

-100V/-5A P-Channel MOSFET

Features

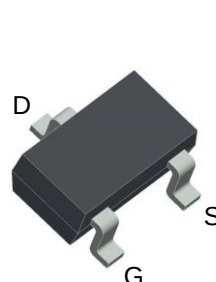
- Split gate trench MOSFET technology
- Low $R_{DS(on)}$ & FOM
- Extremely low switching loss
- Excellent stability and uniformity

Application

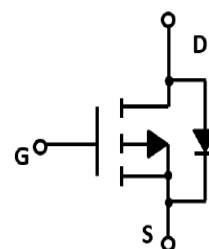
- Power management
- Portable equipment

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-100V	200mΩ@-10V	-5A
	250mΩ@-4.5V	

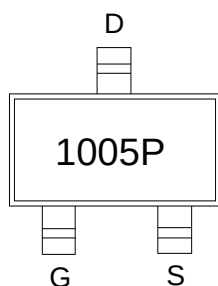


SOT-23-3L top view



Schematic diagram

Marking Information



- The "1005P" in the printed word represents the product model, which is fixed and unchanged.

印字中的“1005P”代表产品型号，为固定不变。

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)			
V_{DS}	Drain-Source Breakdown Voltage	-100	V
V_{GS}	Gate-Source Voltage	±20	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-50 to 155	°C
I_S	Diode Continuous Forward Current	Tc=25°C -5	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	Tc=25°C	-28	A
I_D	Continuous Drain Current	Tc=25°C	-5	A
P_D	Maximum Power Dissipation	Tc=25°C	1.8	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		315	°C/W

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	VGS=0V, ID=-250μA	-100	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=-100V, VGS=0V	--	--	-1.0	uA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=-250μA	-1.0	-1.8	-3.0	V
RDS(on)	Drain-Source On-State Resistance	VGS=-10V, ID=-8A	--	155	200	mΩ
		VGS=-4.5V, ID=-6A	--	170	250	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
CISS	Input Capacitance	VDS=-50V, VGS=0V, f=1MHz	--	1488	--	pF
COSS	Output Capacitance		--	39	--	pF
CRSS	Reverse Transfer Capacitance		--	30	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=-50V, ID=-6A, VGS=-10V	--	26.5	--	nC
Qgs	Gate Source Charge		--	6	--	nC
Qgd	Gate Drain Charge		--	4	--	nC
td(on)	Turn-on Delay Time	VDS=-50V, ID=-6A, VGS=-10V, RG=4.5Ω	--	14	--	nS
tr	Turn-on Rise Time		--	45	--	nS
td(off)	Turn-Off Delay Time		--	227	--	nS
tf	Turn-Off Fall Time		--	93	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	Tj=25℃, Is=-8A,	--	-0.8	-1.2	V

Typical Operating Characteristics

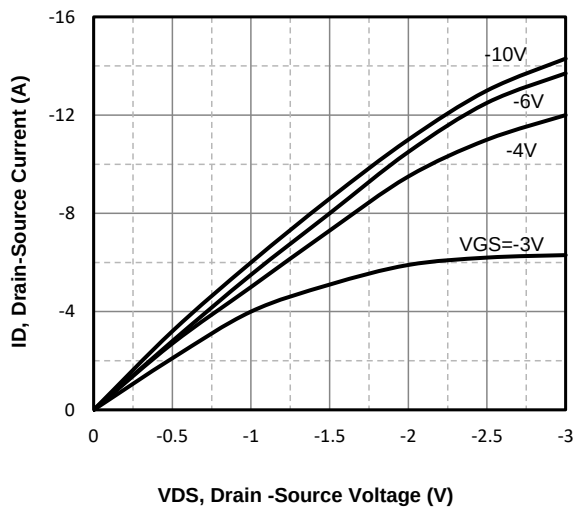


Fig1. Typical Output Characteristics

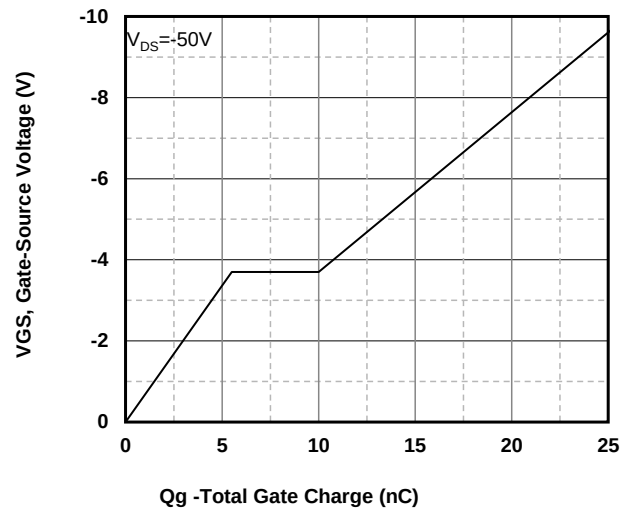


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

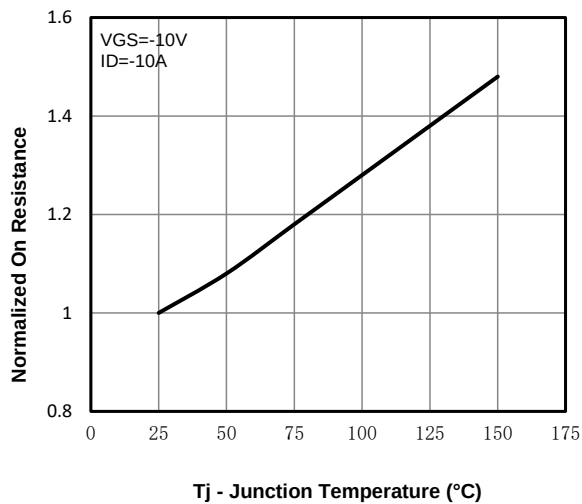


Fig3. Normalized On-Resistance Vs. Temperature

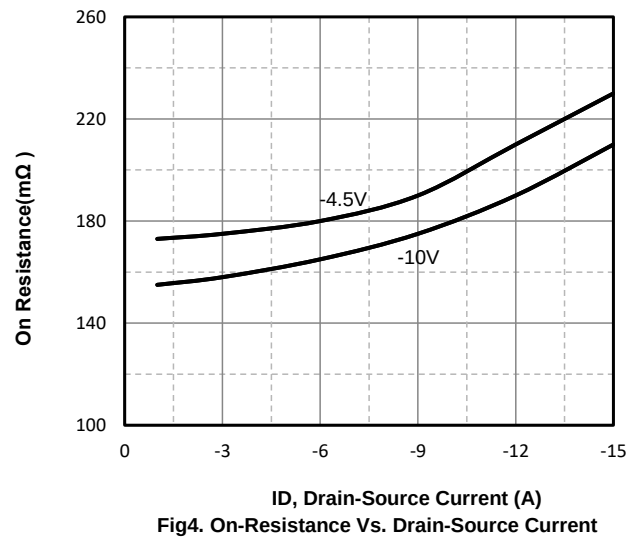


Fig4. On-Resistance Vs. Drain-Source Current

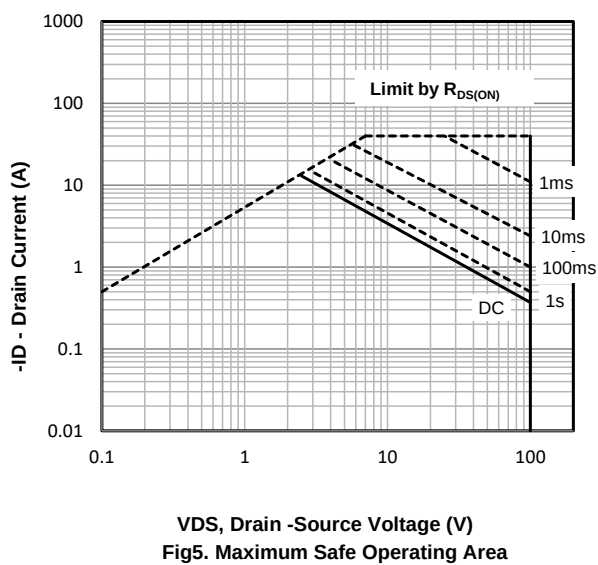


Fig5. Maximum Safe Operating Area

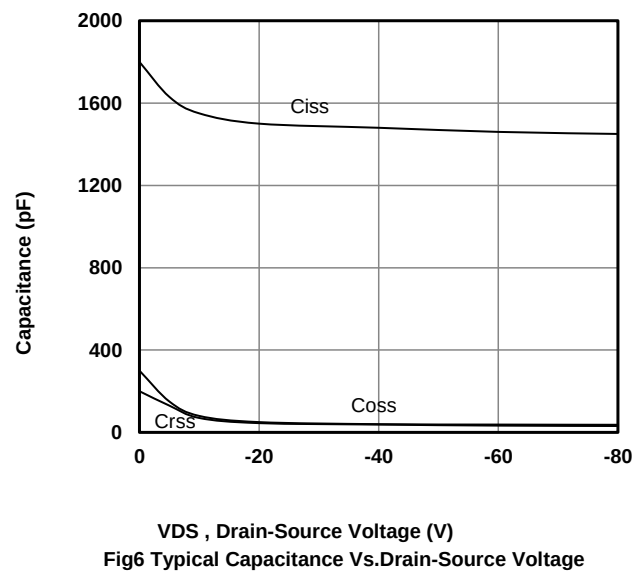
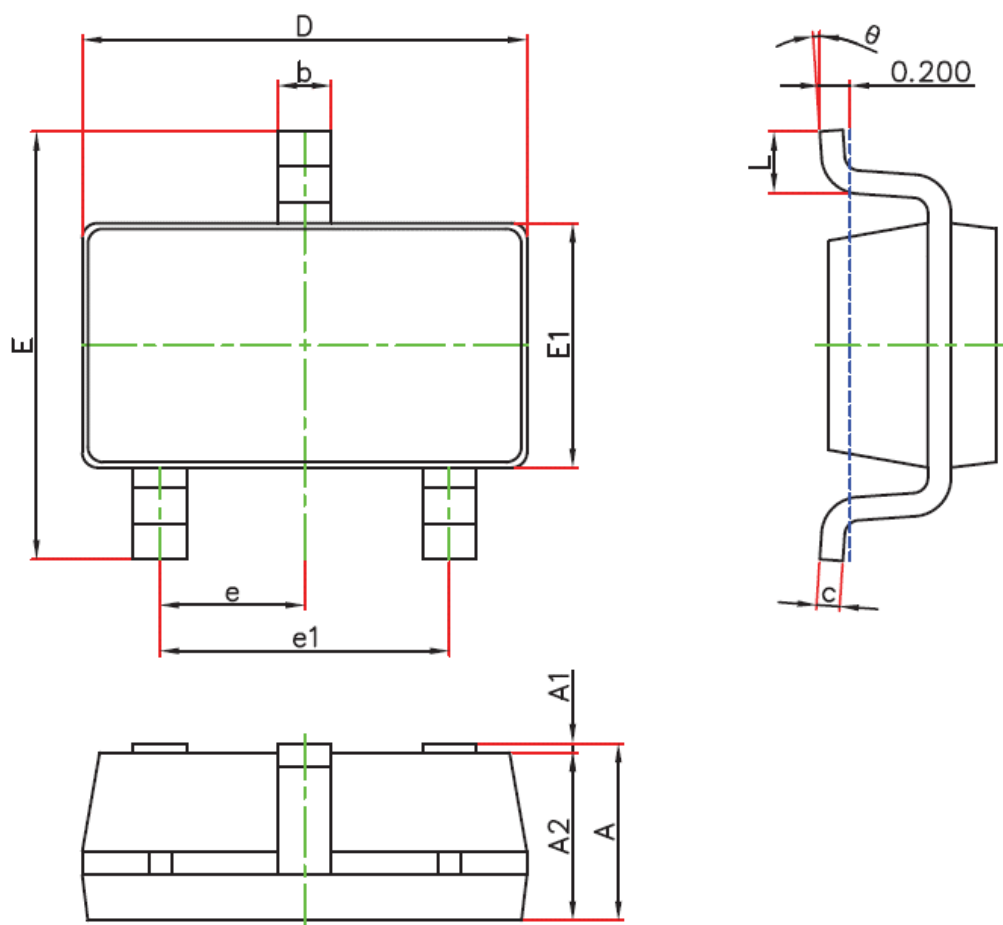


Fig6 Typical Capacitance Vs. Drain-Source Voltage

SOT-23-3L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°