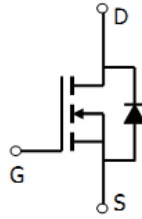
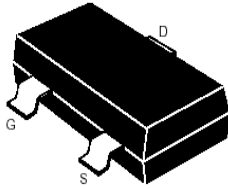


SOT-23

Features

- Advanced trench process technology
- High Density Cell Design For
Ultra Low On-Resistance
- High Power and Current handling capability

MAXIMUM RANTINGS

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	60	V
Gate-Source Voltage	V_{GSS}	± 16	
Drain Current (Note 1)	I_D	3.8	A
Power Dissipation (Note 1)	P_D	1560	mW
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^{\circ}C$

Note: 1. Mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch, for each single die.

Electrical Characteristics

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ $T_J = 25^{\circ}C$ (unless otherwise stated)						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	60	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current($T_A=25^{\circ}C$)	$V_{DS}=60V, V_{GS}=0V$	--	--	1	μA
	Zero Gate Voltage Drain Current($T_A=125^{\circ}C$)	$V_{DS}=48V, V_{GS}=0V$	--	--	100	μA
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 16V, V_{DS}=0V$	--	--	± 100	nA
$V_{GS(TH)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	2.0	3.0	V
$R_{DS(ON)}$	Drain-Source On-State Resistance②	$V_{GS}=10V, I_D=3A$	--	57	70	m Ω
$R_{DS(ON)}$	Drain-Source On-State Resistance②	$V_{GS}=4.5V, I_D=2A$	--	66	90	m Ω
Dynamic Electrical Characteristics @ $T_J = 25^{\circ}C$ (unless otherwise stated)						
C_{iss}	Input Capacitance	$V_{DS}=30V, V_{GS}=0V,$ $f=1MHz$	--	362	--	pF
C_{oss}	Output Capacitance		--	23	--	pF
C_{rss}	Reverse Transfer Capacitance		--	16	--	pF
R_g	Gate Resistance	$f=1MHz$		9		Ω
Q_g	Total Gate Charge	$V_{DS}=30V$ $I_D=4A,$ $V_{GS}=10V$	--	6.9	--	nC
Q_{gs}	Gate Source Charge		--	0.9	--	nC
Q_d	Gate Drain Charge		--	1.8	--	nC

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Switching Characteristics @ T_J = 25°C (unless otherwise stated)						
t _{d(on)}	Turn on Delay Time	V _{DD} =30V, I _D =1A, R _G =3.3Ω, V _{GS} =10V	--	3.4	--	ns
t _r	Turn on Rise Time		--	5.8	--	ns
t _{d(off)}	Turn Off Delay Time		--	21	--	ns
t _f	Turn Off Fall Time		--	4.6	--	ns
Source Drain Diode Characteristics @ T_J = 25°C (unless otherwise stated)						
I _{SD}	Source drain current(Body Diode)	T _A =25°C	--	--	2	A
V _{SD}	Forward on voltage②	T _J =25°C, I _{SD} =2A, V _{GS} =0V	--	0.79	1.2	V

Notes: ① Pulse width limited by maximum allowable junction temperature

②Pulse test ; Pulse width≤300μs, duty cycle≤2%.

Typical Characteristics

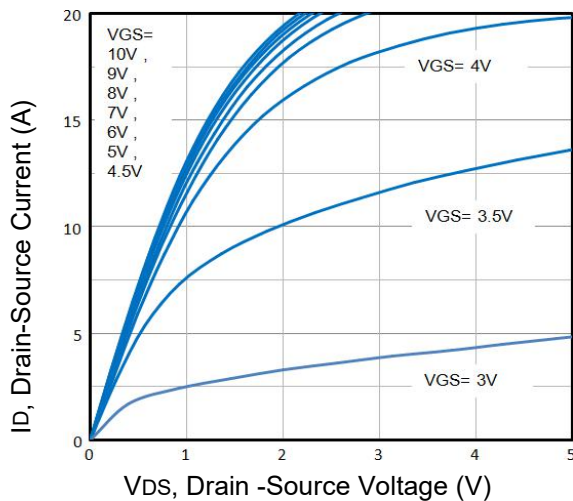


Fig1. Typical Output Characteristics

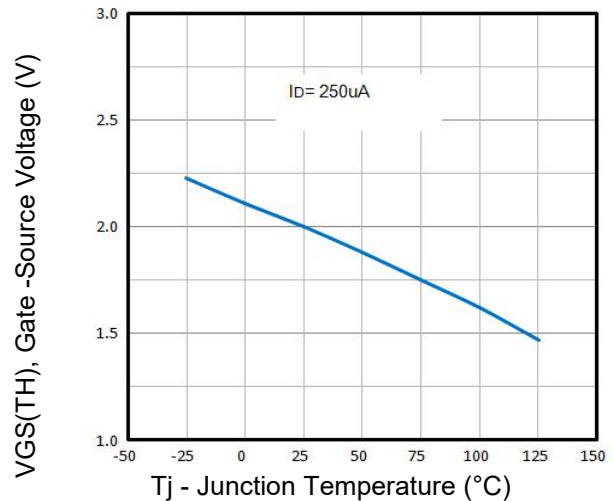


Fig2. VGS(TH) Voltage Vs. Temperature

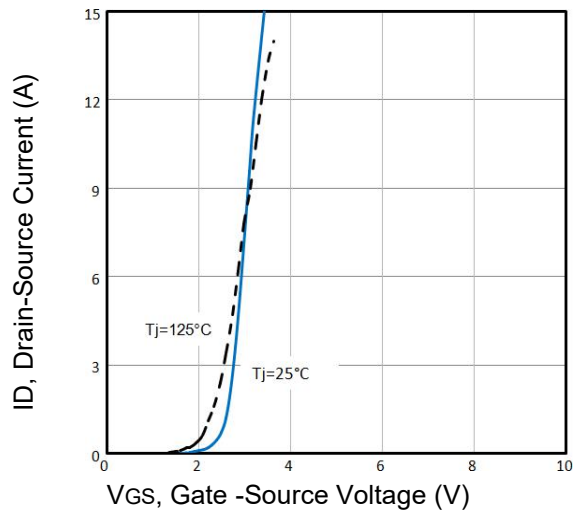


Fig3. Typical Transfer Characteristics

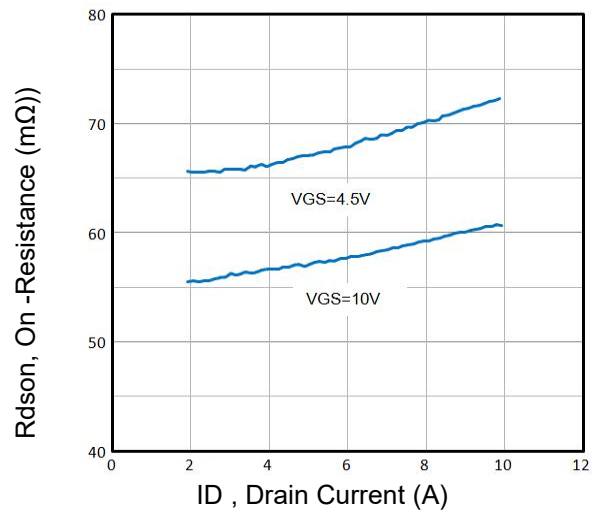


Fig4. On-Resistance vs. Drain Current and Gate

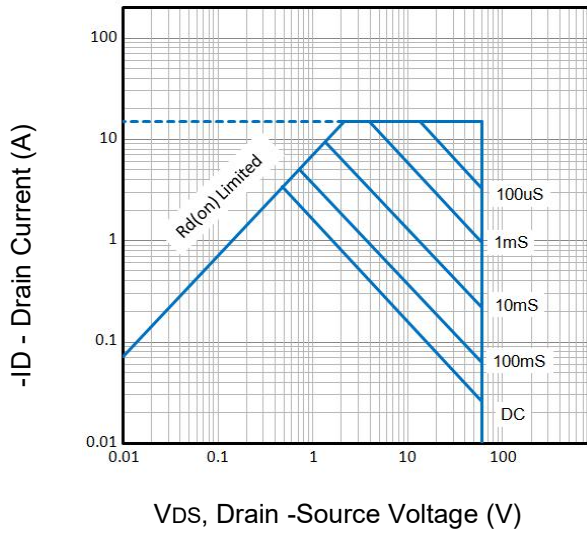


Fig5. Maximum Safe Operating Area

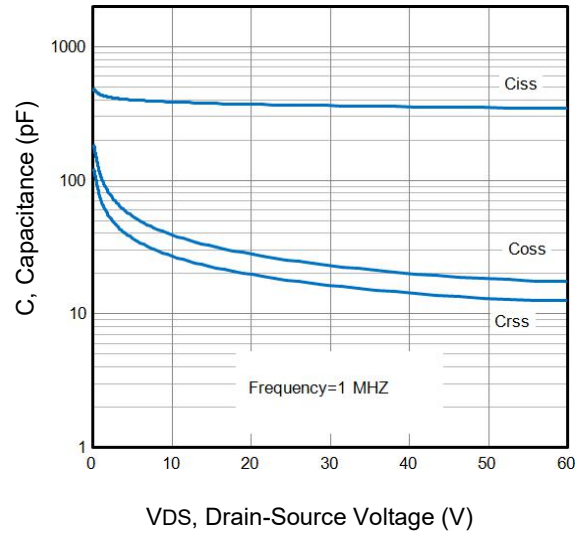
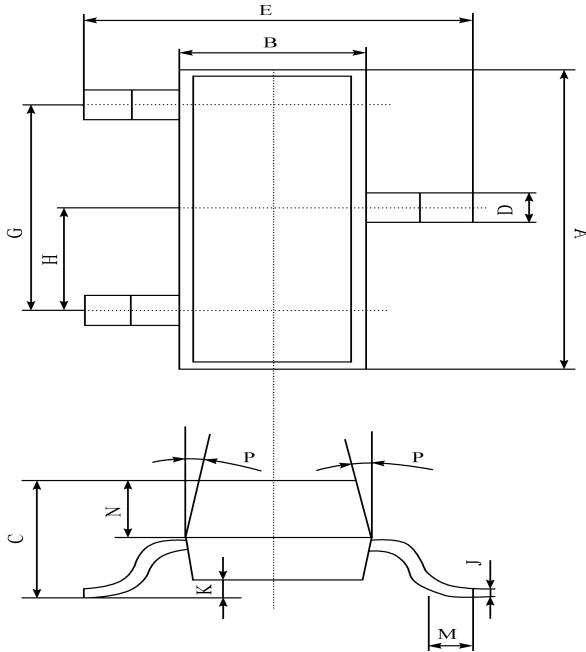


Fig6. Typical Capacitance Vs. Drain-Source Voltage

SOT-23 PACKAGE OUTLINE Plastic surface mounted package



SOT-23	
A	2.90 ± 0.10
B	1.30 ± 0.10
C	1.00 ± 0.10
D	0.40 ± 0.10
E	2.40 ± 0.20
G	1.90 ± 0.10
H	0.95 ± 0.05
J	0.13 ± 0.05
K	0.00-0.10
M	≥ 0.2
N	0.60 ± 0.10
P	7 ± 2°

(UNIT): mm