Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	25mΩ@-10V	-6A
	36mΩ@-4.5V	

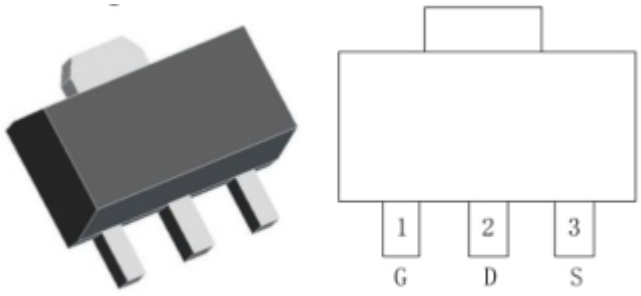
Feature

- Low On-Resistance
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage

Application

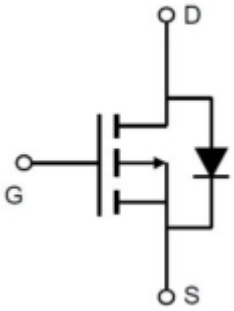
- PWM application
- Load switch
- Battery charge in cellular handset

Package

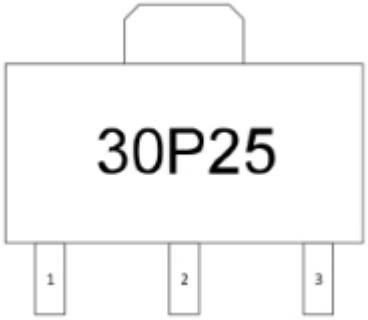


SOT-89-3L

Circuit diagram



Marking



Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-source Voltage	V_{DS}	-30	V
Gate-source Voltage	V_{GS}	±20	V
Drain Current	I_D	-6	A
Pulsed Drain Current	I_{DM}	-24	A
Total Power Dissipation @ T_C=25℃	P_D	1.5	W
Thermal Resistance Junction-to-Case @ Steady State	$R_{\theta JC}$	83.3	℃
Junction and Storage Temperature Range	T_J, T_{STG}	-55~ +150	℃

Electrical characteristics

(T_A=25℃, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-30V, V_{GS} = 0V			-1.0	uA
Gate-Source Leakage	I_{GSS}	V_{GS} =±20V, V_{DS} =0V			±100	uA
Gate-Source Threshold Voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1.0	-1.5	-2.5	V
Drain-Source On-Resistance[1]	$R_{DS(on)}$	V_{GS} =-10V, I_D =-4A		25	32	mΩ
		V_{GS} =-4.5V, I_D =-2A		36	45	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		870		pF
Output Capacitance	C_{oss}			130		
Reverse Transfer Capacitance	C_{rss}			93		
Total Gate Charge	Q_g	V_{DS}=-15V , I_D=-5A, V_{GS}=-4.5V,		7.8		nC
Gate-Source Charge	Q_{gs}			2.7		
Gate-Drain Charge	Q_{gd}			2.8		
Switching Characteristics						
Turn-on Rise Time	$T_{d(on)}$	V_{DS} =-15V, I_D=-1A, V_{GS}=-10V, R_G=6Ω		6.5		nS
Turn-off Delay Time	T_r			8.8		
Turn-off Fall Time	$T_{d(off)}$			73		
Turn-On Delay Time	T_f			44		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	I_{SD}=-1A,V_{GS}=0V		0.75	-1	V

Typical Characteristics

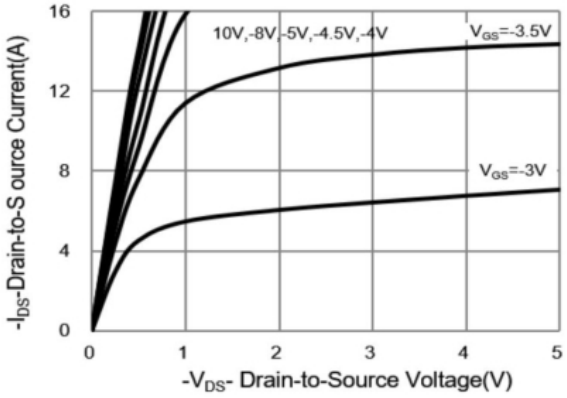


Fig.1 On-Region Characteristics

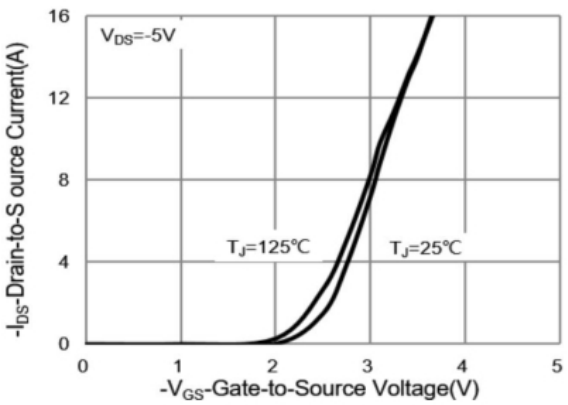


Fig.2 Transfer Characteristics

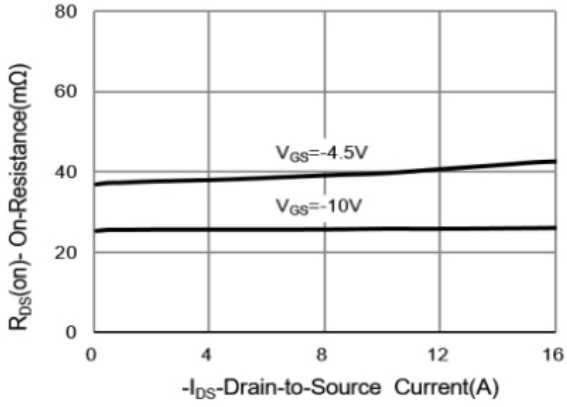


Fig.3 On-Resistance vs. Drain Current

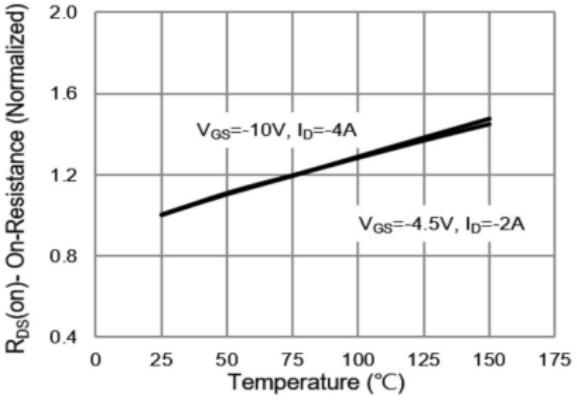


Fig.4 On-Resistance vs. Junction temperature

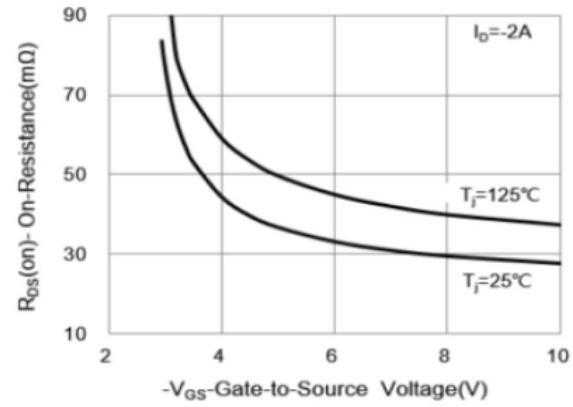


Fig.5 On-Resistance Variation with VGS.

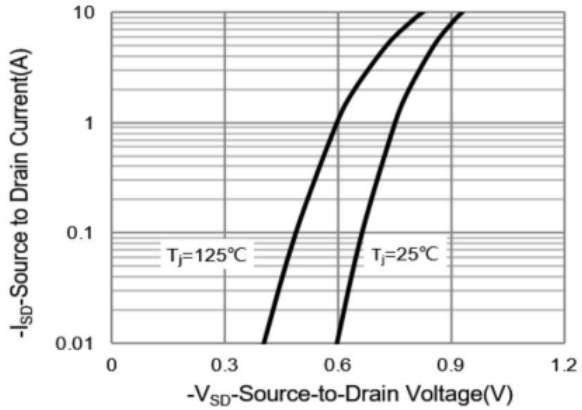


Fig.6 Body Diode Characteristics

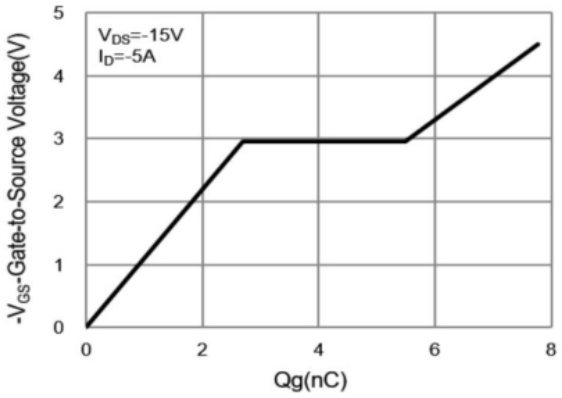


Fig.7 Gate-Charge Characteristics

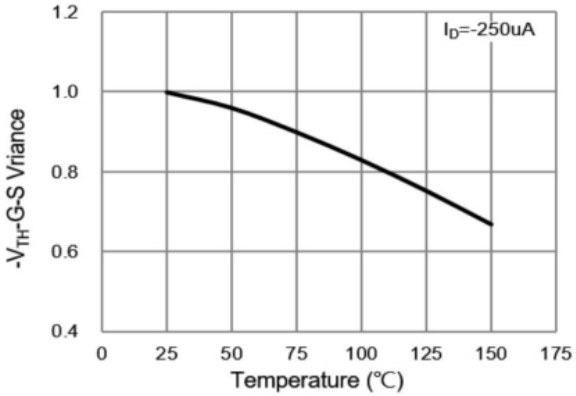


Fig.8 Threshold Voltage Variation with Temperature.

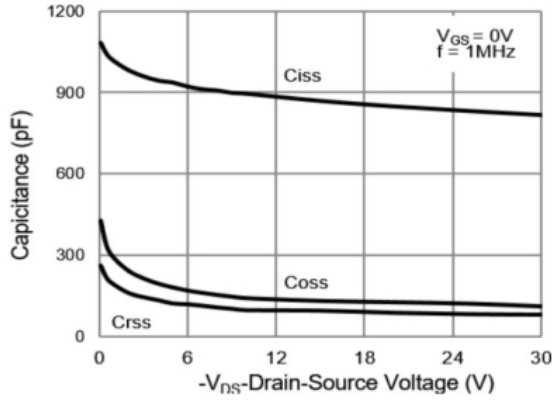
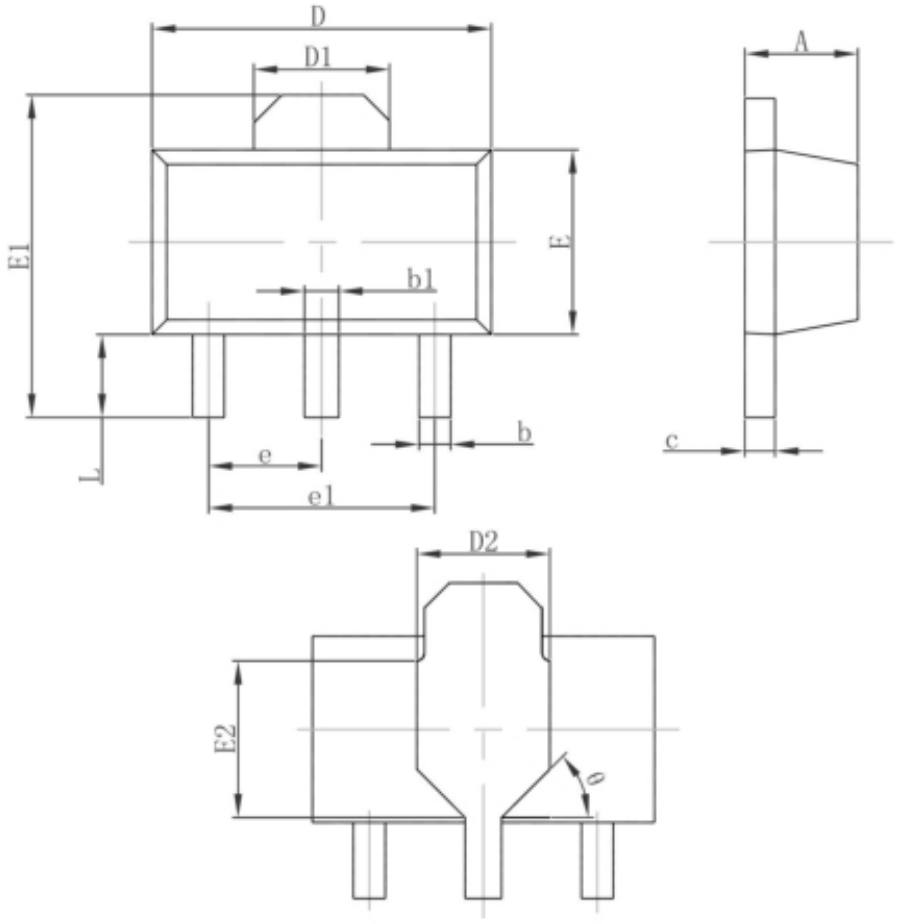


Fig.9 Capacitance vs. Drain-Source Voltage.

SOT-89-3L Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.400	1.600
b	0.320	0.520
b1	0.400	0.580
c	0.350	0.440
D	4.400	4.600
D1	1.550 REF.	
D2	1.750 REF.	
E	2.300	2.600
E1	3.940	4.250
E2	1.900 REF.	
e	1.500 TYP.	
e1	3.000 TYP.	
L	0.900	1.200
θ	45°	