

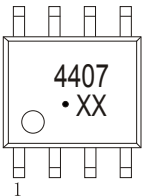
DESCRIPTION

The LX4407 combines advanced trench MOSFET technology with a low resistance package to provide extremely low RDS(ON). This device is ideal for load switch and battery protection applications

APPLICATIONS

- Battery protection applications
- Load switch

MARKING

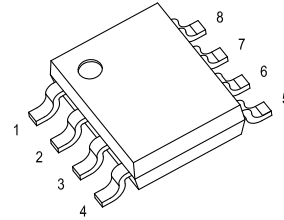


4407= Device code.
Solid dot = Green molding compound device, if none, the normal device.
XX = Code.

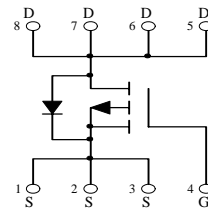
P-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	10mΩ@-10V	-15A
	14mΩ@-6V	

SOP8



Equivalent Circuit



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	$I_D^{(1)}$	-15	A
Pulsed Drain Current	$I_{DM}^{(2)}$	-48	A
Single Pulsed Avalanche Energy	$E_{AS}^{(3)}$		mJ
Maximum Power Dissipation	$P_D^{(6)}$	3	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}^{(6)}$	41.7	°C/W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55~+150	°C



MOSFET ELECTRICAL CHARACTERISTICS

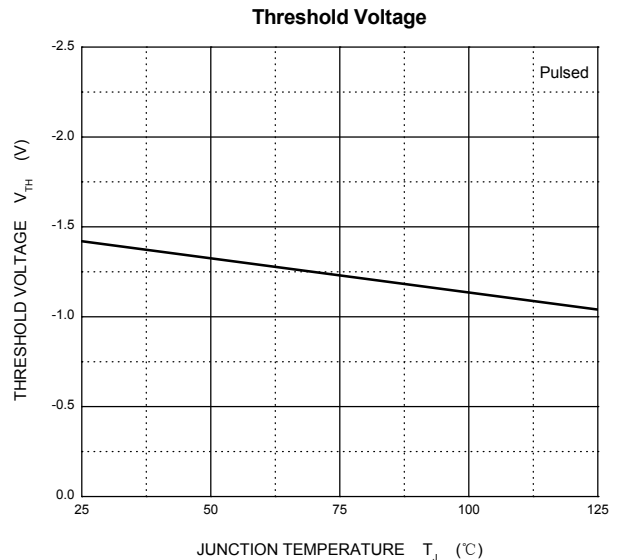
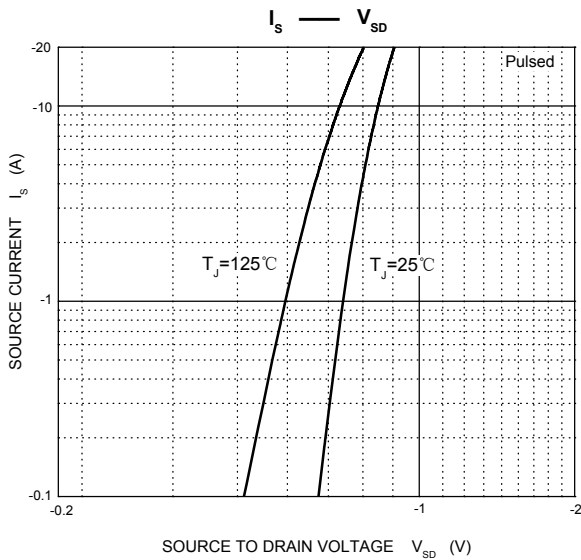
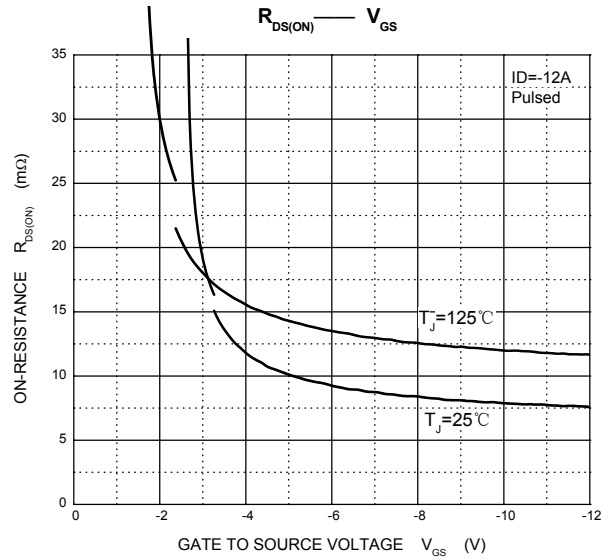
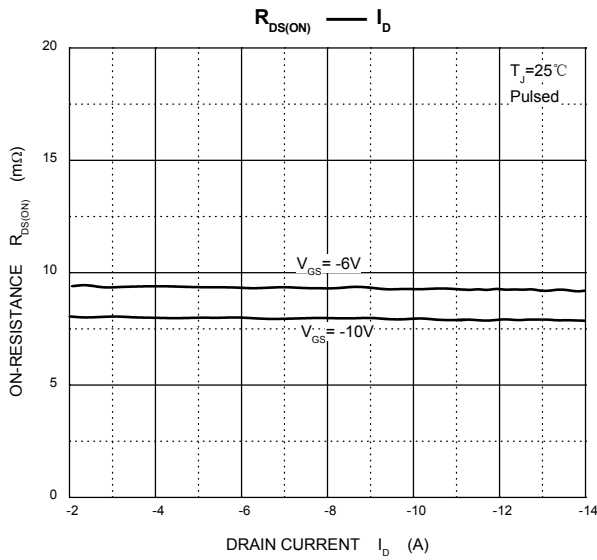
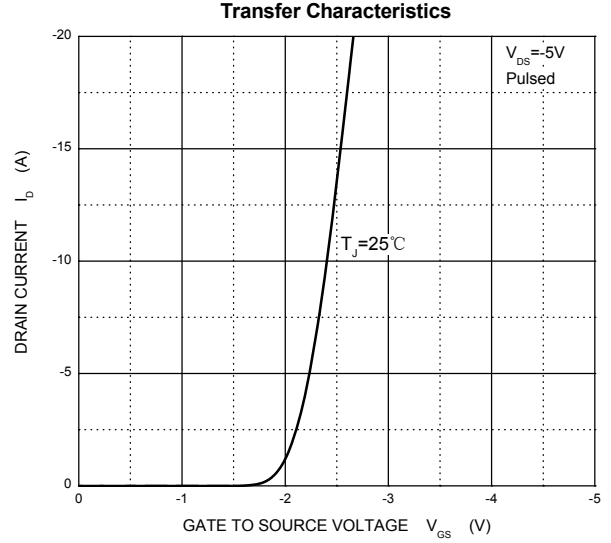
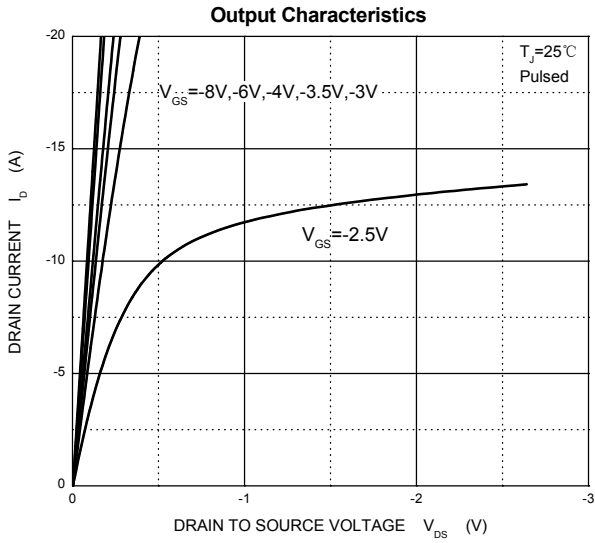
Ta =25 °C unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Zero gate voltage drain current	I_{DSS}	$V_{DS}=-24V, V_{GS}=0V$	$T_J=25^\circ C$		-1	A
			$T_J=125^\circ C$		-200	
Gate-body leakage current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
On characteristics^④						
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0	-1.6	-3.0	V
Static drain-source on-state resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-10A$ $V_{GS}=-4.5V, I_D=-7A$		10	13	m Ω
				14	20	m Ω
Forward transconductance	g_{FS}	$V_{DS}=-10V, I_D=-10A$	20			S
Dynamic characteristics^{④⑤}						
Input capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		2500		pF
Output capacitance	C_{oss}			410		
Reverse transfer capacitance	C_{rss}			280		
Gate resistance	R_g	$f=1MHz$		5.6		Ω
Switching characteristics^{④⑤}						
Total gate charge	Q_g	$V_{DS}=-15V, V_{GS}=-10V, I_D=-10A$		48	96	nC
Gate-source charge	Q_{gs}			12	24	
Gate-drain charge	Q_{gd}			14	28	
Turn-on delay time	$T_{d(on)}$	$V_{DS}=-15V, V_{GS}=-10V, R_L=1.25\Omega, R_G=3\Omega$		15		ns
Turn-on rise time	t_r			11		
Turn-off delay time	$T_{d(off)}$			44		
Turn-off fall time	t_f			21		
Drain-Source Diode Characteristics						
Drain-source diode forward voltage	$V_{SD}^{④}$	$V_{GS}=0V, I_S=-2A$			-1.2	V
Continuous drain-source diode forward current	$I_S^{①}$				-12	A
Pulsed drain-source diode forward current	$I_{SM}^{②}$				-48	A

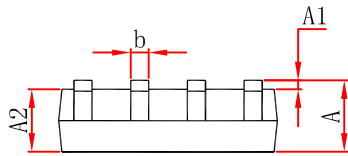
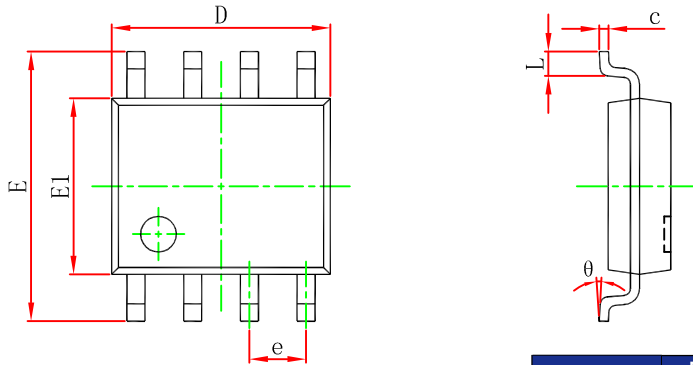
Notes:

1. $T_C=25^\circ C$ Limited only by maximum temperature allowed.
2. $P_W \leq 10\mu s$, Duty cycle $\leq 1\%$.
3. EAS condition: $V_{DD}=TV, V_{GS}=-10V, L=TmH, R_g=25\Omega$ Starting $T_J = 25^\circ C$.
4. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
5. Guaranteed by design, not subject to production.
6. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_a=25^\circ C$.

Typical Characteristics

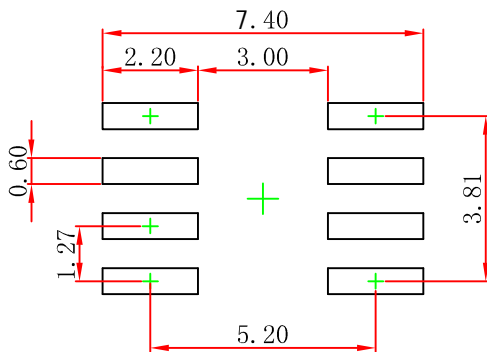


SOP8 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	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	4.800	5.000	0.189	0.197
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°

SOP8 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.