

## FEATURES

VDS	VGS	RDSon TYP	ID
-30V	12V	51mR@-10V	-4A
		60mR@-4V5	
		98mR@-2V5	

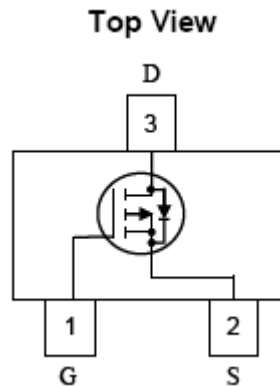
## DESCRIPTION

This device is particularly suited for low voltage application such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount package Excellent thermal and electrical capabilities.

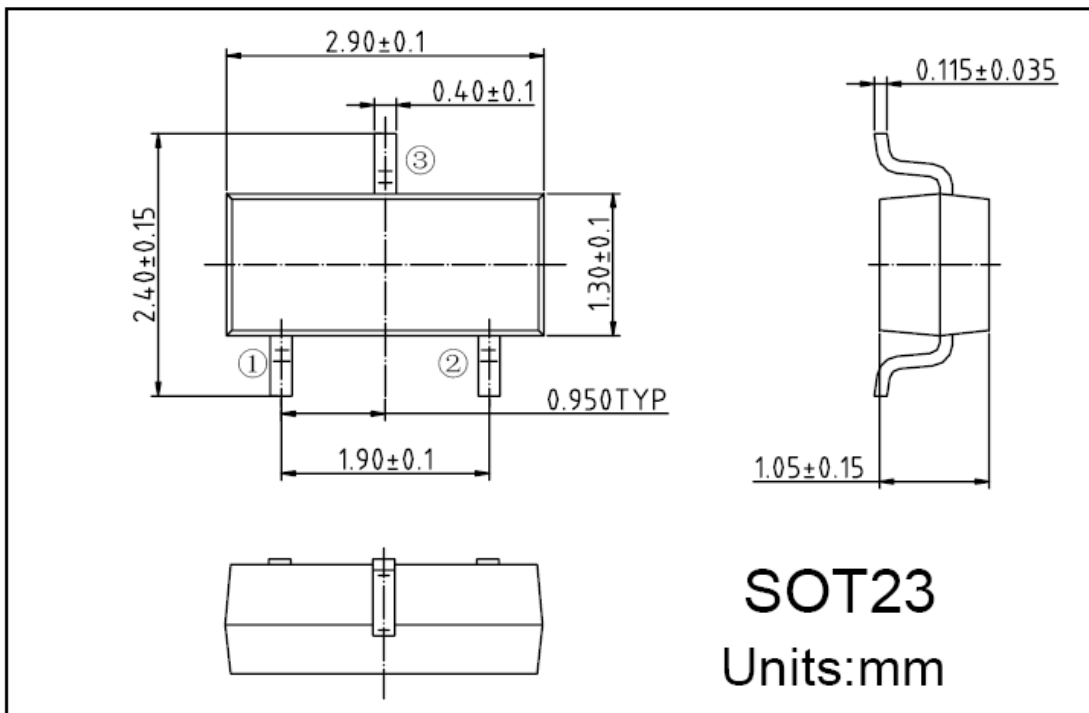
## APPLICATIONS

- Load Switch
- Portable Devices
- DCDC conversion

## Pin Configuration



## Packaging Information



**Absolute Maximum Ratings @TA=25°C unless otherwise noted**

Parameter	Symbol	Limit	Unit	
Drain-Source Voltage	V <sub>dss</sub>	-30	V	
Gate-Source Voltage	V <sub>gss</sub>	±12	V	
Drain Current (Note 1)	Continuous	I <sub>d</sub>	-4	A
	Pulsed	I <sub>dm</sub>	-30	A
Continuous Power Dissipation	P <sub>d</sub>	800	mW	
Operating and Storage Temperature Range	T <sub>j</sub> ,T <sub>stg</sub>	-55~150	°C	

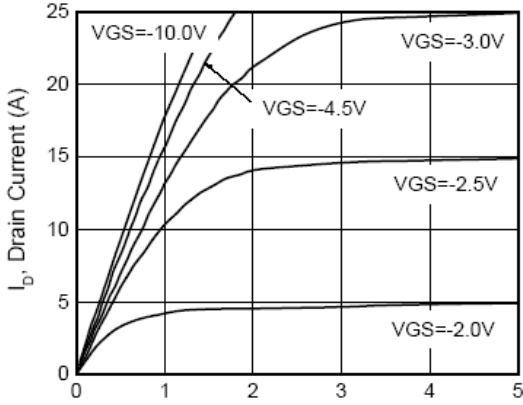
**Electrical Characteristics @TA=25°C unless otherwise noted**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>						
Zero Gate Voltage Drain Current	I <sub>dss</sub>	V <sub>gs</sub> =0V, V <sub>ds</sub> =-30 V	--	--	-1	uA
Gate - Body Leakage, Forward	I <sub>gssf</sub>	V <sub>gs</sub> =-12V	--	--	-100	nA
Gate-Body Leakage, Reverse	I <sub>gssr</sub>	V <sub>gs</sub> =12V	--	--	100	nA
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	V <sub>gs(th)</sub>	V <sub>ds</sub> =V <sub>gs</sub> ,I <sub>d</sub> =-250μA	-0.7	-1	-1.3	V
Static Drain-Source On-Resistance	R <sub>ds(on)</sub>	V <sub>gs</sub> =-10V,I <sub>d</sub> =-4.2A	--	51	55	mR
		V <sub>gs</sub> =-4.5V,I <sub>d</sub> =-4A	--	60	65	
		V <sub>gs</sub> =-2.5V,I <sub>d</sub> =-1A	--	98	120	
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>ds</sub> =-30V,V <sub>gs</sub> =0V f =200KHz	--	600	--	pF
Output Capacitance	C <sub>oss</sub>		--	85	--	
Reverse Transfer Capacitance	C <sub>rss</sub>		--	66	--	
<b>SWITCHING CHARACTERISTICS</b>						
Turn-On Delay Time	T <sub>d(on)</sub>	V <sub>ds</sub> =-15V,R <sub>l</sub> =3.6R, V <sub>gs</sub> =-10V,R <sub>gen</sub> =6R	--	6.5	--	ns
Rise Time	T <sub>r</sub>		--	3.5	--	
Turn-Off Delay Time	T <sub>d(off)</sub>		--	40	--	
Fall Time	T <sub>f</sub>		--	13	--	
<b>DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS</b>						
Drain-Source Diode Forward Voltage	V <sub>sd</sub>	I <sub>s</sub> =-1A,V <sub>gs</sub> =0V	--	-0.78	-1	V

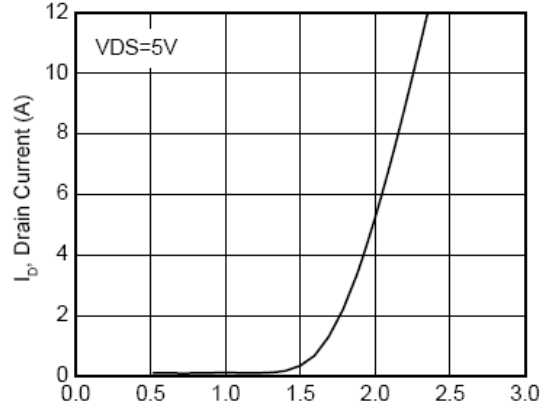
Notes :

- R<sub>θJA</sub>** is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins. **R<sub>θJC</sub>** is guaranteed by design while **R<sub>θCA</sub>** is determined by the user's board design.
- Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%**

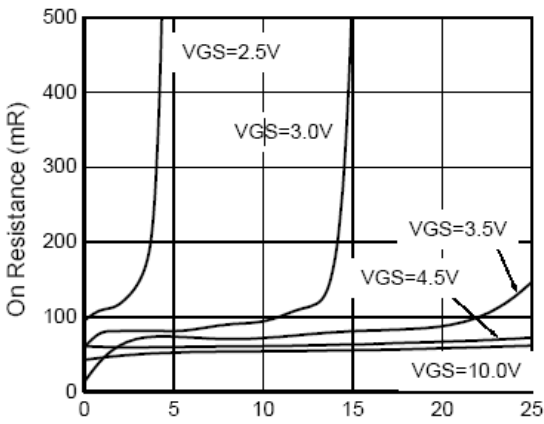
### P-channel Typical Performance Characteristics



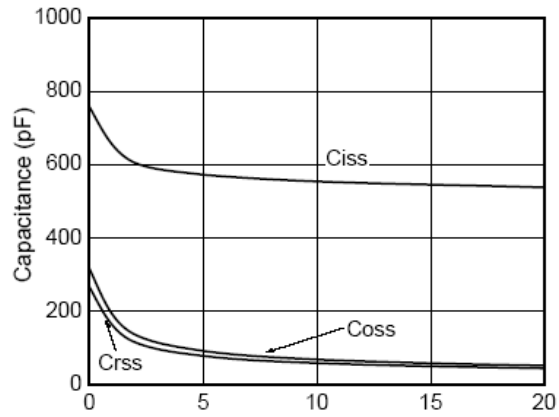
$V_{DS}$ , Drain-Source Voltage (V)  
Figure 1. Output Characteristics



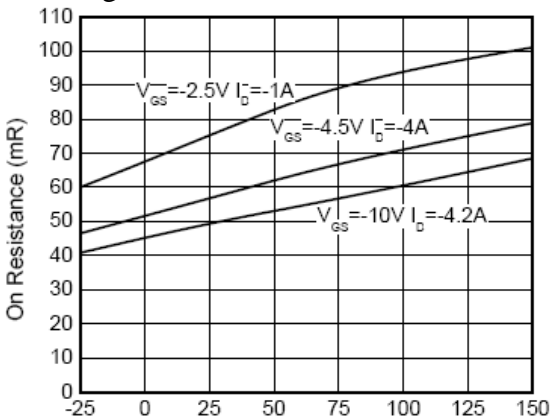
$V_{GS}$ , Gate-to-Source Voltage (V)  
Figure 2. Transfer Characteristics



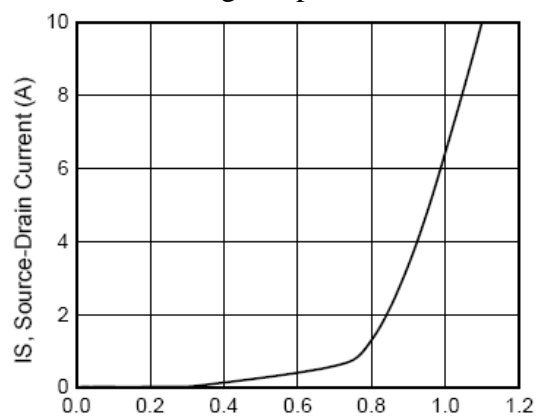
$I_D$ , Drain Current (A)  
Fig3. On Resistance vs. Drain Current



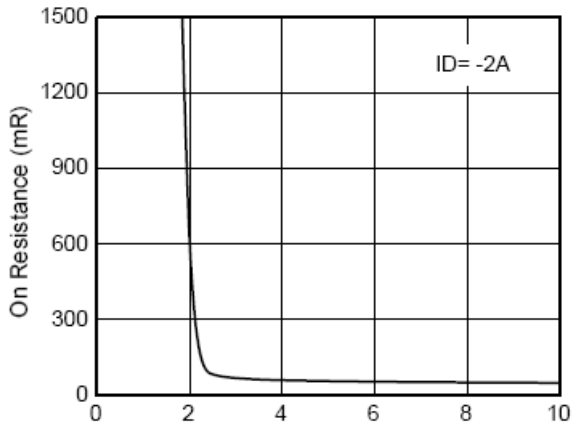
$V_{DS}$ , Drain-Source Voltage (V)  
Fig4. Capacitance



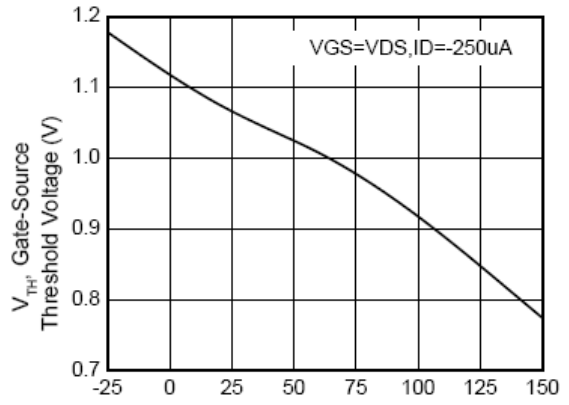
$T_j$ , Junction Temperature ( $^{\circ}C$ )  
Fig5. On resistance vs. Temperature



$V_{DS}$ , Drain-Source Voltage (V)  
Fig6. Diode Forward Characteristics



Vgs, Gate-to-Source Voltage (V)  
Fig7. On Resistance vs. G-S Voltage



Tj, Junction Temperature (°C)  
Fig8. Gate Threshold vs. Temperature