

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	30mΩ@-10V	-5A
	45mΩ@-4.5V	

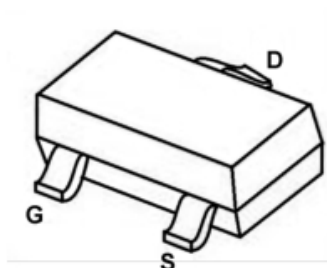
Feature

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge

Application

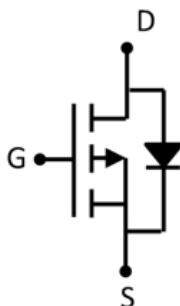
- Load Switch for Portable Devices
- Battery Switch

Package

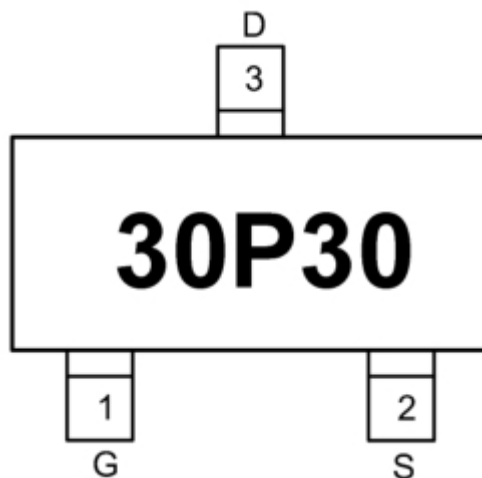


SOT-23-3L

Circuit diagram



Marking



Absolute maximum ratings

($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-5	A
Plused Drain Current	I_{DM}	-24	A
Power Dissipation	P_D	1.5	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	83.3	$^{\circ}\text{C}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

Electrical characteristics

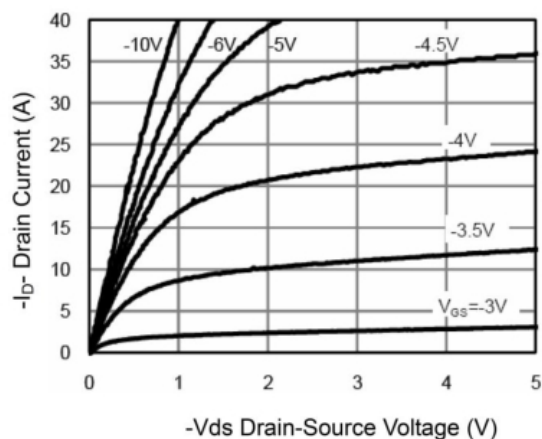
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

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	μA
Gate-Source Leakage	I _{GSS}	V _{GS} = ±20V, V _{DS} =0V			±100	μA
On characteristics ¹⁾						
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D = -250μA	-1.0	-1.6	-2.5	V
Drain-Source On-Resistance ¹	R _{DS(on)}	V _{GS} = -10V, I _D = -6A		30	42	mΩ
		V _{GS} = -4.5V, I _D = -5A		45	72	
Forward transconductance	g _{FS}	V _{DS} = -5V, I _D = -6A	14			S
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = -15V , I _D = -6A, V _{GS} = -10V,		9.2		nC
Gate-Source Charge	Q _{gs}			1.6		
Gate-Drain Charge	Q _{gd}			2.2		
Turn-on Delay Time	T _{d(on)}	V _{DD} = -15V, I _D = -4A, V _{GS} = -10V, R _G =3Ω		7.5		nS
Turn-on Rise Time	T _r			5.5		
Turn-off Delay Time	T _{d(off)}			19		
Turn-off Fall Time	T _f			7		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	I _{SD} = -1A,V _{GS} =0V			-1.2	V

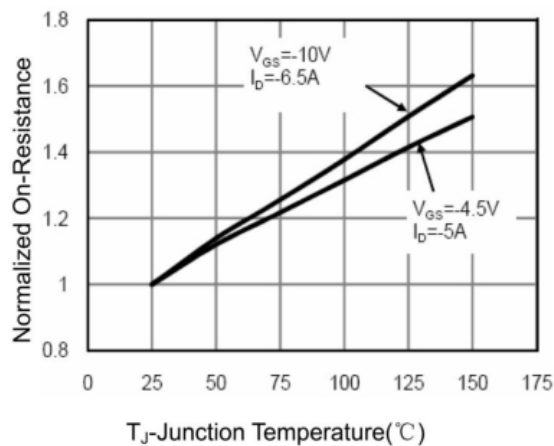
Notes:

1. Pulse Test: Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
2. Guaranteed by design, not subject to production testing.

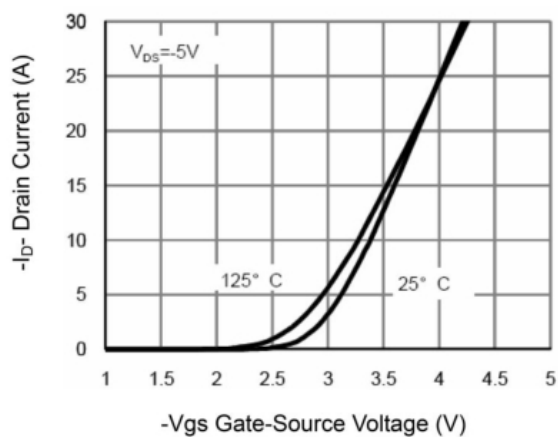
Typical Characteristics



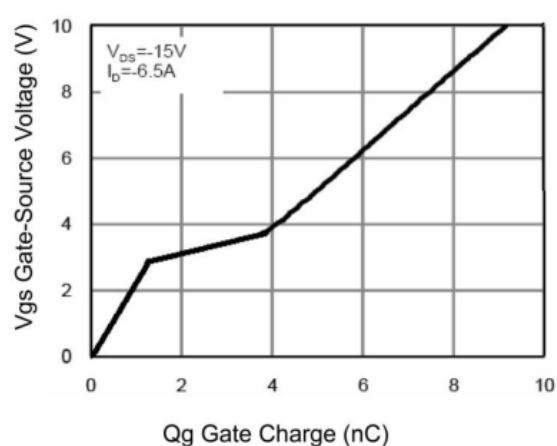
Output Characteristics



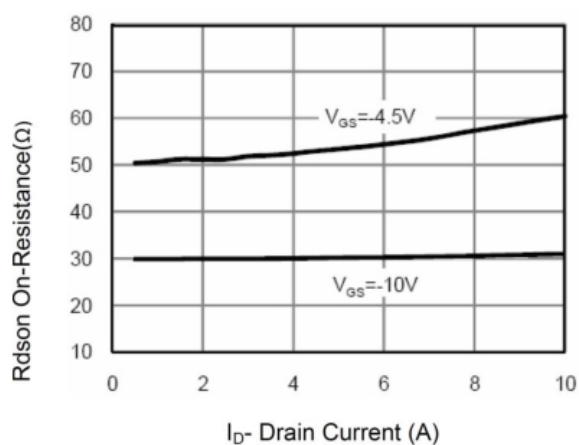
$R_{DS(on)}$ -Junction Temperature



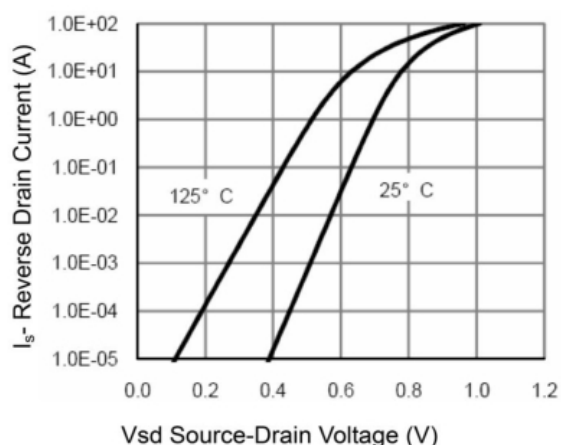
Transfer Characteristics



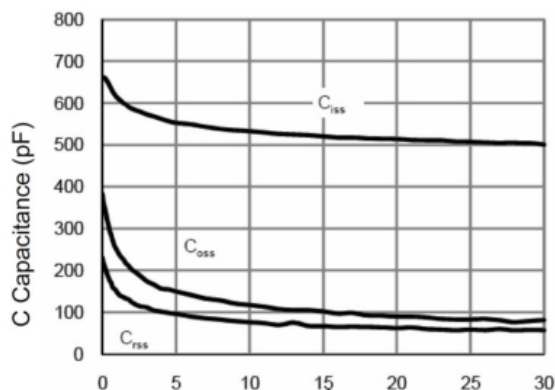
Gate Charge



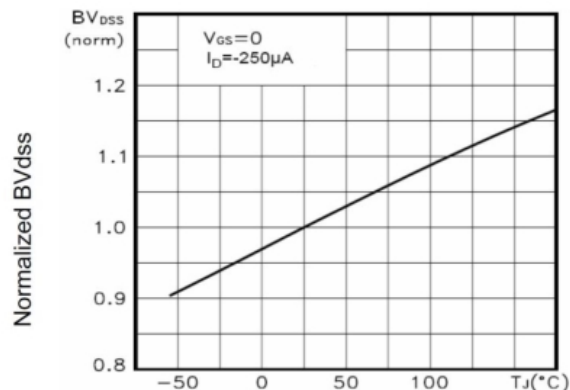
$R_{DS(on)}$ - Drain Current



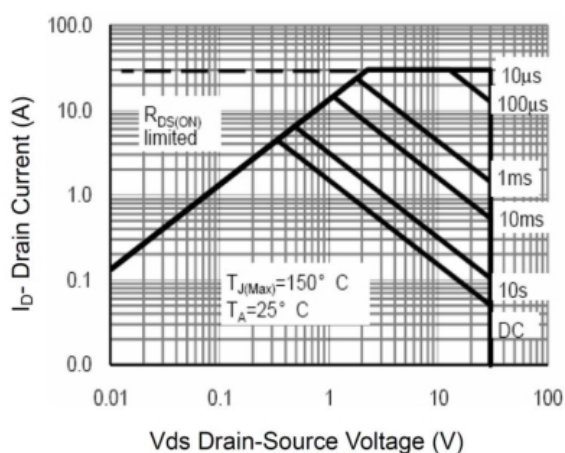
Source- Drain Diode Forward



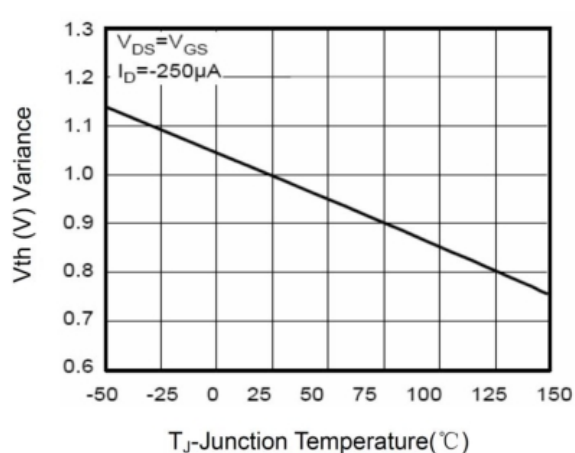
Capacitance vs Vds



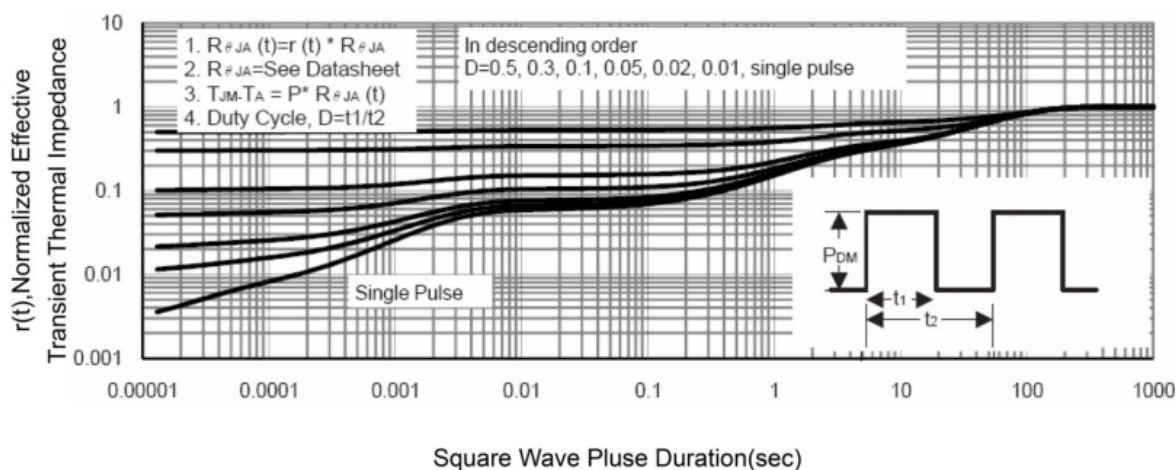
BVDSS vs Junction Temperature



Safe Operation Area

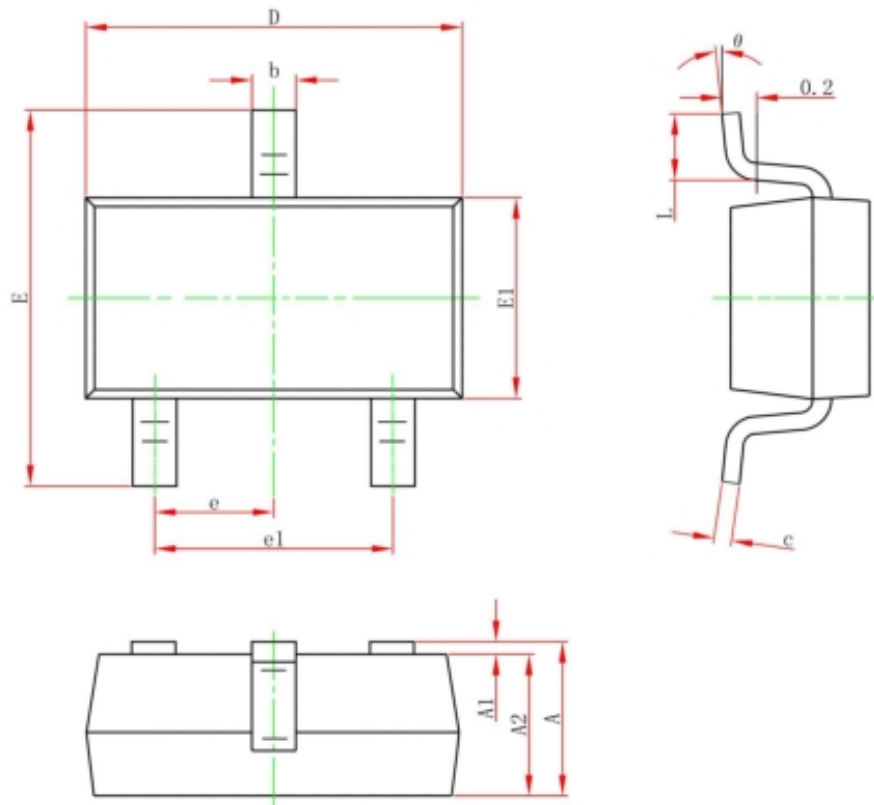


VGS(th) vs Junction Temperature



Normalized Maximum Transient Thermal Impedance

SOT-23-3L Package Information



Symbol	Dimensions in millimeters	
	Min.	Max.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E1	1.500	1.700
E	2.650	2.950
e	0.950 Typ.	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°