

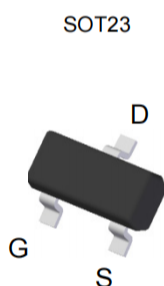
Features

- 20V, 5A
 $R_{DS(ON)} < 22m\Omega @ V_{GS} = 4.5V$
 $R_{DS(ON)} < 36m\Omega @ V_{GS} = 2.5V$
- Advanced Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge
- Lead free product is acquired
- ESD Rating: HBM 2KV

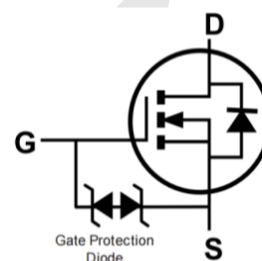
Application

- Load Switch
- PWM Application
- Power management

Package and Pin Configuration



Circuit diagram



Absolute Maximum Ratings ($T_A = 25^\circ C$ unless otherwise specified)

Symbol	Parameter	Max.	Units
V_{DSS}	Drain-Source Voltage	20	V
V_{GSS}	Gate-Source Voltage	± 10	V
I_D	Continuous Drain Current	$T_A = 25^\circ C$	5
		$T_A = 100^\circ C$	3.3
I_{DM}	Pulsed Drain Current ^{note1}	20	A
P_D	Power Dissipation	$T_A = 25^\circ C$	0.9
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	139	$^\circ C/W$
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to +150	$^\circ C$

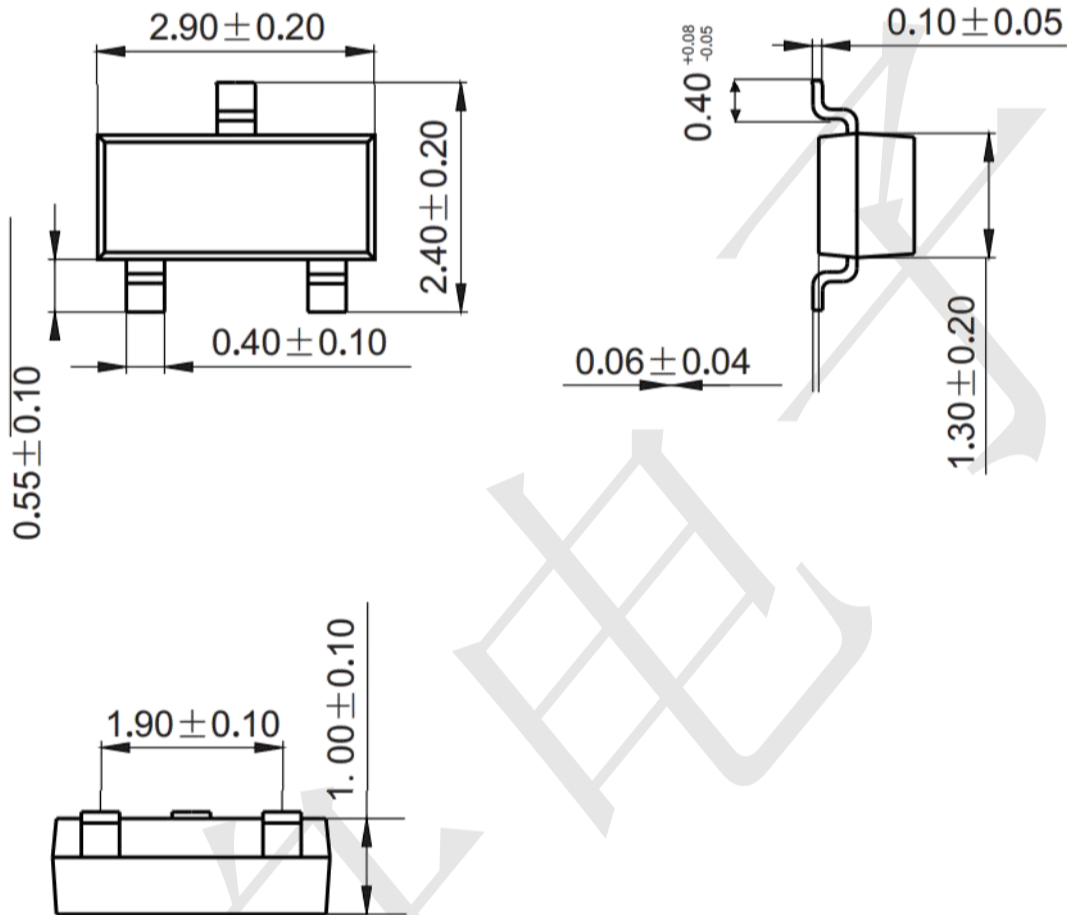
Electrical Characteristics ($T_J=25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	20	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=20V, V_{GS}=0V,$	-	-	1	μA
I_{GSS}	Gate to Body Leakage Current	$V_{DS}=0V, V_{GS}= \pm 10V$	-	-	± 10	μA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	0.4	0.7	1	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note2	$V_{GS}=4.5V, I_D=5A$	-	17	22	m Ω
		$V_{GS}=2.5V, I_D=3A$	-	26	36	
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS}=10V, V_{GS}=0V,$ $f=1.0MHz$	-	545	-	pF
C_{oss}	Output Capacitance		-	103	-	pF
C_{rss}	Reverse Transfer Capacitance		-	90	-	pF
Q_g	Total Gate Charge	$V_{DS}=10V, I_D=5A,$ $V_{GS}=4.5V$	-	8	-	nC
Q_{gs}	Gate-Source Charge		-	2.5	-	nC
Q_{gd}	Gate-Drain("Miller") Charge		-	3	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	$V_{DS}=10V, R_L=1.5\Omega,$ $R_{GEN}=3\Omega, V_{GS}=5V$	-	0.5	-	ns
t_r	Turn-on Rise Time		-	1	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	12	-	ns
t_f	Turn-off Fall Time		-	4	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	5	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	20	A
V_{SD}	Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=5A$	-	-	1.2	V



Package Outline Dimensions (unit: mm)

SOT-23



Mounting Pad Layout (unit: mm)

