

### Description

The TCS80N06 uses advanced trench technology that is uniquely optimized to provide the most efficient high frequency switching performance. Both conduction and switching power losses are minimized due to an extremely low combination of  $R_{DS(ON)}$  and  $Q_g$ . This device is ideal for high-frequency switching and synchronous rectification.

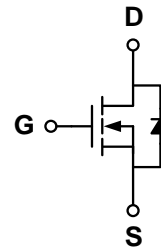
### General Features

- ◆  $V_{DS} = 60V$ ,  $I_D = 80A$   
 $R_{DS(ON)}(Typ.) = 6m\Omega @V_{GS} = 10V$   
 $R_{DS(ON)}(Typ.) = 9.8m\Omega @V_{GS} = 6V$
- ◆ Excellent gate charge x  $R_{DS(on)}$  product(FOM)
- ◆ Very low on-resistance  $R_{DS(on)}$
- ◆ 150 °C operating temperature
- ◆ 100% UIS tested

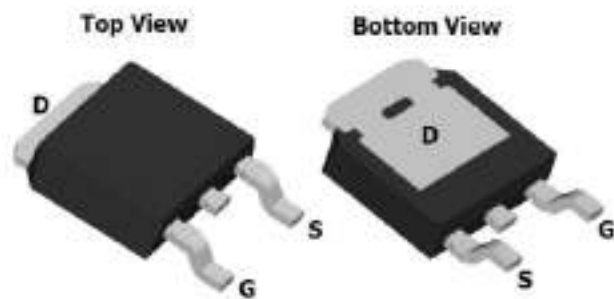
### Application

- ◆ Synchronous Rectification in DC/DC and AC/DC Converters
- ◆ Industrial and Motor Drive applications

### Schematic diagram



### Marking and pin assignment



### Ordering Information

| Part Number  | Storage Temperature | Package   | Devices Per Reel |
|--------------|---------------------|-----------|------------------|
| TCS80N06_ TC | -55°C to +150°C     | TO-252-2L | 2500             |

### Absolute Maximum Ratings (TA=25°C unless otherwise noted)

| parameter   | symbol   | limit   | unit |   |
|---|----------|---------|------|---|
| Drain-source voltage  | $V_{DS}$ | 60      | V    |   |
| Gate-source voltage   | $V_{GS}$ | ±20     | V    |   |
| Continuous Drain Current  | $I_D$    | TC=25°C | 80   | A |
|   |          | TC=70°C | 63   |   |
| Pulsed Drain Current  | $I_{DP}$ | 145     | A    |   |
| Avalanche energy(Tj=25°C ,V <sub>DD</sub> =30V,V <sub>G</sub> =10V,L=0.5mH,R <sub>g</sub> =25Ω) | $E_{AS}$ | 100     | mJ   |   |
| Power Dissipation   | $P_D$    | TC=25°C | 83   | W |
|   |          | TC=70°C | 53   |   |
| Operating junction Temperature range  | $T_j$    | -55—150 | °C   |   |