

## DESCRIPTION

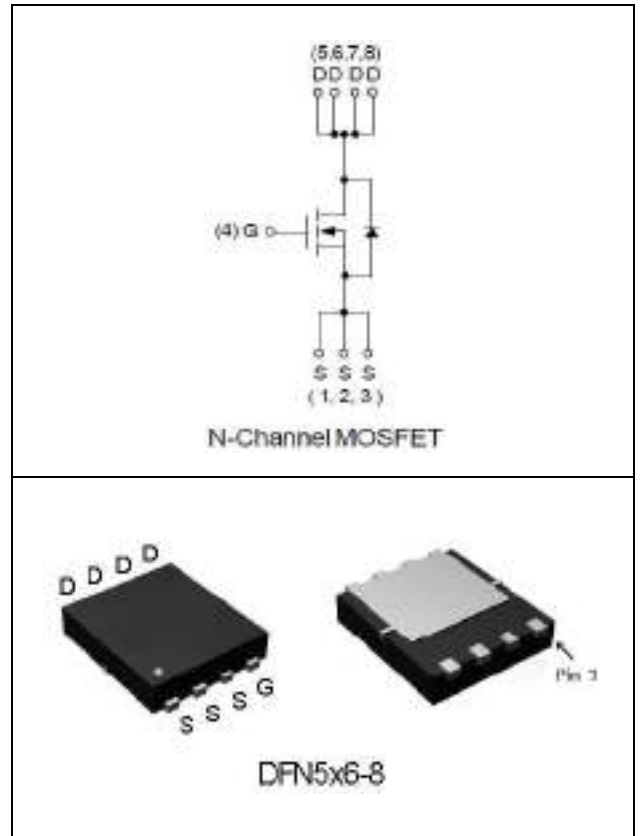
The TCS1840 uses advanced trench technology to provide excellent RDS(ON) and low gate charge. This device is suitable for use as a load switch or in PWM applications.

## GENERAL FEATURES

- 40V/80A  
RDS(ON) <3.7mΩ @ VGS=10V  
RDS(ON) <5.5mΩ @ VGS=4.5V
- Lower Qg and Qgd for high-speed switching
- Lower RDS(ON) to Minimize Conduction Losses
- Surface Mount Package
- Lead Free and Green Devices available(RoHS Compliant)

## Application

- Power Management in Desktop Computer or DC/DC Converters.



## ABSOLUTE MAXIMUM RATINGS(TA=25°C unless otherwise noted)

| Parameter                                       | Symbol                                 | Limit      | Unit |
|---|--|------------|------|
| Drain-Source Voltage                            | V <sub>DS</sub>                        | 40         | V    |
| Gate-Source Voltage                             | V <sub>GS</sub>                        | +20        | V    |
| Diode Continuous Forward Current                | I <sub>S</sub> (T <sub>C</sub> =25°C)  | 28         | A    |
| Pulsed Drain Current                            | I <sub>DM</sub> (T <sub>C</sub> =25°C) | 320        | A    |
| Drain Current @ Continuous                      | I <sub>D</sub> (T <sub>C</sub> =25°C)  | 80         | A    |
|   | I <sub>D</sub> (T <sub>C</sub> =100°C) | 65         | A    |
| Maximum Power Dissipation                       | P <sub>D</sub> (T <sub>C</sub> =25°C)  | 62.5       | W    |
|   | P <sub>D</sub> (T <sub>C</sub> =100°C) | 31.3       |      |
| Drain Current @ Continuous                      | I <sub>D</sub> (T <sub>A</sub> =25°C)  | 17.5       | A    |
|   | I <sub>D</sub> (T <sub>A</sub> =70°C)  | 14.7       | A    |
| Pulsed Drain Current                            | I <sub>DM</sub> (T <sub>A</sub> =25°C) | 70         | A    |
| Maximum Power Dissipation(Note 2)               | P <sub>D</sub> (T <sub>A</sub> =25°C)  | 2.3        | W    |
|   | P <sub>D</sub> (T <sub>A</sub> =70°C)  | 1.3        |      |
| Avalanche Energy, Single pulse                  | EAS(L=0.1mH)                           | 51         | mJ   |
| Thermal Resistance,Junction-to-Ambient (Note 2) | R <sub>θJA</sub> (t <sub>s</sub> ≤10s) | 24         | °C/W |
|   | R <sub>θJA</sub> (Steady State)        | 66         |      |
| Thermal Resistance,Junction-to-Case(Note 5)     | R <sub>θJC</sub> (Steady State)        | 2.4        | °C/W |
| Maximum Operating Junction Temperature          | T <sub>J</sub>                         | 175        | °C   |
| Storage Temperature Range                       | T <sub>STG</sub>                       | -55 To 175 | °C   |