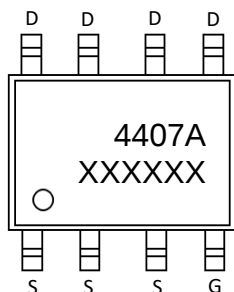


Features

- Trench Power LV MOSFET technology
- High density cell design for Low $R_{DS(ON)}$
- High Speed switching

Application

- Battery protection
- Power management
- Load switch

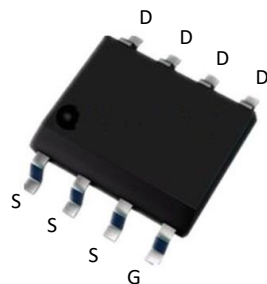


Marking and pin assignment

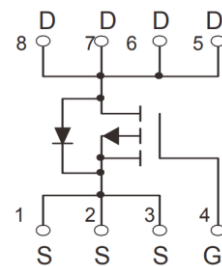
4407A : Device code
XXXXXX : Code

-30V/-12A P-Channel MOSFET Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-30V	11m Ω @20V	-12A
	13m Ω @10V	



SOP-8 top view



Schematic diagram



Pb-Free



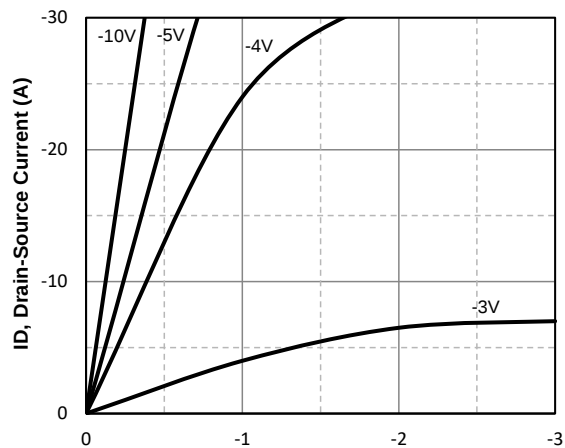
Halogen-Free

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

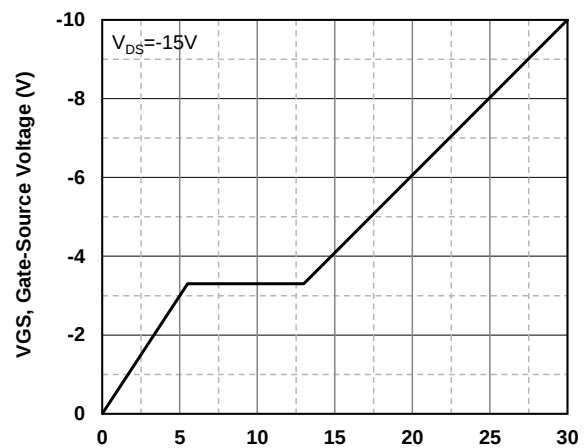
Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{DS}	Drain-Source Breakdown Voltage		-30	V
V _{GS}	Gate-Source Voltage		±20	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-50 to 155	°C
I _S	Diode Continuous Forward Current	Tc=25°C	-12	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	-60	A
I _D	Continuous Drain Current@GS=10V	Tc=25°C	-12	A
P _D	Maximum Power Dissipation	Tc=25°C	3	W
R _{θJA}	Thermal Resistance Junction-Ambient(*1 in2 Pad of 2-oz Copper), Max.)		40	°C/W

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	VGS=0V, ID=-250μA	-30	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	VDS=-30V, VGS=0V	--	--	-1	uA
I _{GSS}	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	VDS=VGS, ID=-250μA	-1	-1.5	-2.2	V
R _{DS(on)}	Drain-Source On-State Resistance	VGS=-20V, ID=-12A	--	8.5	11	mΩ
		VGS=-10V, ID=-12A	--	10	13	
		VGS=-6V, ID=-7A	--	12.5	17	
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	VDS=-15V, VGS=0V, f=1MHz	--	2800	--	pF
C _{OSS}	Output Capacitance		--	350	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	300	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	VDD=-15V, ID=-15A, VGS=-10V	--	30	--	nC
Q _{gs}	Gate Source Charge		--	5.5	--	nC
Q _{gd}	Gate Drain Charge		--	7.5	--	nC
t _{d(on)}	Turn-on Delay Time	VDD=-15V, ID=-15A, VGS=-10V, RG=2.5Ω	--	13	--	nS
t _r	Turn-on Rise Time		--	20	--	nS
t _{d(off)}	Turn-Off Delay Time		--	90	--	nS
t _f	Turn-Off Fall Time		--	65	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=-12A,	--	--	-1.2	V

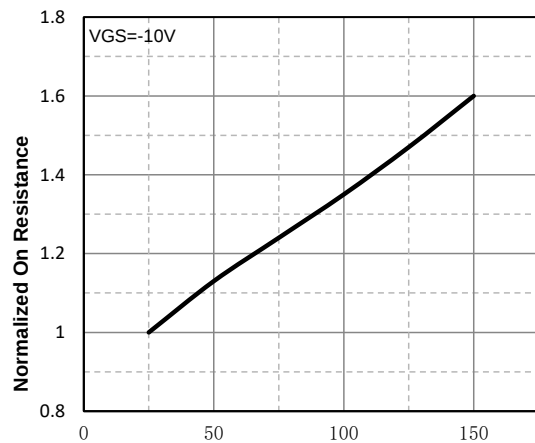
Typical Operating Characteristics



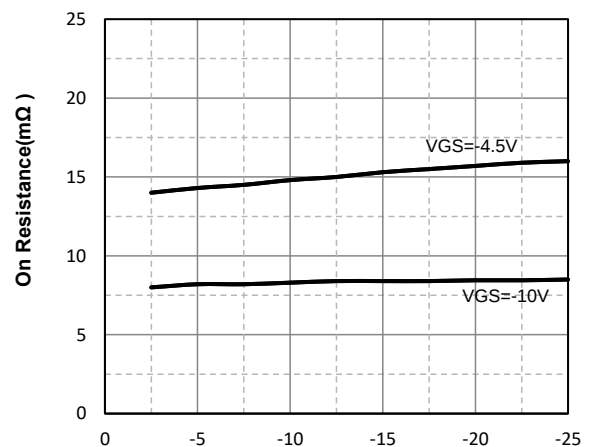
VDS, Drain -Source Voltage (V)
Fig1. Typical Output Characteristics



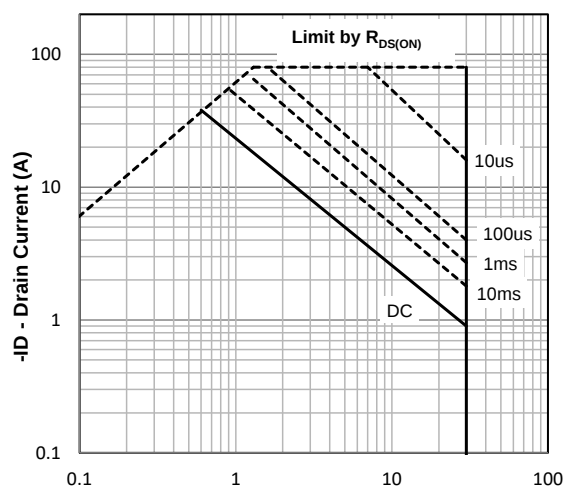
Qg -Total Gate Charge (nC)
Fig2. Typical Gate Charge Vs. Gate-Source Voltage



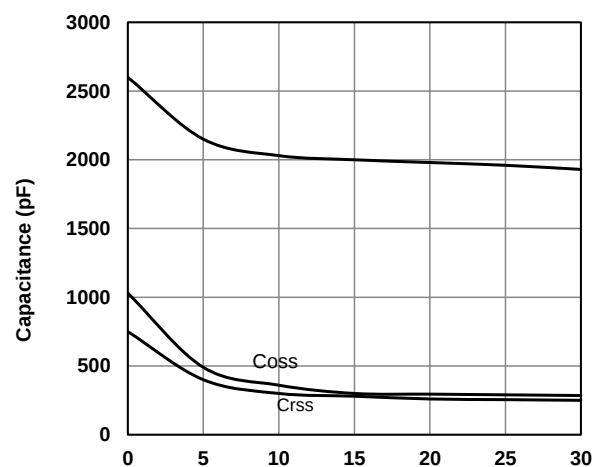
Tj - Junction Temperature (°C)
Fig3. Normalized On-Resistance Vs. Temperature



ID, Drain-Source Current (A)
Fig4. On-Resistance Vs. Drain-Source Current

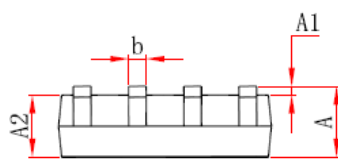
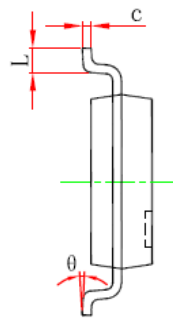
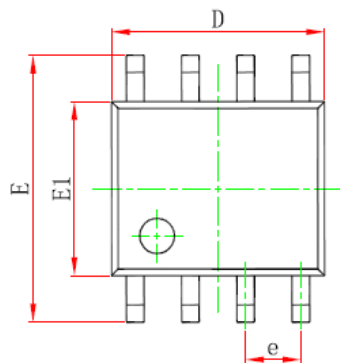


-VDS, Drain -Source Voltage (V)
Fig5. Maximum Safe Operating Area



-VDS, Drain-Source Voltage (V)
Fig6. Typical Capacitance Vs. Drain-Source Voltage

SOP-8 Package information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.450	1.750	0.053	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	1.270 (BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°