FEATURES

VDS	VGS	RDSon TYP	ID
-20V	8V	60mR@4V5	3A
		75mR@2V5	

APPLICATIONS

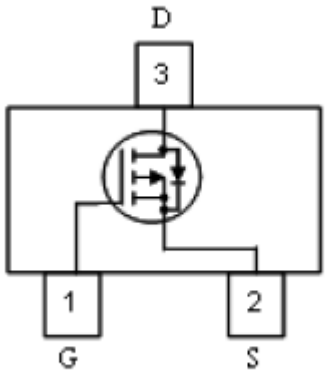
- **Load Switch**
- **Portable Devices**
- **DCDC conversion**

DESCRIPTION

This device is produced with high cell density DMOS trench technology, which is especially used to minimize on-state resistance. This device particularly suits low voltage applications 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.

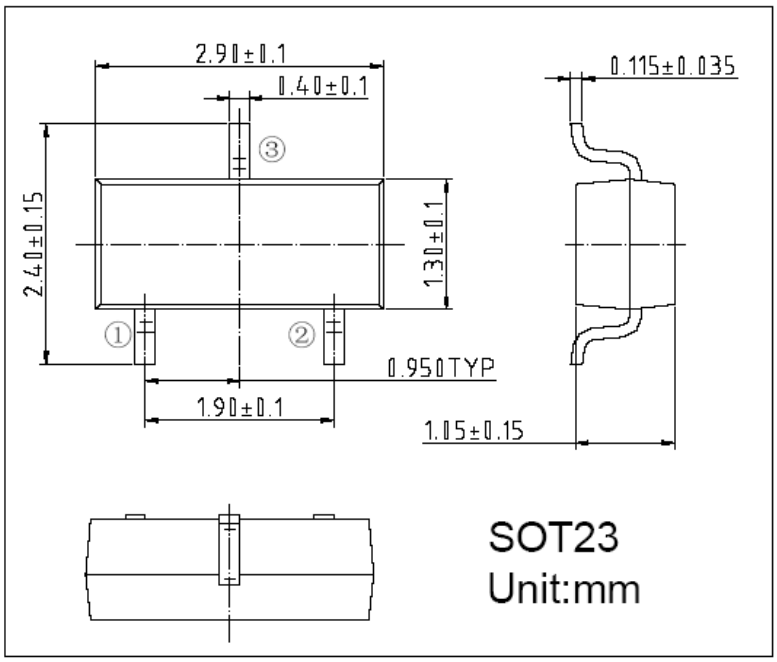
Pin Configuration

Top View



D: Drain; G: Gate; S: Source

Packaging Information



Absolute Maximum Ratings @TA=25℃ unless otherwise noted

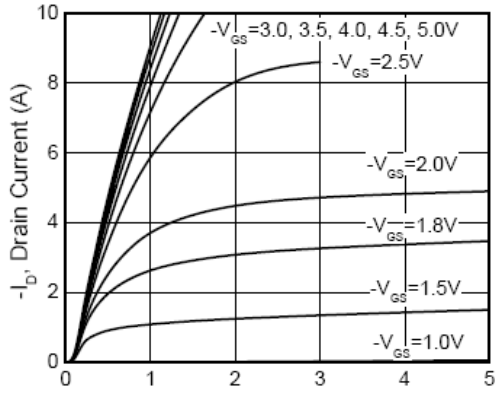
Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		Vdss	-20	V
Gate-Source Voltage		Vgss	±8	V
Drain Current (Continuous)		Id	-3	A
Drain Current (Pulse)		Idm	-20	A
Power Dissipation	25℃	Pd25	550	mW
	70℃	Pd70	350	
Operating Temperature/Storage Temperature		Tj/Tstg	-55~150	℃

Electrical Characteristics @TA=25℃ unless otherwise noted

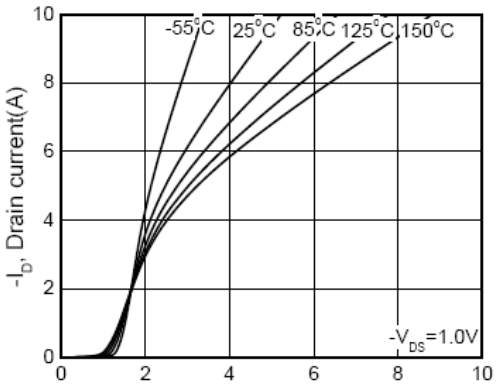
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	V(br)dss	Vgs = 0V, Id=-250uA	-20	--	--	V
Drain Cut-off Current	Idss	Vds = -20 V , Vgs = 0V	--	--	-1	uA
Gate-Source Leakage Current	Igss	Vgs = ±8 V , Vds = 0V	--	--	±10	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	Vgs(th)	Id=-250uA,Vds=Vgs	-0.5	-0.75	-1.5	V
Drain-Source On-state Resistance	Rds(on)	Vgs=-4.5V,Id=-2.8A	--	60	130	mR
		Vgs=-2.5V,Id=-2A	--	75	200	mR
Forward Transconductance	Gfs	Vds=-5V,Id=-2.8A	--	6.5	--	S
DYNAMIC CHARACTERISTICS						
Input Capacitance	Ciss	Vds=-6V,Vgs=0V f =1MHz	--	415	--	pF
Output Capacitance	Coss		--	223	--	pF
Feedback Capacitance	Crss		--	87	--	pF
SWITCHING CHARACTERISTICS						
Turn-on Delay Time	Td(on)	Vdd=-6V,Rl=6R,Id=-1.0A, Vgen=-4.5V,Rg=6R	--	13	25	ns
Turn-off Delay Time	Td(off)		--	42	70	ns
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Drain-Source Diode Forward Voltage	Vsd	Is=-1.6A,Vgs=0V	-0.5	--	-1.2	V

Notes:
1. Pulse width limited by maximum junction temperature.
2. Pulse test: PW≤300us, duty cycle≤2%.
3. For design AID only, not subject to production testing.
4. Switching time is essentially independent of operating temperature.

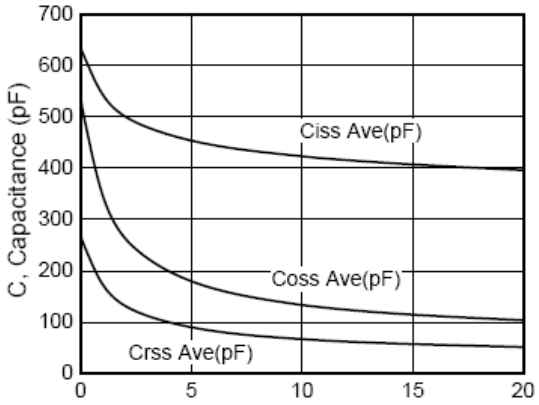
Typical Characteristics



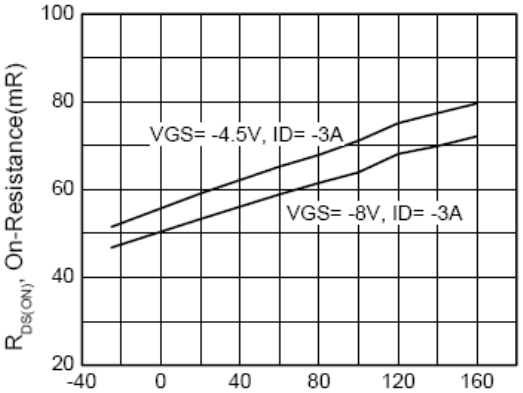
-Vds, Drain-Source Voltage (V)
Figure 1. Output Characteristics



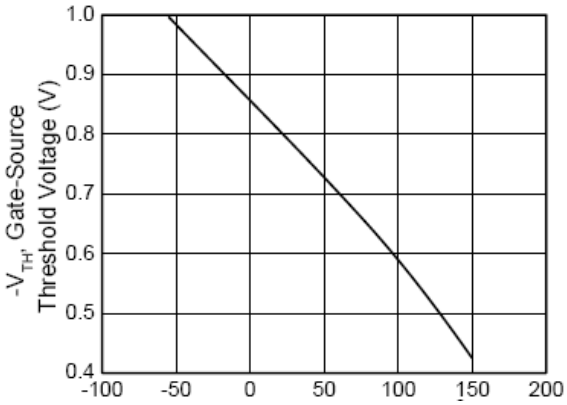
-Vgs, Gate-to-Source Voltage(V)
Figure 2. Transfer Characteristics



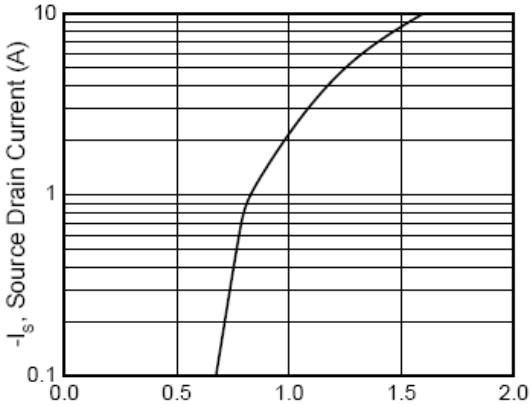
-Vds, Drain-to-Source Voltage (V)
Figure 3. Capacitance



Tj, Junction Temperature(℃)
Fig4.On-Resistance Temperature Coefficient



Tj, Junction Temperature (℃)
Figure 5. Gate Thershold Vs. Temperature



-Vsd,Body Diode Forward Voltage(V)
Fig6.Body Diode Forward Voltage Vs. Source Curre