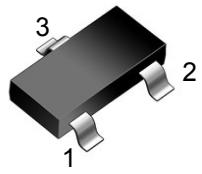
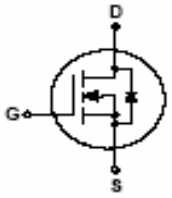
SOT-23





MARKING: S4

Features

Advanced trench process technology
High density cell design for Ultra Low On-Resistance
Halogen free and RoHS compliant

Mechanical Data

SOT-23 Small Outline Plastic Package
Epoxy UL: 94V-0

Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SOT-23	Tape/Reel,7" reel	3000	EIA-481-1

Maximum Ratings & Thermal Characteristics

(Ratings at 25℃ ambient temperature unless otherwise specified.)

Symbol	Parameter		Rating	Unit
V_{DS}	Drain-Source Breakdown Voltage		30	V
V_{GS}	Gate-Source Voltage		±20	V
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	°C
I_S	Diode Continuous Forward Current	Tc=25°C	3.3	A
I_{DM}	Pulse Drain Current Tested	Tc=25°C	13	A
I_D	Continuous Drain Current@GS=10V	Tc=25°C	3.3	A
P_D	Maximum Power Dissipation	Tc=25°C	1	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient((*1 in2 Pad of 2-oz Copper), Max.)		125	°C/W

Electrical Characteristics

(Ratings at 25℃ ambient temperature unless otherwise specified).

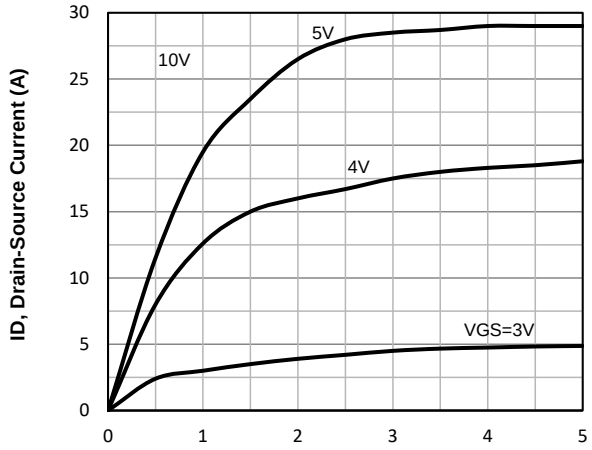
Symbol	Parameter	Condition	Min	Typ	Max	Unit
$BV_{(BR)DSS}$	Drain-Source Breakdown Voltage	VGS=0V，ID=250μA	30	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	VDS=30V，VGS=0V	--	--	1	uA
I_{GSS}	Gate-Body Leakage Current	VGS=±20V，VDS=0V	--	--	±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	VDS=VGS，ID=250μA	1	1.5	2.2	V
$R_{DS(on)}$	Drain-Source On-State Resistance	VGS=10V，ID=3A	--	32	60	mΩ
		VGS=4.5V，ID=2A	--	48	80	

Electrical Characteristics

（Ratings at 25℃ ambient temperature unless otherwise specified).

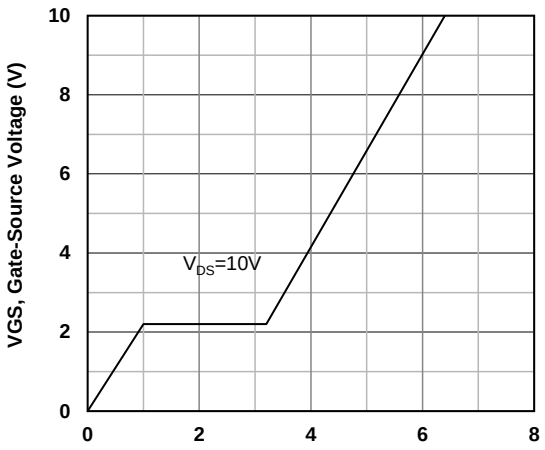
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Dynamic Electrical Characteristics						
C_{ISS}	Input Capacitance	VDS=15V，VGS=0V， f=1MHz	--	390	--	pF
C_{OSS}	Output Capacitance		--	67	--	pF
C_{RSS}	Reverse Transfer Capacitance		--	41	--	pF
Switching Characteristics						
Q_g	Total Gate Charge	VDS=15V，ID=3A， VGS=10V	--	4.2	--	nC
Q_{gs}	Gate Source Charge		--	1	--	nC
Q_{gd}	Gate Drain Charge		--	1.1	--	nC
$t_{d(on)}$	Turn-on Delay Time	VDD=15V，RL=3.6Ω，VGS=4.5V，RG=6Ω	--	11	--	nS
t_r	Turn-on Rise Time		--	48	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	14	--	nS
t_f	Turn-Off Fall Time		--	9	--	nS
Source- Drain Diode Characteristics						
V_{SD}	Forward on voltage	Tj=25℃，Is=3A，	--	--	1.2	V

Ratings and Characteristic Curves



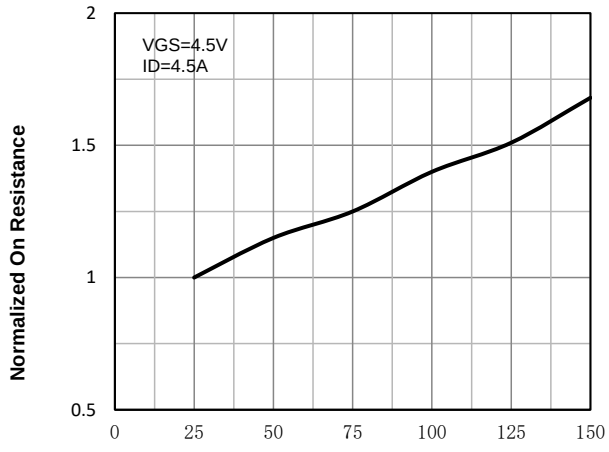
VDS, Drain -Source Voltage (V)

Fig1. Typical Output Characteristics



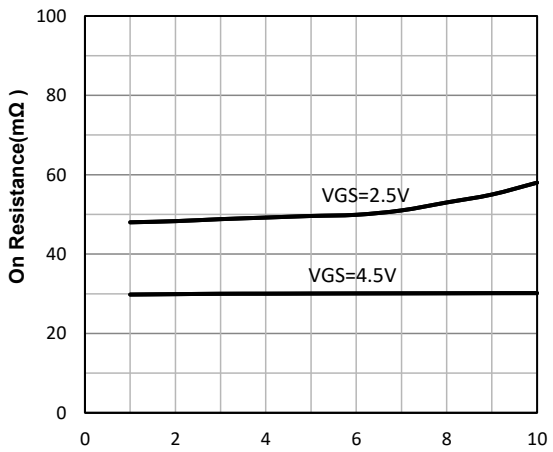
Qg -Total Gate Charge (nC)

Fig2. Typical Gate Charge Vs.Gate-Source Voltage



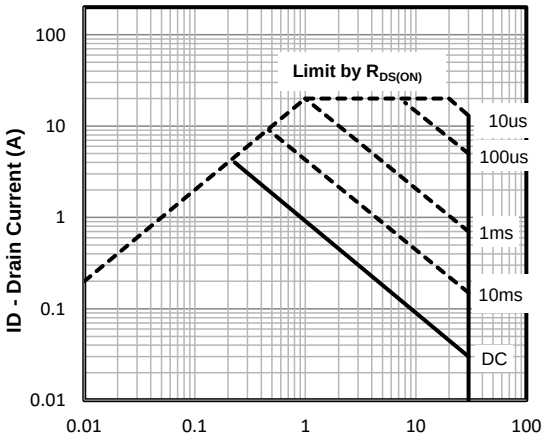
Tj - Junction Temperature (°C)

Fig3. Normalized On-Resistance Vs. Temperature

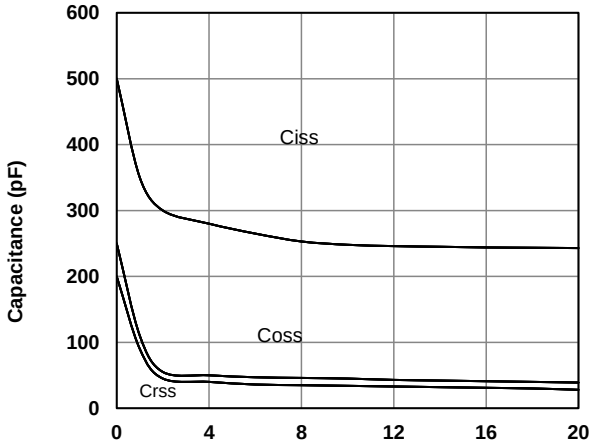


ID, Drain-Source Current (A)

Fig4. On-Resistance Vs. Drain-Source Current

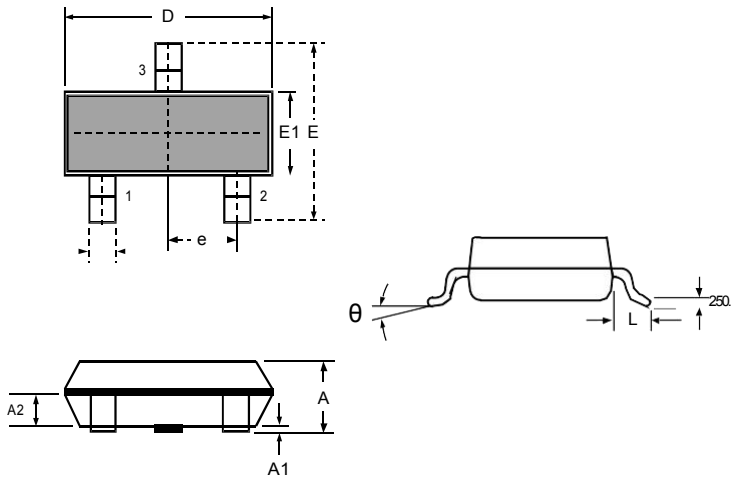


VDS, Drain -Source Voltage (V)
Fig5. Maximum Safe Operating Area



VDS , Drain-Source Voltage (V)
Fig6 Typical Capacitance Vs.Drain-Source Voltage

Package Outline Dimensions: SOT-23



DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
D	2.800	3.000	0.110	0.118
b	0.300	0.500	0.012	0.020
E	2.250	2.550	0.089	0.100
E1	1.200	1.400	0.047	0.055
e	0.950 BSC		0.037 BSC	
L	0.300	0.500	0.012	0.020
θ	0	8°	0	8°