

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
-20V	27mΩ@-10V	-5A
	36mΩ@-2.5V	

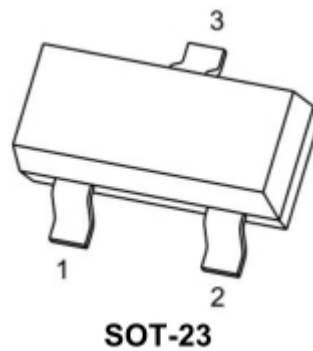
## Feature

- TrenchFET Power MOSFET
- Excellent  $R_{DS(on)}$  and Low Gate Charge
- ESD Protected:2KV

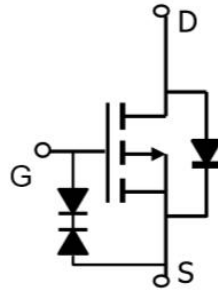
## Applications

- DC/DC Converter
- Load Switch for Portable Devices
- Battery Switch

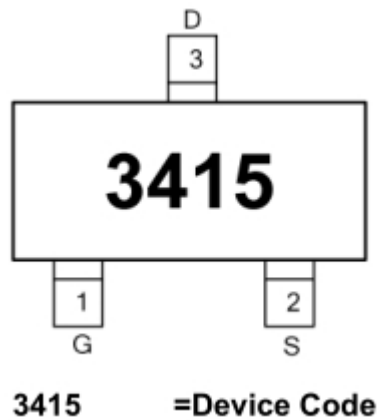
## Package



## Circuit diagram



## Marking



## Absolute maximum ratings

( $T_a=25^{\circ}\text{C}$  unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	-20	V
Gate-Source Voltage	$V_{GS}$	$\pm 10$	V
Continuous Drain Current	$I_D$	-5	A
Maximum Pulsed Drain to Source Diode Forward Current	$I_{DM}$	-25	A
Power Dissipation	$P_D$	1.5	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	83.3	$^{\circ}\text{C/W}$
Junction Temperature	$T_J$	150	
Storage Temperature	$T_{STG}$	-55~ +150	$^{\circ}\text{C}$

## Electrical characteristics

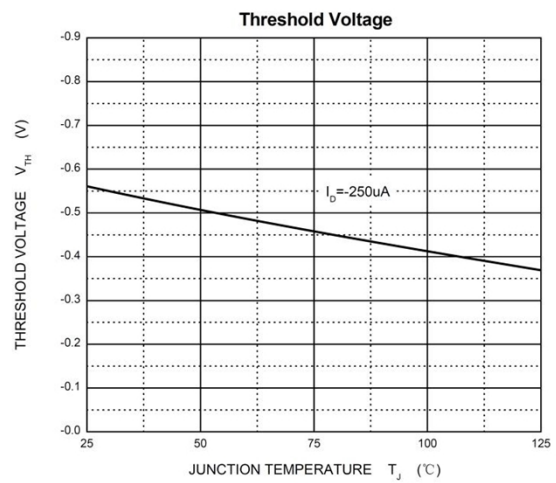
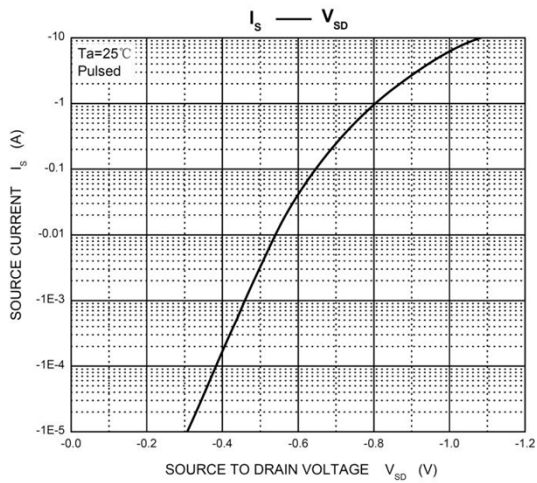
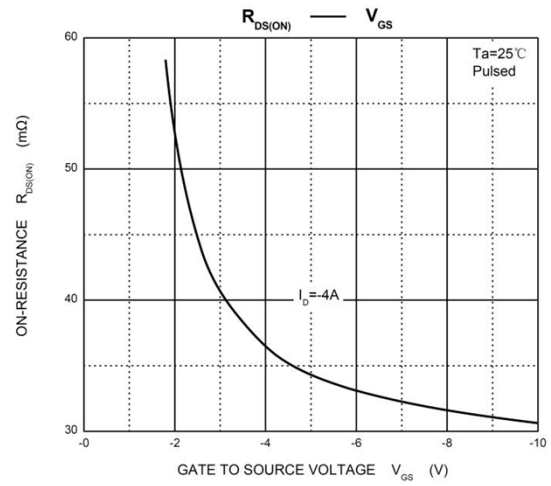
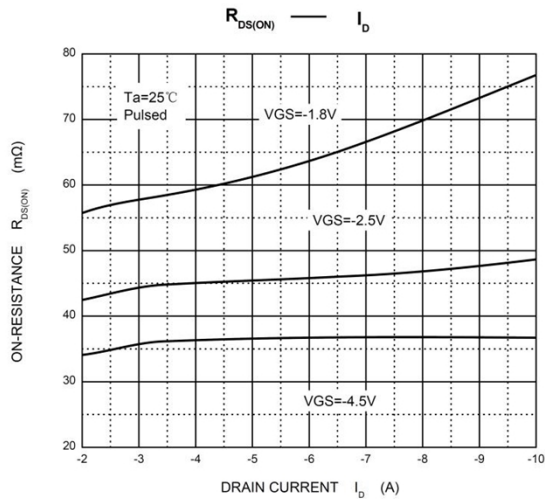
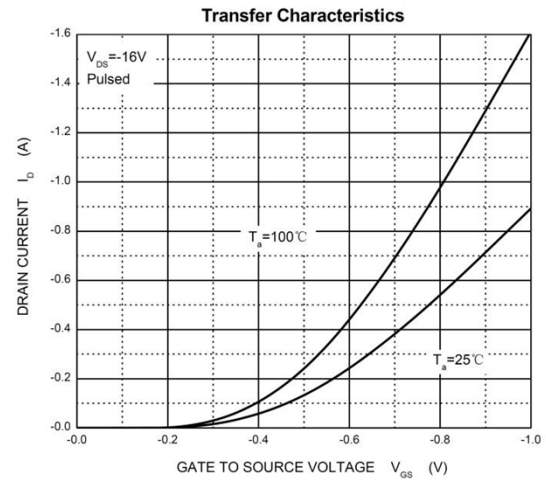
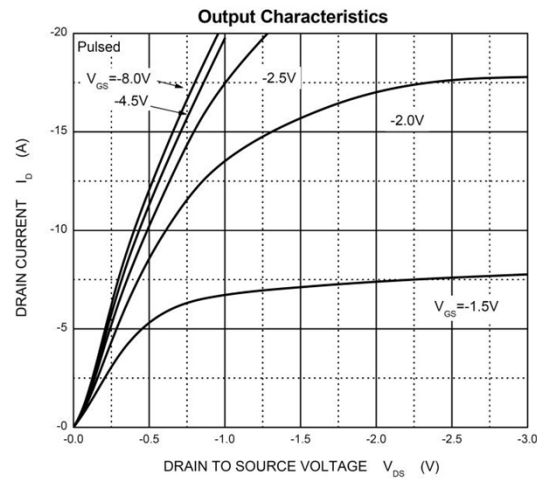
( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV (BR)DSS	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-20			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = -20V, V <sub>GS</sub> = 0V			-1	uA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±8V, V <sub>DS</sub> = 0V			±5	uA
Gate threshold voltage <sup>1)</sup>	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> = -250μA	-0.4	-0.65	-1	V
Drain-source on-resistance <sup>1)</sup>	R <sub>DS(on)</sub>	V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -4A		27	34	mΩ
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -3A		36	48	
Dynamic Characteristics <sup>2)</sup>						
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -10V, V <sub>GS</sub> =0V, f=1MHz		950		pF
Output capacitance	C <sub>oss</sub>			165		
Reverse transfer capacitance	C <sub>rss</sub>			120		
Switching Characteristics						
Turn-on Delay Time	T <sub>d(on)</sub>	V <sub>GS</sub> = -4.5V, V <sub>DS</sub> = -10V, R <sub>L</sub> =2.5Ω, R <sub>GEN</sub> =3Ω		12		nS
Turn-on Rise Time	T <sub>r</sub>			10		
Turn-Off Delay Time	T <sub>d(off)</sub>			19		
Turn-Off Fall Time	t <sub>f</sub>			25		
Source-Drain Diode Characteristics						
Diode Forward voltage	V <sub>DS</sub>	I <sub>S</sub> = -4A, V <sub>GS</sub> = 0V			-1.2	V

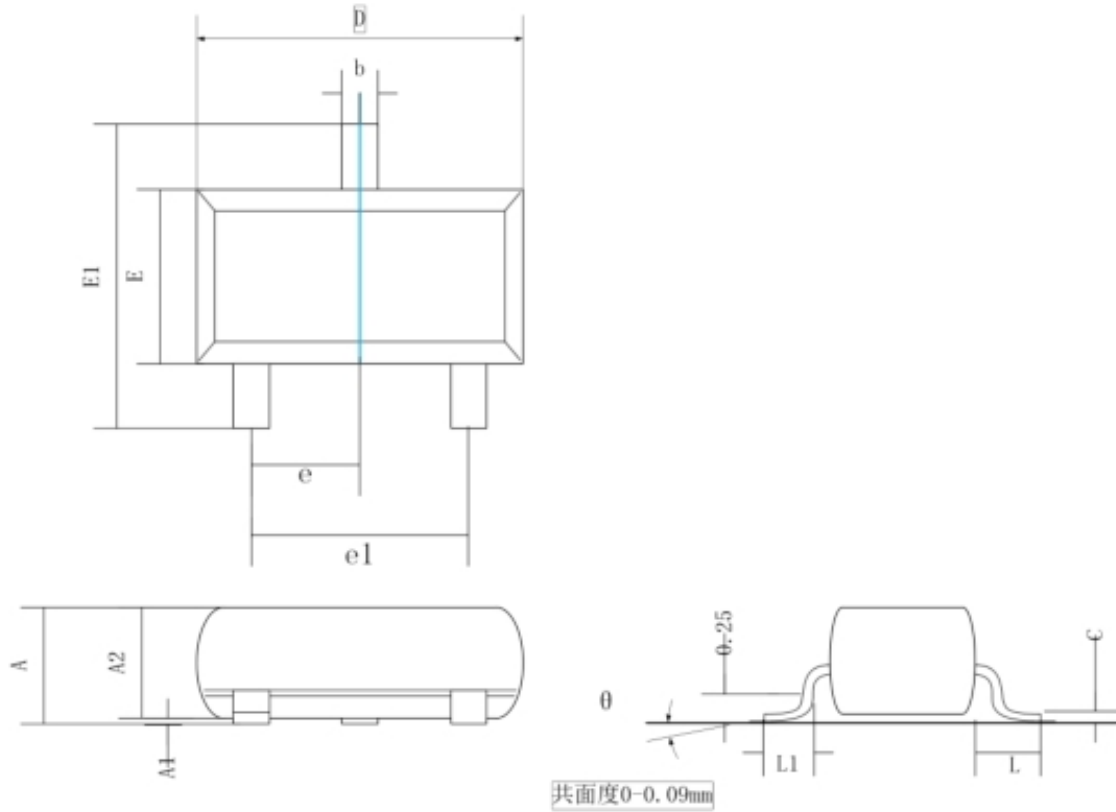
### Notes:

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Pulse Test : Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .

# Typical Characteristics



## SOT-23 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50
$\theta$	0°	8°