

### Description

The TCS1145 uses Shield Gate 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

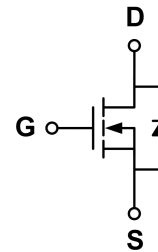
- ◆  $V_{DS} = 100V$ ,  $I_D = 45A$   
 $R_{DS(ON)}(Typ.) = 14.0m\Omega @V_{GS} = 10V$   
 $R_{DS(ON)}(Typ.) = 18.5m\Omega @V_{GS} = 4.5V$
- ◆ Excellent gate charge x  $R_{DS(on)}$  product(FOM)
- ◆ Very low on-resistance  $R_{DS(on)}$
- ◆ 150 °C operating temperature
- ◆ 100% UIS tested



### Application

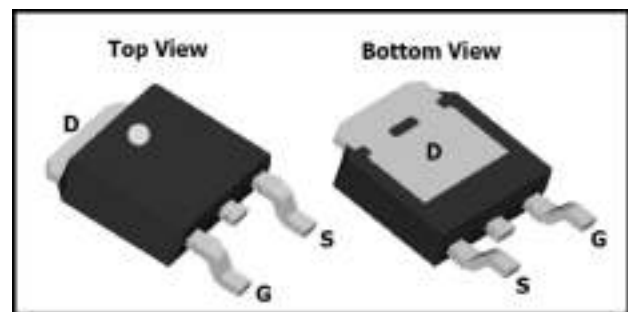
- ◆ Synchronous Rectification in DC/DC and AC/DC Converters
- ◆ Industrial and Motor Drive applications

### Schematic diagram



### Marking and pin assignment

#### TO-252-2L



### Ordering Information

Part Number	Storage Temperature	Package	Devices Per Reel
TCS1145_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	$V_{DS}$	100	V	
Gate-source voltage	$V_{GS}$	±20	V	
Continuous Drain Current	$I_D$	TC=25°C	45	A
		TC=70°C	36	
Pulsed Drain Current	$I_{DP}$	180	A	
Avalanche energy(L=0.5mH) <small>(note1)</small>	$E_{AS}$	200	mJ	
Power Dissipation	$P_D$	TC=25°C	85	W
		TC=70°C	45	
Operating junction Temperature range	$T_j$	-55—150	°C	