

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	13m Ω @-10V	-9.5A
	18m Ω @-4.5V	

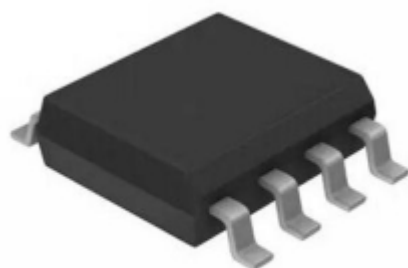
Feature

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

Applications

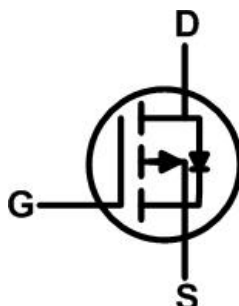
- Battery Switch
- Load switch
- Power management

Package

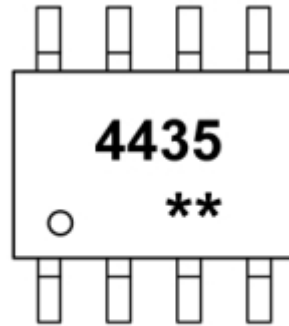


SOP-8

Circuit diagram



Marking



4435 =Device Code
****** =Week Code

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	-9.5	A
Pulsed Drain Current ¹⁾	I _{DM}	-38	A
Power Dissipation	P _D	3.1	W
Thermal Resistance from Junction to Ambient ²⁾	R _{θJA}	40	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55~ +150	°C

Electrical characteristics

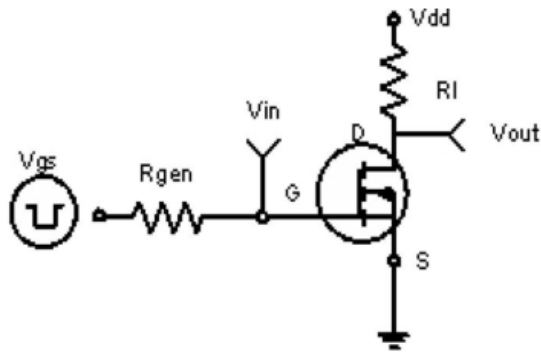
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-source breakdown voltage	BV (BR)DSS	V _{GS} = 0V, I _D = -250μA	-30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = -30V, V _{GS} = 0V			-1	uA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	uA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1	-1.5	-2.5	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -9.1A		13	20	mΩ
		V _{GS} = -4.5V, I _D = -6.9A		18	35	
Dynamic Characteristics ⁴⁾						
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} = 6Ω		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		pF
Gate-source charge	Q _{gs}			5.5		
Gate-drain charge	Q _{gd}			8		
Source-Drain Diode Characteristics						
Body Diode Voltage	V _{DS}	I _S = -9.1A, V _{GS} = 0V			-1.2	V

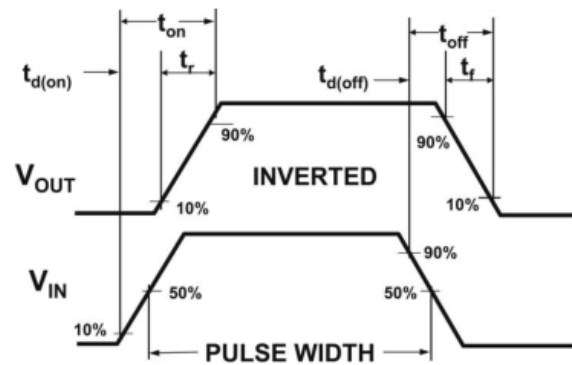
Notes:

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

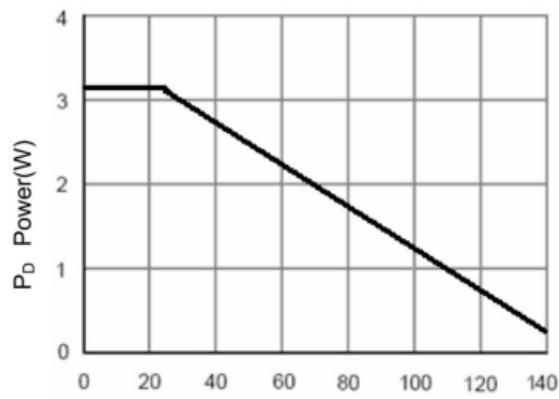
Typical Characteristics



Switching Test Circuit

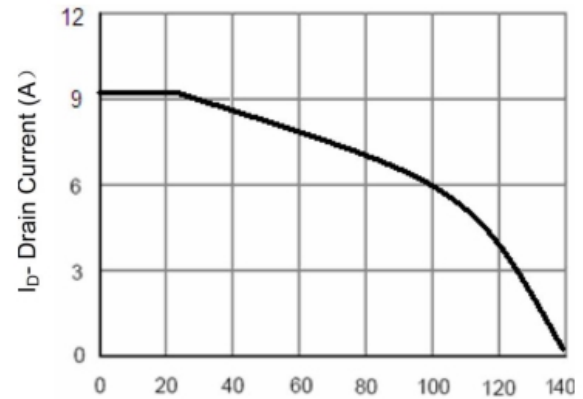


Switching Waveforms



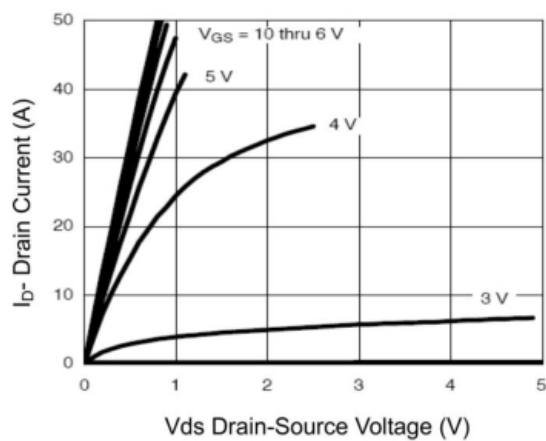
T_J -Junction Temperature ($^{\circ}C$)

Power Dissipation

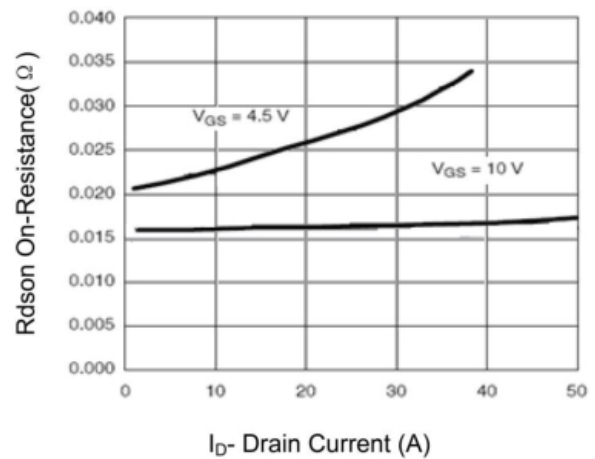


T_J -Junction Temperature ($^{\circ}C$)

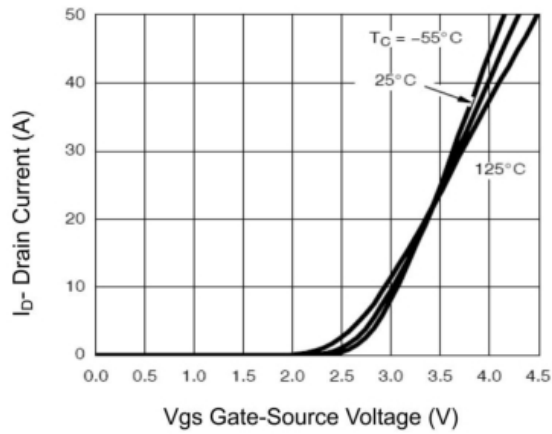
Drain Current



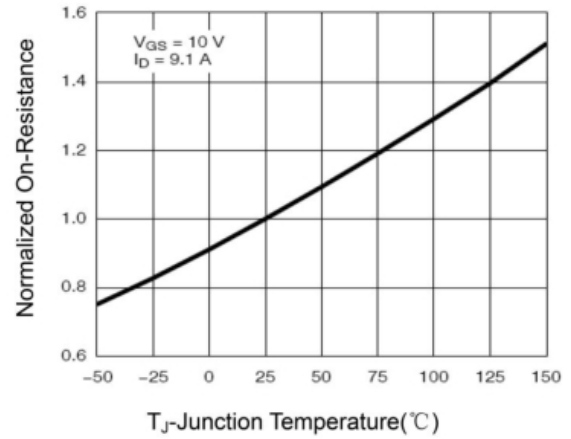
Output Characteristics



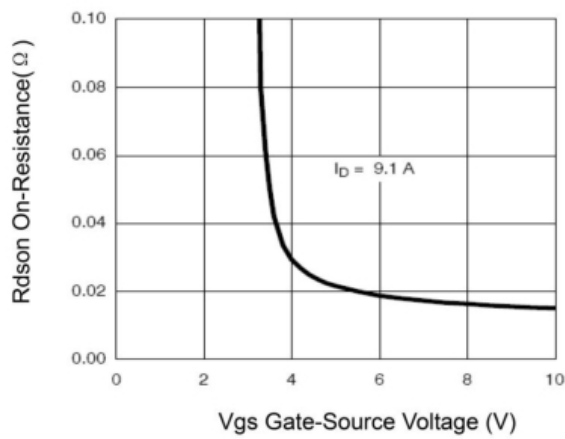
Drain-Source On-Resistance



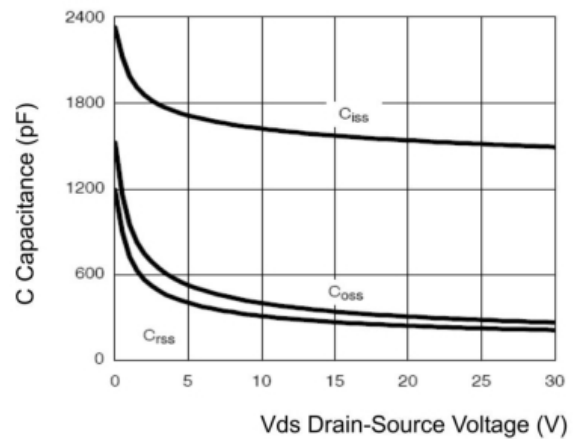
Transfer Characteristics



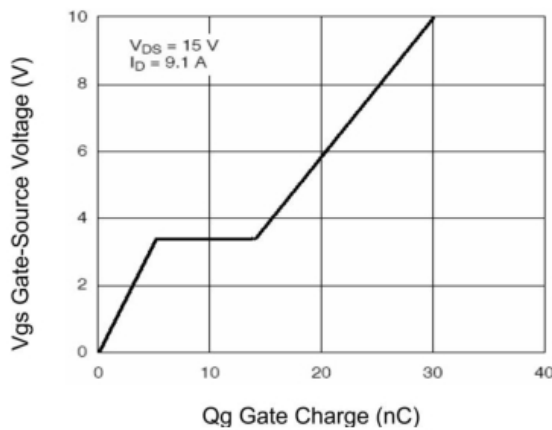
Drain-Source On-Resistance



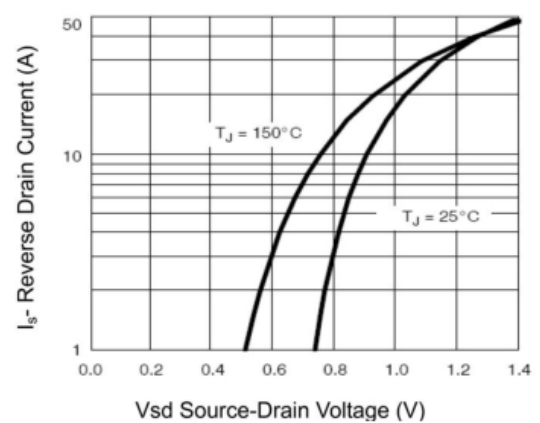
R_{dson} vs V_{GS}



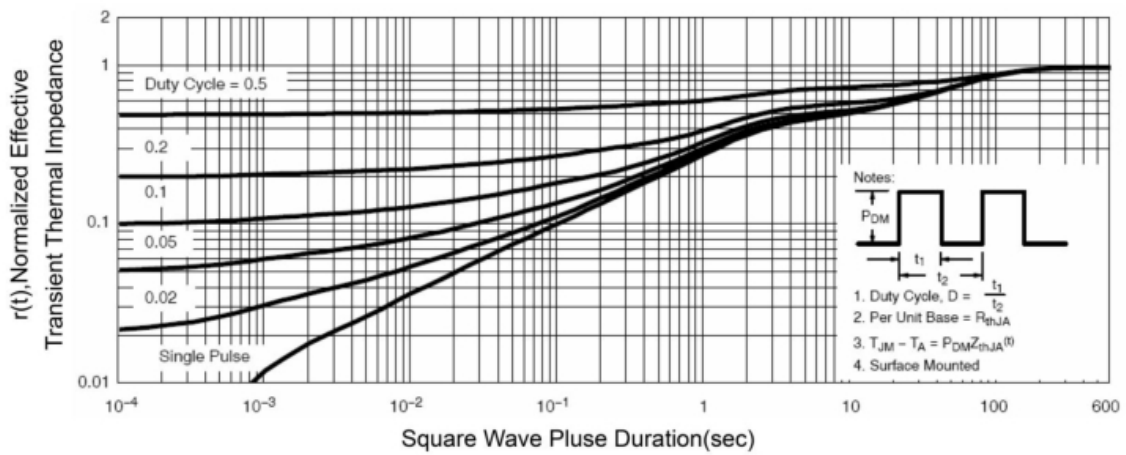
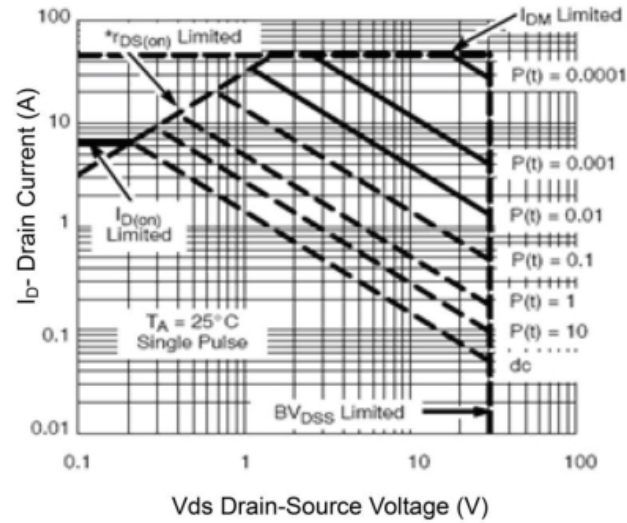
Capacitance vs V_{ds}



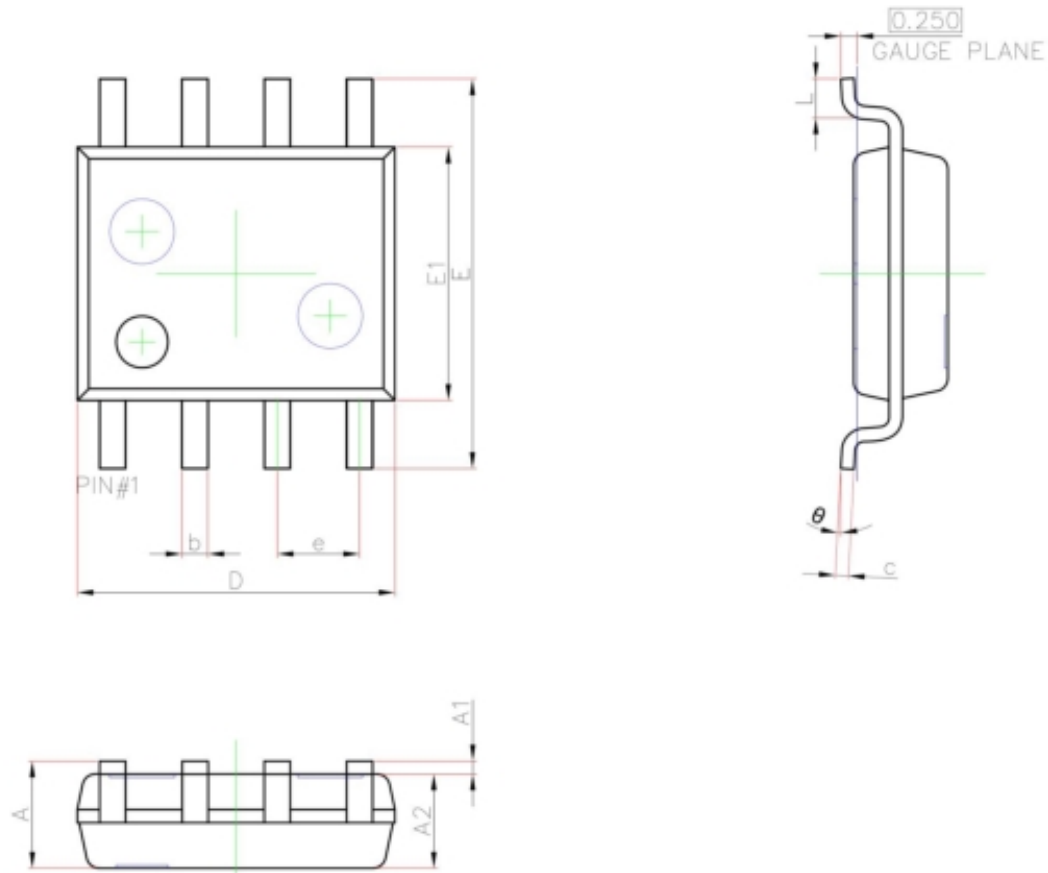
Gate Charge



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°