

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	16mΩ@-10V	-9A
	21mΩ@-4.5V	

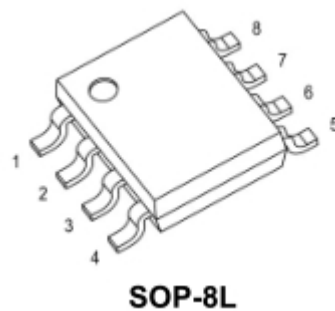
Feature

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

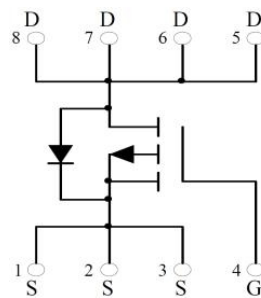
Application

- Battery Switch
- Load switch
- Power management

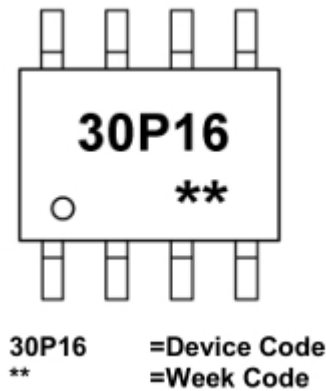
Package



Circuit diagram



Marking



Absolute maximum ratings

(T_a=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	-9	A
Pulsed Drain Current ¹⁾	I _{DM}	-36	A
Power Dissipation	P _D	3.1	W
Thermal Resistance from Junction to Ambient ²⁾	R _{θJA}	40	°C
Junction Temperature	T _J	150	
Storage Temperature	T _{STG}	-55~ +150	°C

Electrical characteristics

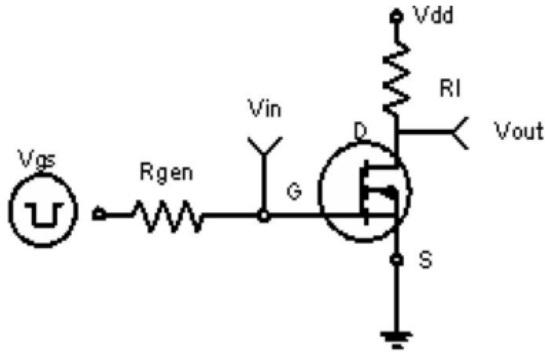
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30V, V_{GS} = 0V$			-1	μA
Gate-Source Leakage	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	μA
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1	-1.5	-2.5	V
Drain-Source On-Resistance ¹	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -9A$		16	25	m Ω
		$V_{GS} = -4.5V, I_D = -6A$		21	34	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V,$ $f = 1MHz$		1600		pF
Output Capacitance	C_{oss}			350		
Reverse Transfer Capacitance	C_{rss}			300		
Switching Characteristics						
Turn-on Delay Time	$T_{d(on)}$	$V_{DD} = -15V, I_D = -1A,$ $V_{GS} = -10V, R_{GEN} = 6\Omega$		10		nS
Turn-on Rise Time	T_r			15		
Turn-off Delay Time	$T_{d(off)}$			110		
Turn-off Fall Time	T_f			70		
Total Gate Charge	Q_g	$V_{DS} = -15V, V_{GS} = -9.1V,$ $I_D = -10A$		30		nC
Gate-Source Charge	Q_{gs}			5.5		
Gate-Drain Charge	Q_{gd}			8		
Drain-Source Diode Characteristics						
Body Diode Voltage	V_{SD}	$I_S = -9.1A, V_{GS} = 0V$			-1.2	V

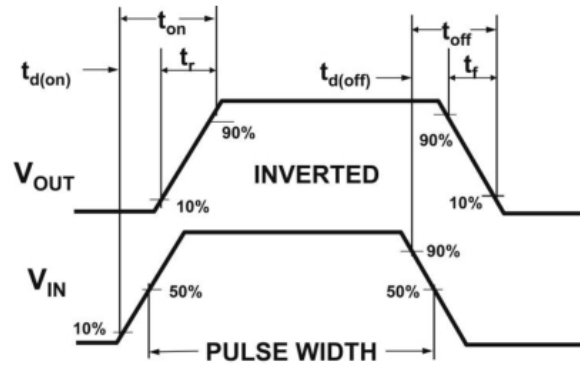
Note:

1. Repetitive rating: Pulse width limited by junction temperature.
2. Surface mounted on FR4 board, $t \leq 10s$.

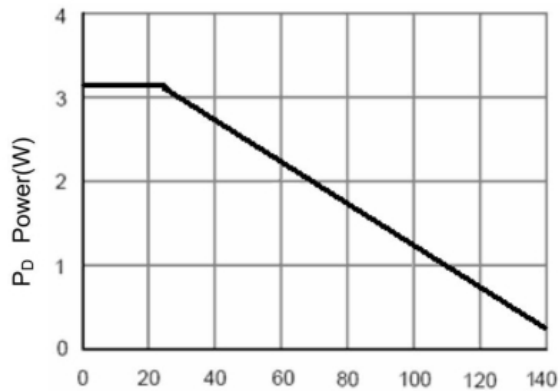
Typical Characteristics



Switching Test Circuit

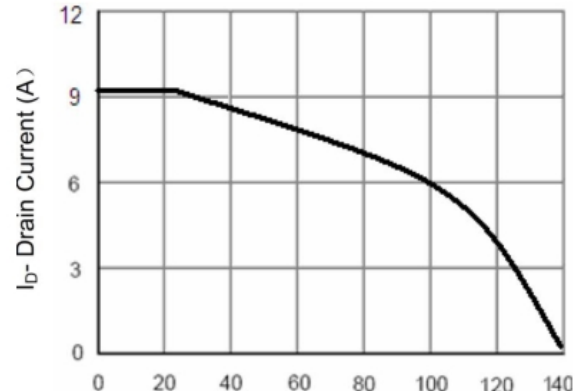


Switching Waveforms



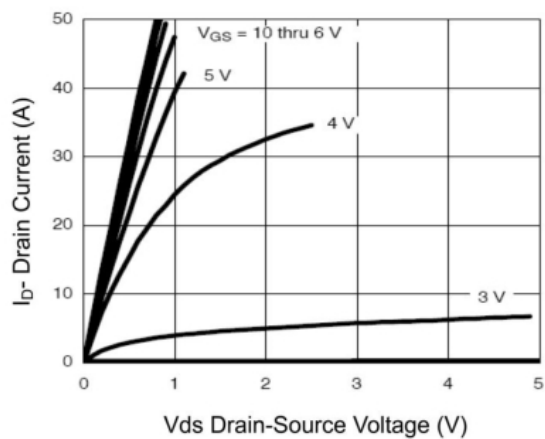
T_J -Junction Temperature ($^{\circ}C$)

Power Dissipation



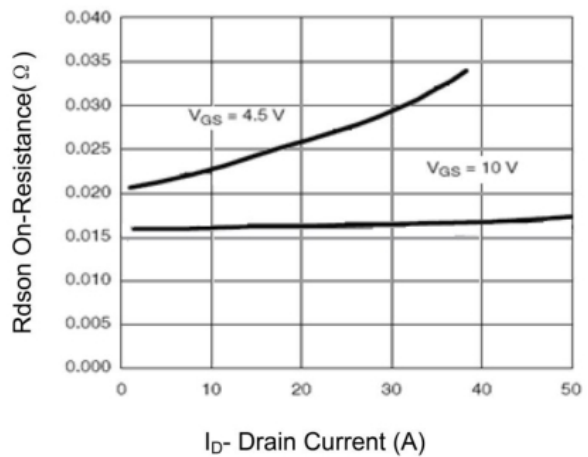
T_J -Junction Temperature ($^{\circ}C$)

Drain Current



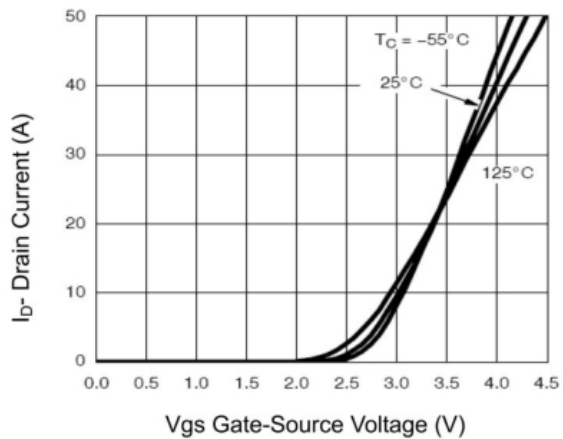
V_{DS} Drain-Source Voltage (V)

Output Characteristics

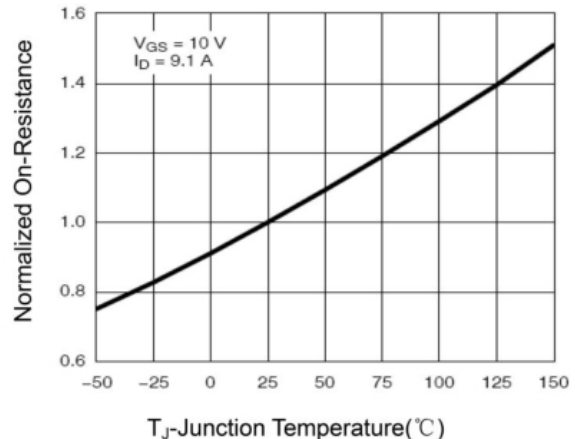


I_D -Drain Current (A)

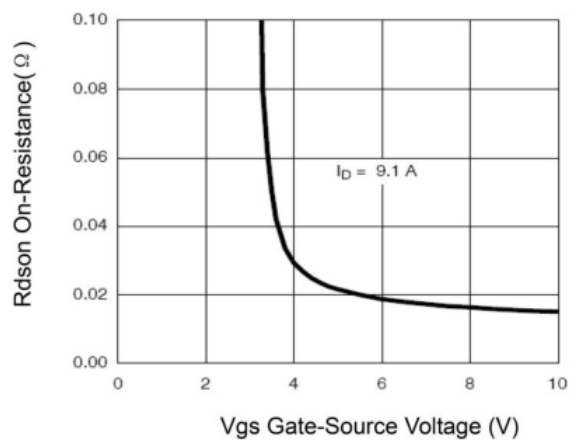
Drain-Source On-Resistance



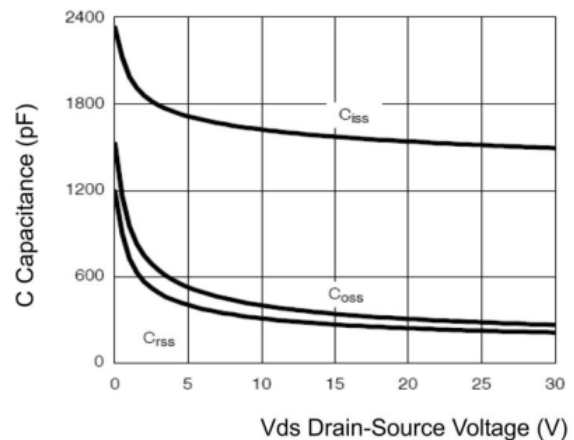
Transfer Characteristics



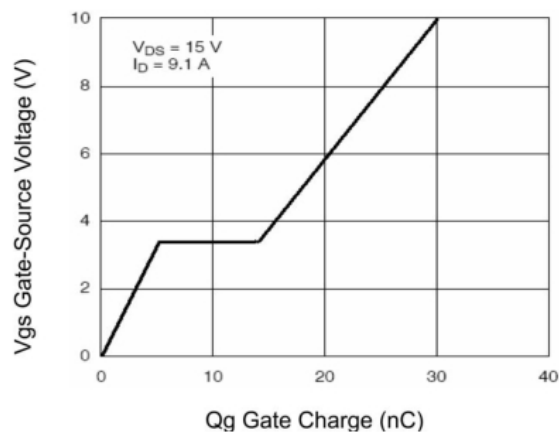
Drain-Source On-Resistance



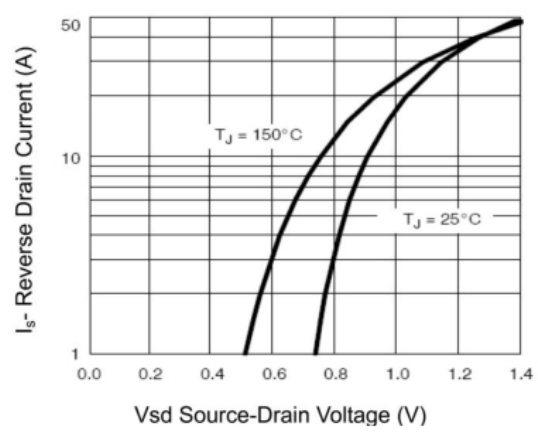
$R_{DS(on)}$ vs V_{GS}



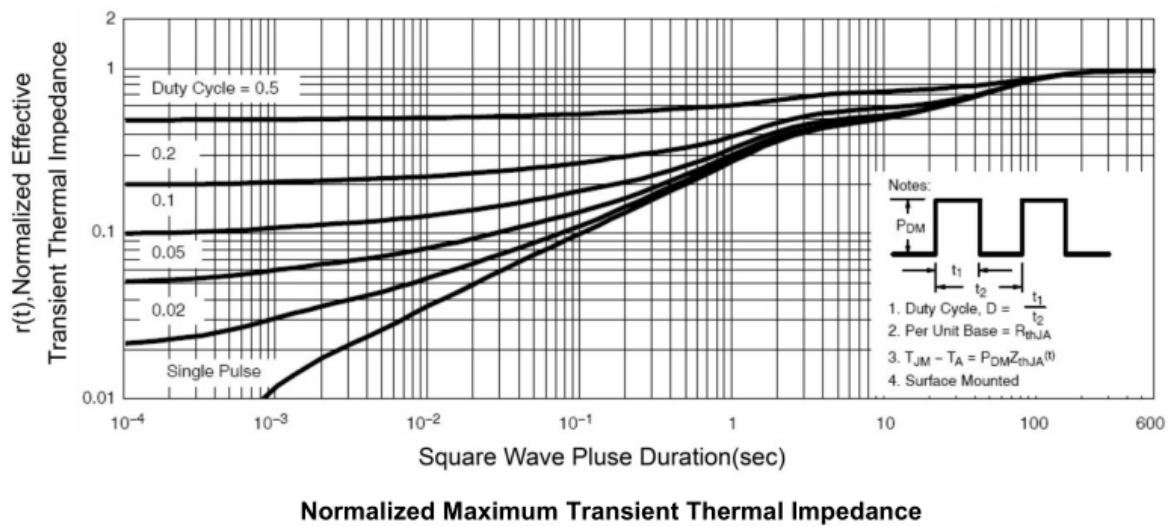
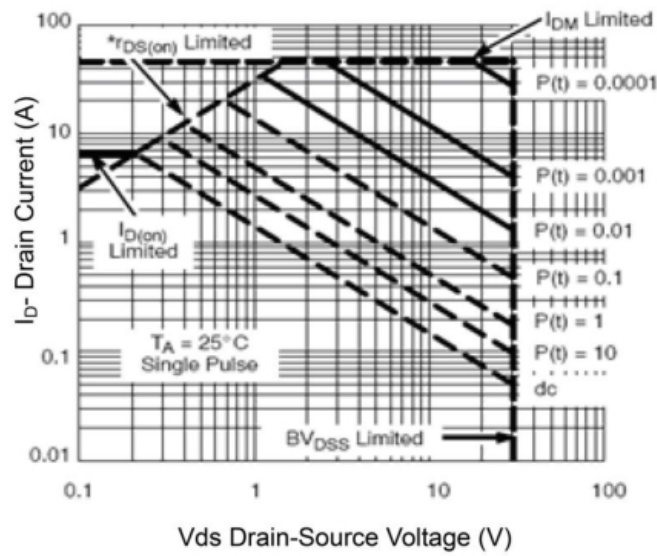
Capacitance vs V_{DS}



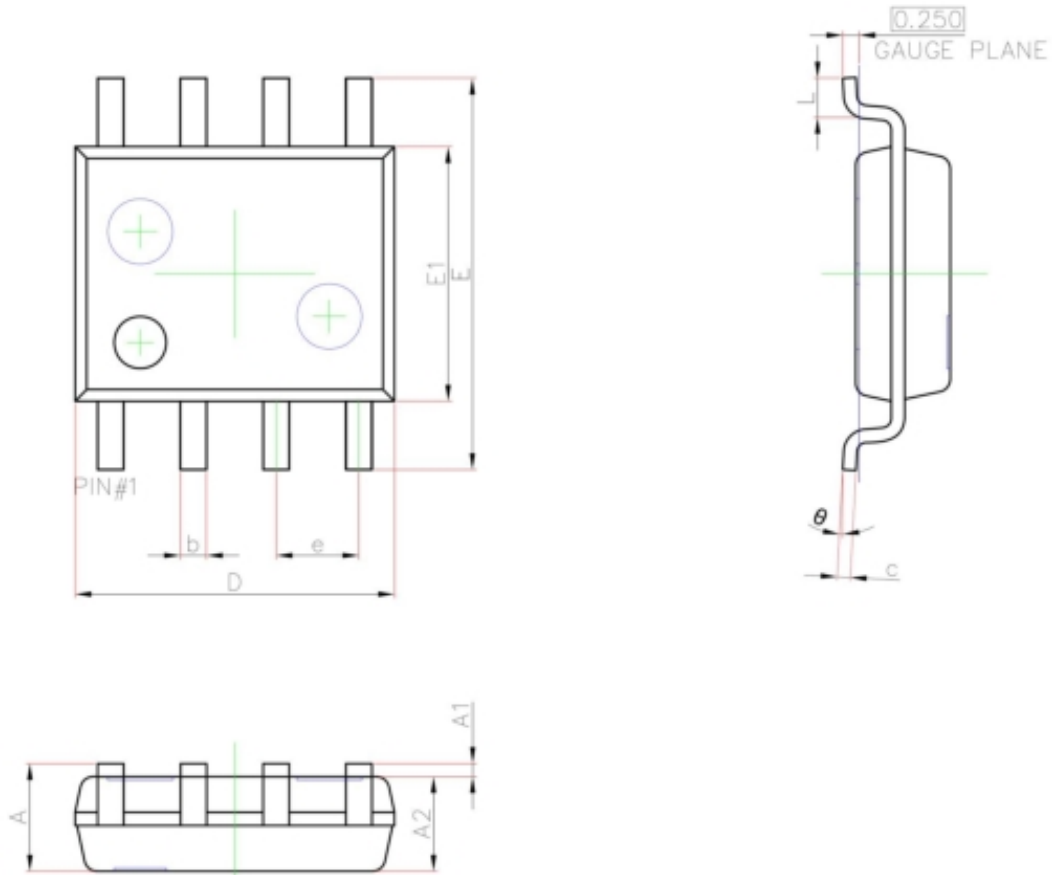
Gate Charge



Source- Drain Diode Forward



SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.450	1.750	0.057	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.700	5.100	0.185	0.201
E	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°