Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	10.5mΩ@-10V	-13.5A
	13mΩ@-4.5V	

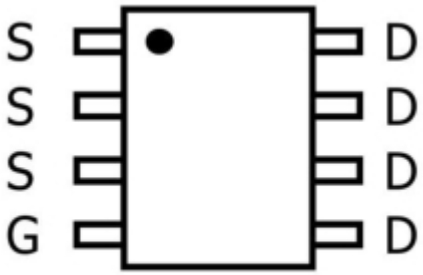
Feature

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

Applications

- Advanced trench process technology
- High density cell design for ultra-low on-resistance
- High power and current handing capability
- Ideal for Lion battery pack applications

Package



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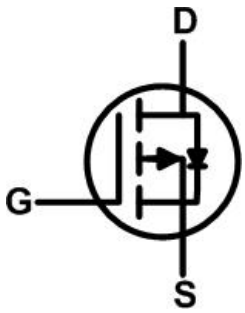
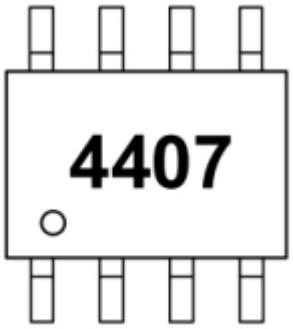
Circuit diagram



Marking



4407 =Device Code

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
Continuous Drain Current	I_D	-13.5	A
Pulsed Drain Current[1)]	I_{DM}	-65	A
Power Dissipation	P_D	3	W
Thermal Resistance from Junction to Ambient[2)]	$R_{\theta JA}$	75	℃/W
Junction Temperature	T_J	150	
Storage Temperature	T_{STG}	-55~ +150	℃

Electrical characteristics

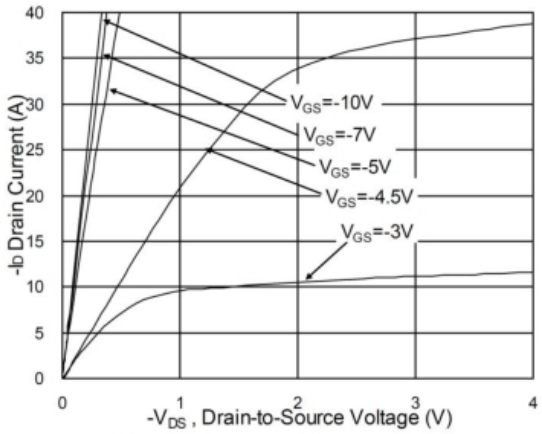
(T_A=25℃, unless otherwise noted)

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	uA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	uA
Gate threshold voltage[1)]	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1.0	-1.5	-2.2	V
Drain-source on-resistance[1)]	$R_{DS(on)}$	V_{GS} =-10V, I_D =-12A		10.5	14	mΩ
		V_{GS} =-4.5V, I_D =-7A		13	29	
Dynamic Characteristics [4)]						
Input capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V, f=1MHz		3448		pF
Output capacitance	C_{oss}			508		
Reverse transfer capacitance	C_{rss}			421		
Switching Characteristics[4)]						
Turn-on Delay Time	$T_{d(on)}$	V_{GS}=-10V, V_{DD} =-15V, R_{GEN} =3.3Ω, I_D =-1A		9.4		nS
Turn-on Rise Time	T_r			10.2		
Turn-Off Delay Time	$T_{d(off)}$			117		
Turn-Off Fall Time	t_f			24		
Total gate charge	Q_g	V_{DS}=-15V, V_{GS}=-4.5V, I_D =-12A		30		pF
Gate-source charge	Q_{gs}			10		
Gate-drain charge	Q_{gd}			10.4		
Source-Drain Diode Characteristics						
Body Diode Voltage	V_{DS}	I_S=-1A, V_{GS} = 0V			-1.2	V

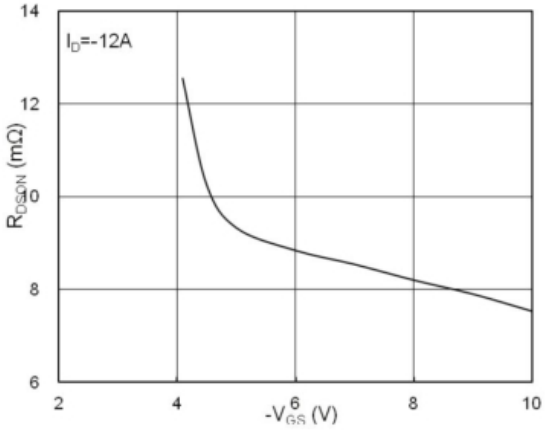
Notes:

1. Repetitive rating: Pulse width limited by junction temperature.
2. Surface mounted on FR4 board, t≤10s.
3. Pulse Test: Pulse Width≤80μs, Duty Cycle≤0.5%.
4. Guaranteed by design, not subject to producting.

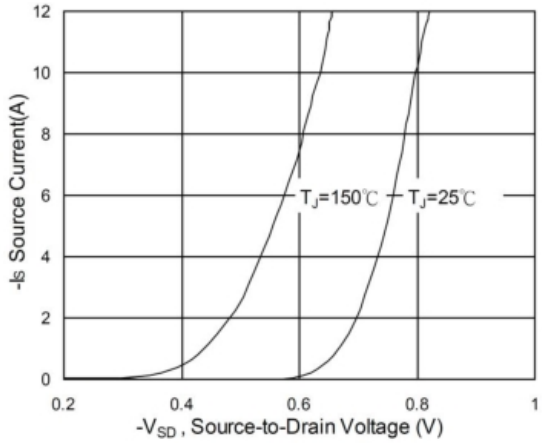
Typical Characteristics



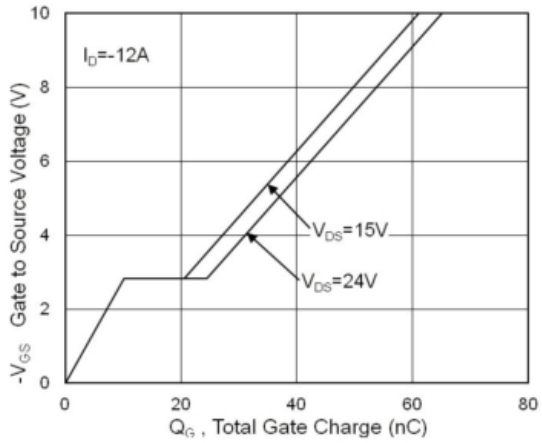
Typical Output Characteristics



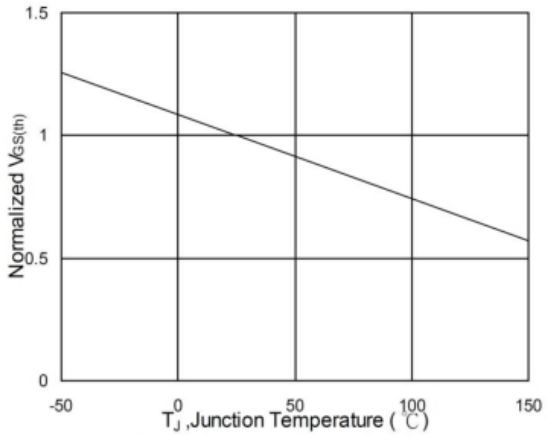
On-Resistance v.s Gate-Source



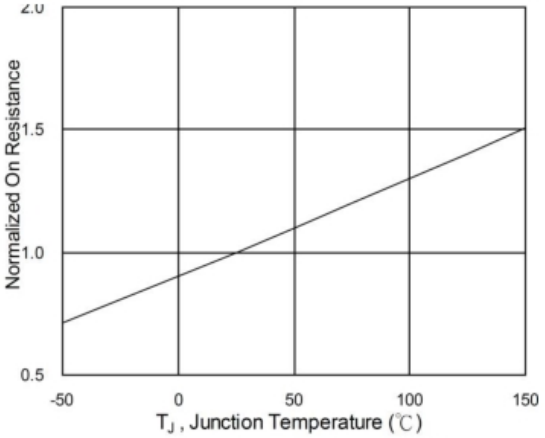
Forward Characteristics Of Reverse



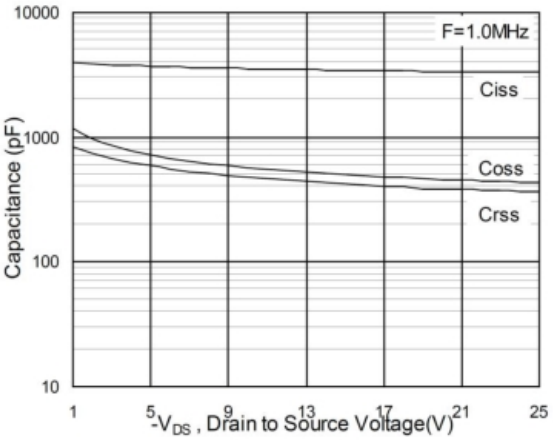
Gate-Charge Characteristics



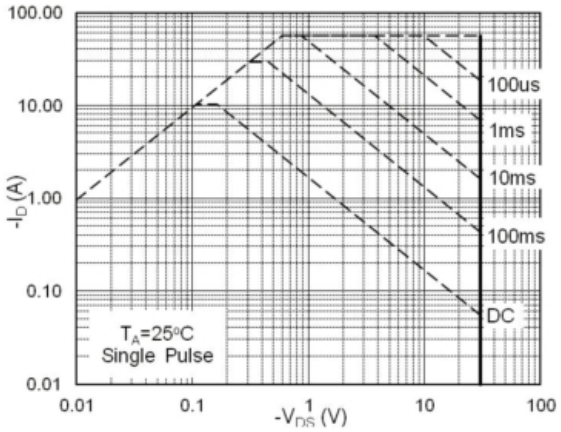
Normalized VGS(th) vs. TJ



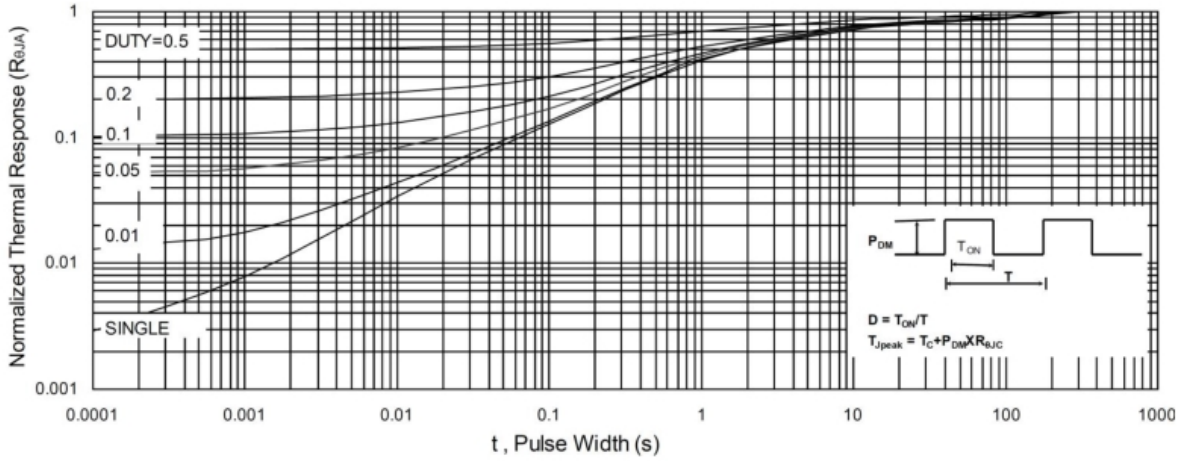
Normalized RDSON vs. TJ



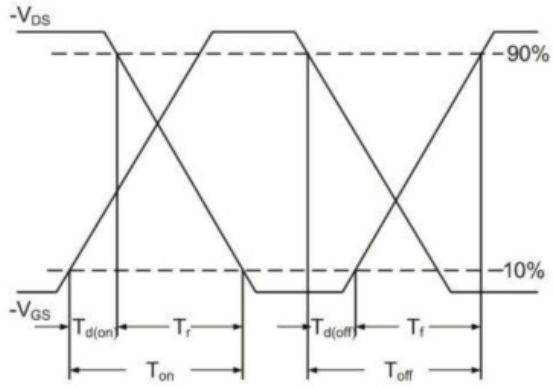
Capacitance



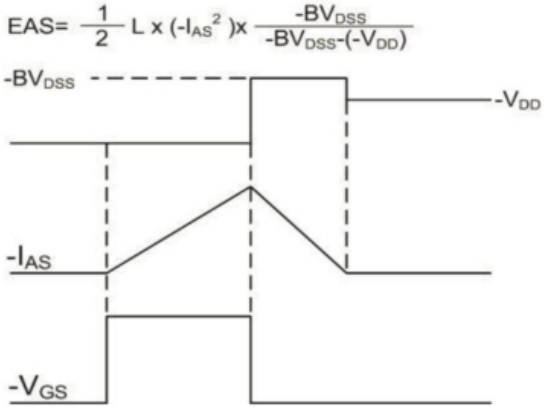
Safe Operating Area



Normalized Maximum Transient Thermal Impedance

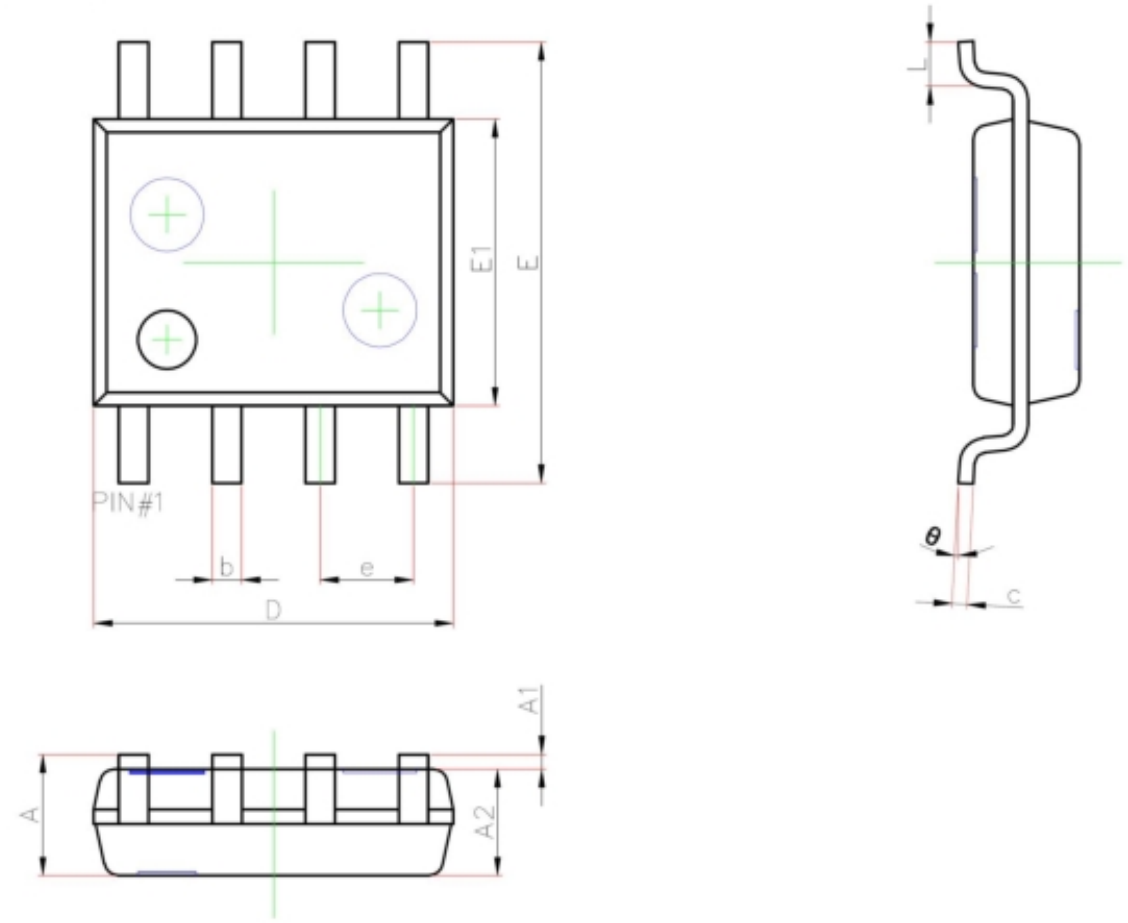


Switching Time Waveform



Unclamped Inductive Switching Waveform

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°