



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	30mΩ@-10V	-6.5A
	45mΩ@-4.5V	

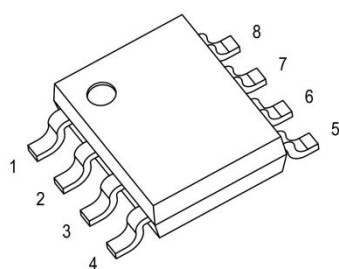
Feature

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

Application

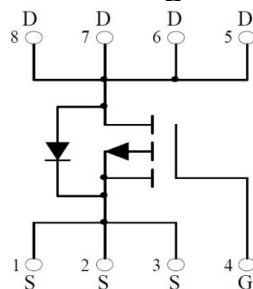
- Load Switch for Portable Devices
- Battery Switch

Package:

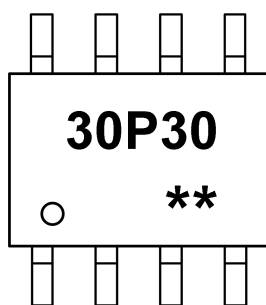


SOP-8

Circuit diagram



Marking



30P30 = Device code

** = Date Code

**Absolute maximum ratings (Ta=25°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	-6.5	A
Pulsed Drain Current	I_{DM}	-30	A
Power Dissipation	P_D	3.1	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	40	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

Electrical characteristics (Ta=25 °C, unless otherwise noted)

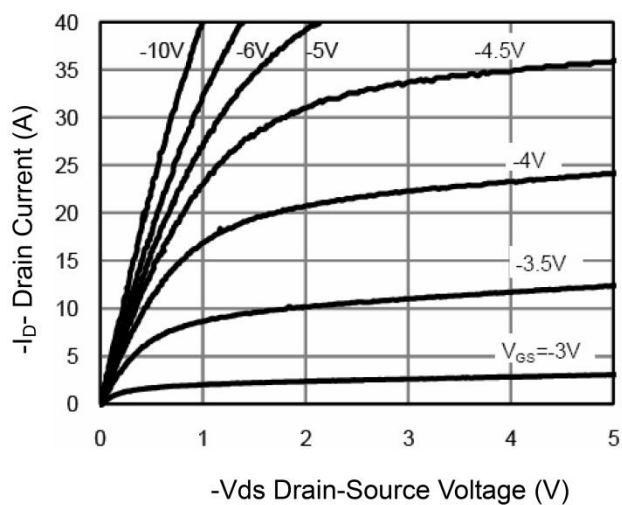
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =-250μA	-30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-30V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} =±20V, V _{DS} = 0V			±100	nA
On characteristics ¹⁾						
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	-1.2	-1.65	-2.5	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-6.5A		30	42	mΩ
		V _{GS} =-4.5V, I _D =-5A		45	72	
Forward transconductance	g _{FS}	V _{DS} =-5V, I _D =-6.5A	14			S
Switching characteristics ²⁾						
Total gate charge	Q _g	V _{DS} =-15V, V _{GS} =-10V, I _D =-6.5A		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 ¹⁾	V _{SD}	V _{GS} =0V, I _S =-6.5A			-1.2	V

Notes:

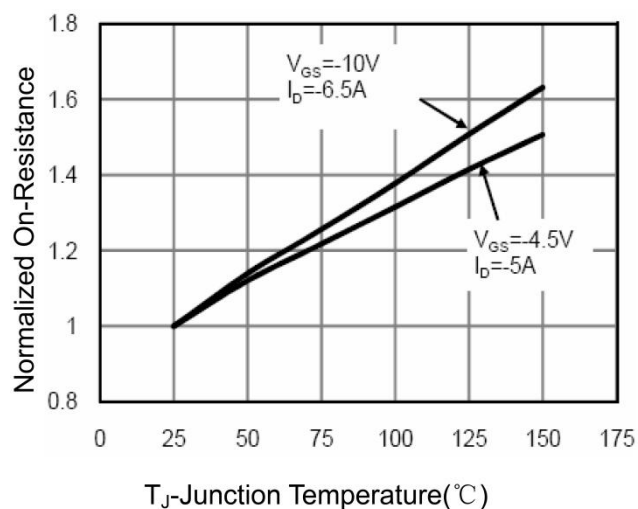
- 1) Pulse Test: Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 2) Guaranteed by design, not subject to production testing.



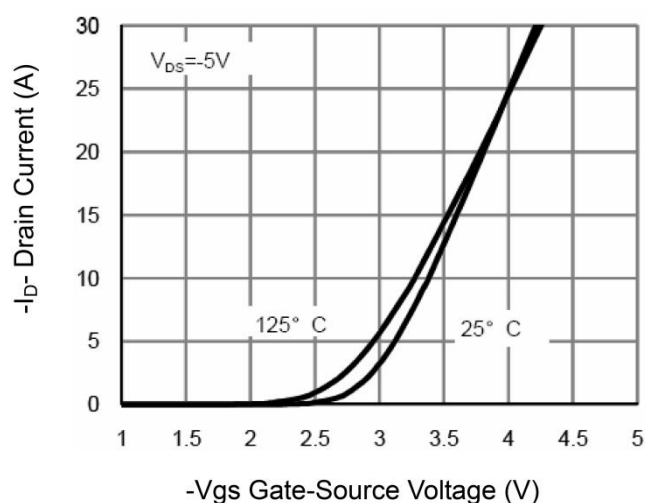
Typical Characteristics



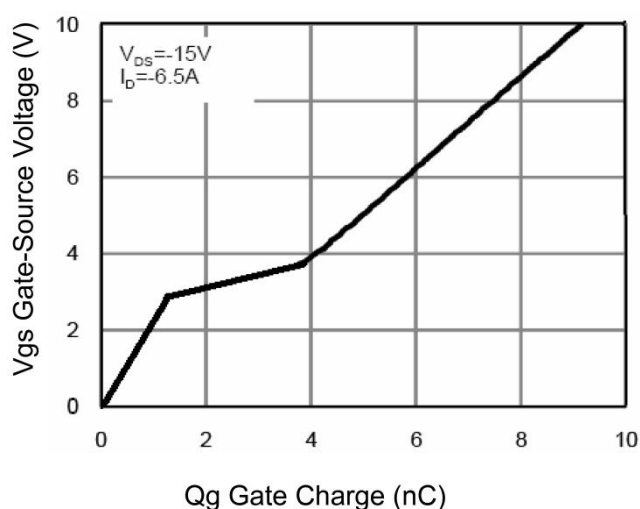
Output Characteristics



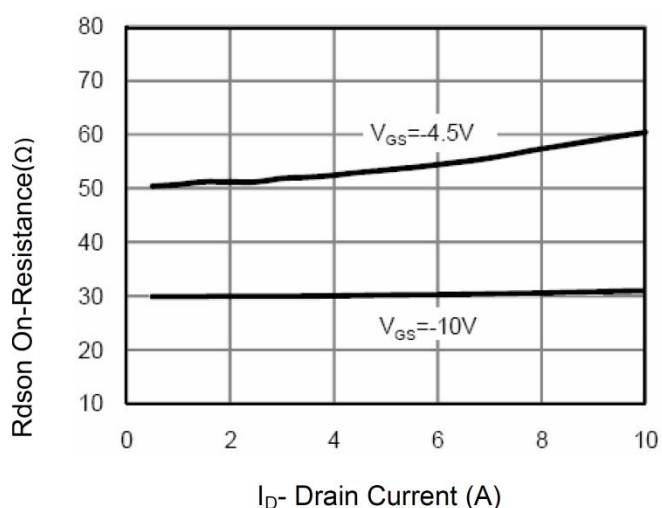
$R_{DS(on)}$ -Junction Temperature



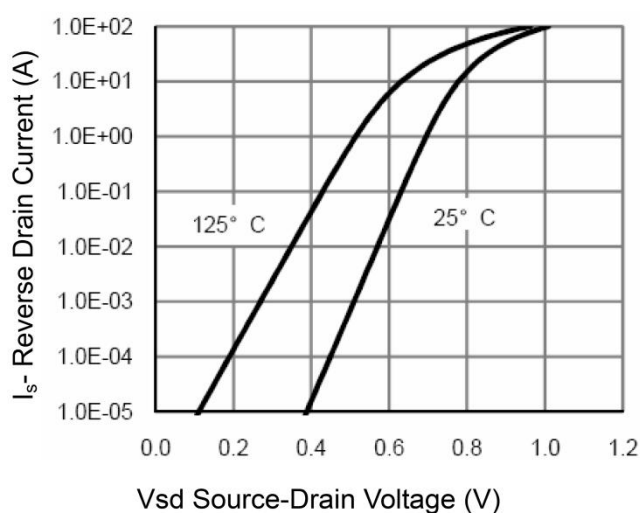
Transfer Characteristics



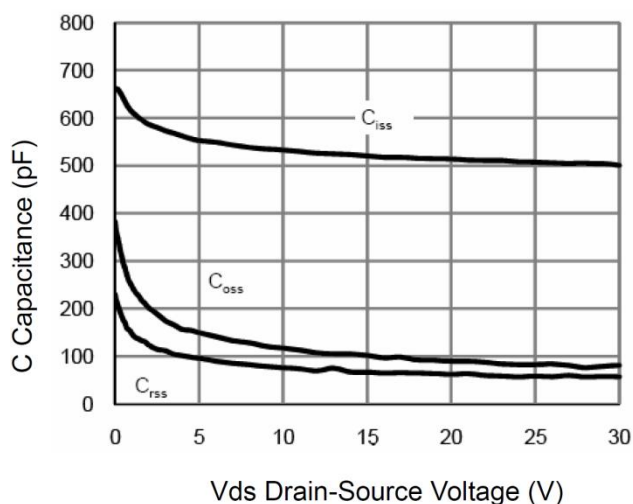
Gate Charge



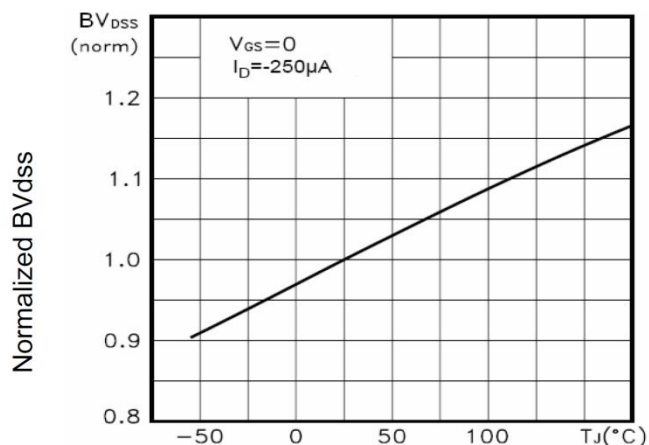
$R_{DS(on)}$ - Drain Current



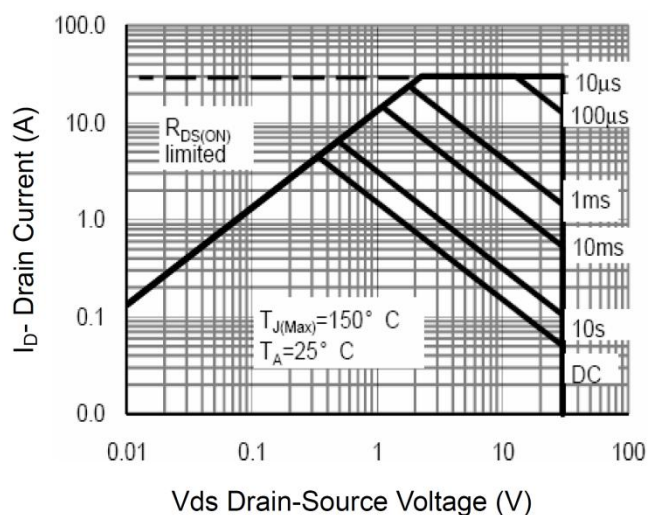
Source- Drain Diode Forward



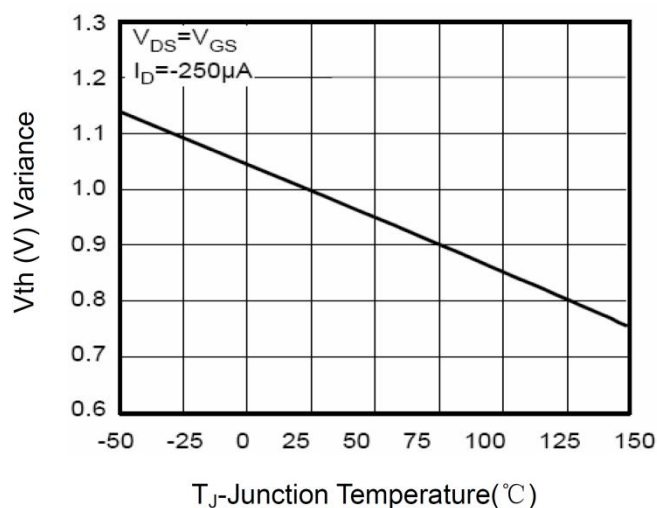
Capacitance vs Vds



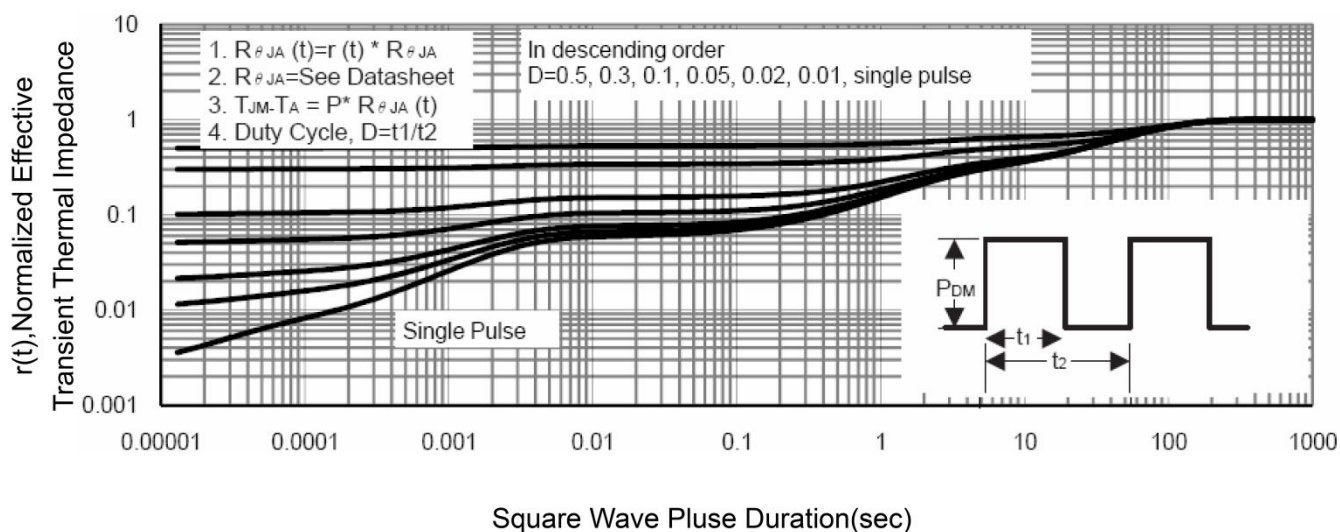
BVDSS vs Junction Temperature



Safe Operation Area

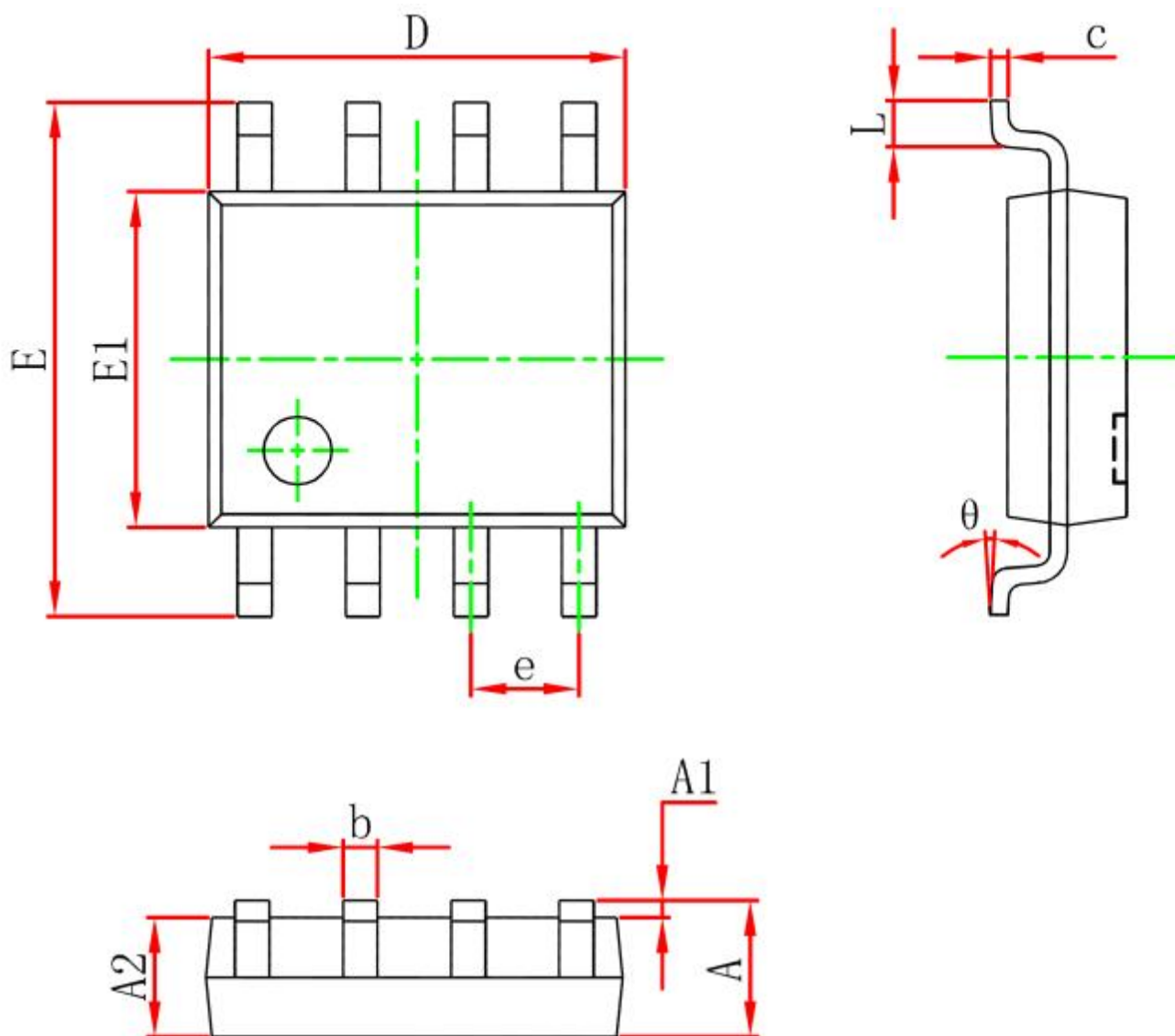


VGS(th) vs Junction Temperature



Normalized Maximum Transient Thermal Impedance

SOP-8 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.35	1.75
A1	0.10	0.25
A2	1.35	1.55
b	0.33	0.51
c	0.17	0.25
D	4.80	5.00
e	1.27 REF.	
E	5.80	6.20
E1	3.80	4.00
L	0.40	1.27
θ	0°	8°