLDC motor drive and E-bike and scooter applications. It integrates up to 100V gate drivers and bootstrap diode and supports tri-state PWM input. The high-side driving voltage is clamped internally to prevent Si or GaN FET from exceeding gate-source voltage rating. The YX4735 has a split gate driver for flexible output turn-on and turn-off time adjustment, which is useful for EMI optimizations for the entire power system. On the other hand, the YX4735 can deliver high peak current up to 6A source and 12A sink. It supports rail-to-rail drive capability with 7V maximum supply input voltage. Its ultra-short propagation delay and fast rise and fall time fits Si & GaN FET applications.

The YX4735 features output current and temperature sensing and reporting to controller. Built in under voltage lockout (UVLO), over temperature protection (OTP), high side MOSFET short protection (HSS) and over current protection (OCP) help to ensure the device operates safely and reliably.

The YX4735 is available in QFN6x6-56L Device Information.

[Ordering Information](#) appears at page2 of datasheet.

**4 Device Information**

PART NUMBER	PACKAGE	BODY SIZE (NOM)
YX4735CALCC	QFN6x6-56L	6mm × 6mm