Dual N-Channel 30-V (D-S) MOSFET

PRODUCT SUMMARY		
V_{DS} (V)	$R_{DS(on)}$ (Ω)	I_D (A)[d]
30	0.040 at V_{GS} = 10 V	5.8
	0.050 at V_{GS} = 4.5 V	5.5

Features

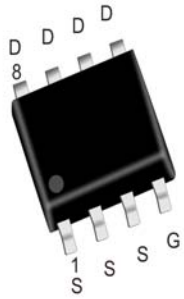
- Low Gate Charge
- RoHS Compliant

Applications

- Low Current DC/DC Conversion
- Notebook System Power

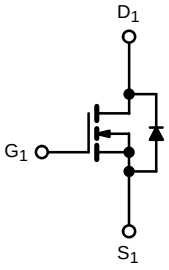
Pin Configuration

SOP-8L

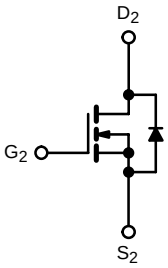


Packing Information

Device	Marking	Reel Size	Tape Width	Quantity
EC4936	13D .XXX	12"	13mm	3000pcs



N-Channel MOSFET



N-Channel MOSFET

Absolute Maximum Ratings (TJ=25℃ Unless Otherwise Noted)

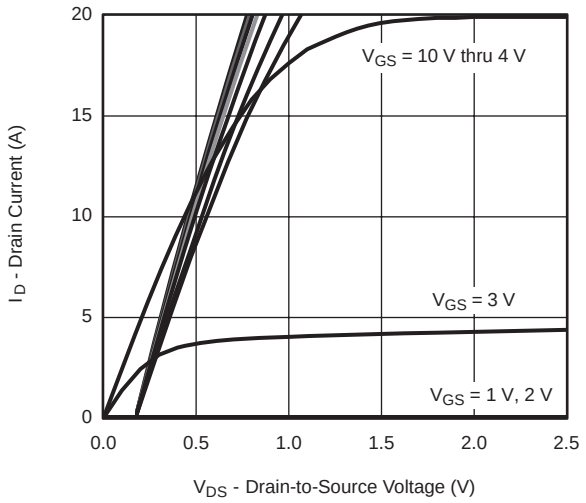
Symbol	Parameter	Value	Unit
P-MOSFET			
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current	5.8	A
I_{DM}	Pulse Drain Current	20	A
P_D	Maximum Power Dissipation	2.3	W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55~+150	℃
T_L	Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	260	℃
Thermal Resistance Ratings			
R_{thJA}	Maximum Junction-to-Ambient t≤10 s	75	℃/W
R_{thJF}	Maximum Junction-to-Foot (Drain) Steady State	55	℃/W

Notes:
a. Surface Mounted on 1" x 1" FR4 board.
b. t = 10 s.
c. Maximum under Steady State conditions is 110 °C/W.
d. Based on T_C = 25 °C.

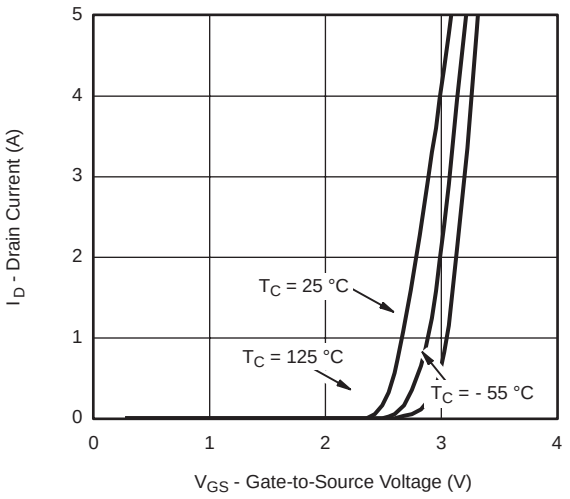
Electrical Characteristics (T_J =25℃ Unless Otherwise Specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
STATIC PARAMETERS						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} =0V, I_D = 250 μA	30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-16V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS}=0V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D = 250 μA	1.2		3.0	V
Drain-source on-resistance(note1)	$R_{DS(on)}$	V_{GS} =10V, I_D =-5A		33	40	mΩ
		V_{GS} =4.5V, I_D = 4.7A		41	50	mΩ
Forward transconductance(note1)	g_{FS}	V_{DS}= 10V,I_D= 5A		15		S
Diode forward voltage(note1)	V_{SD}	I_S=A, V4 GS = 0V		0.8	1.2	V
DYNAMIC						
Input capacitance	C_{iss}	V_{DS} =15V,V GS =0V,f =1MHz			325	pF
Output capacitance	C_{oss}				60	pF
Reverse transfer capacitance	C_{rss}				30	pF
SWITCHING PARAMETERS (note 2)						
Turn-on delay time	$t_{d(on)}$	V_{GS}=4.5V,V_{DD} = 15V, R_L=3.8Ω,R_G=1Ω, I_D=4 A		12	18	ns
Turn-on rise time	t_r			13	20	ns
Turn-off delay time	$t_{d(off)}$			16	25	ns
Turn-off fall time	t_f			11	17	ns
Total Gate Charge	Q_g	V_{DS} =15V,V GS =4.5V, I_D =5A		2.8	4.2	nC
Gate-Source Charge	Q_{gs}			1.1		nC
Gate-Drain Charge	Q_{gd}			0.8		nC

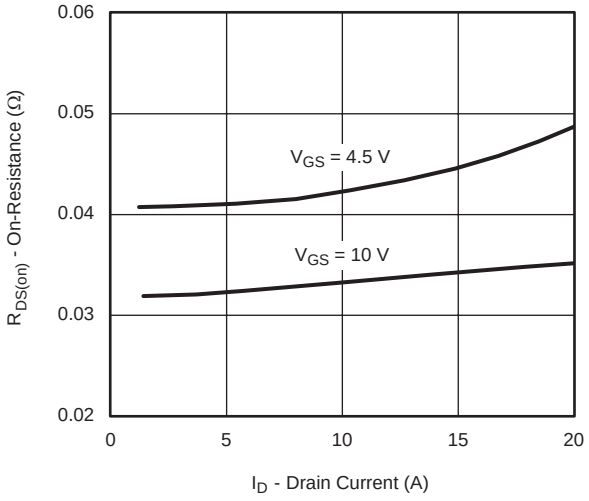
MOSFET TYPICAL CHARACTERISTICS (25°C, unless otherwise noted)



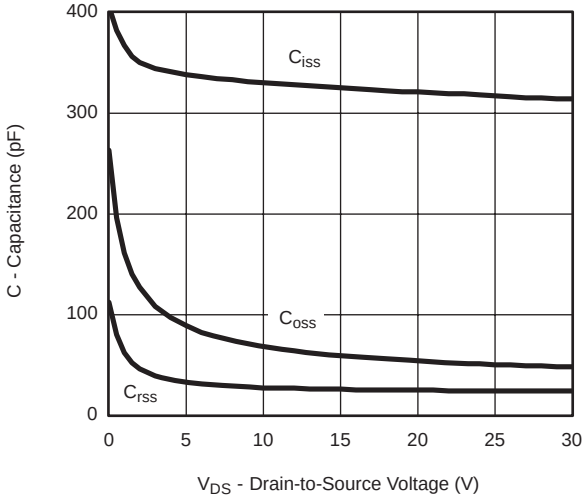
Output Characteristics



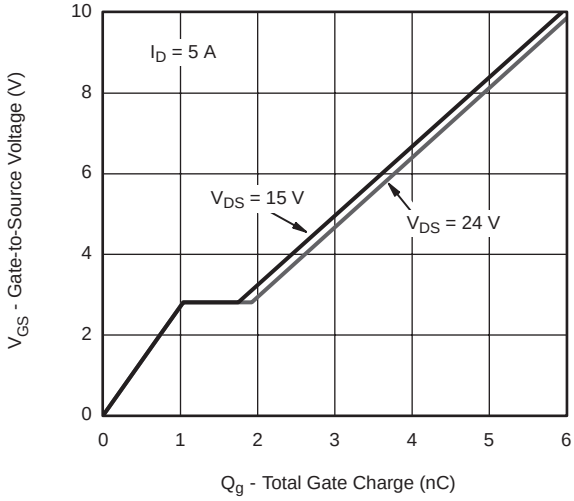
Transfer Characteristics



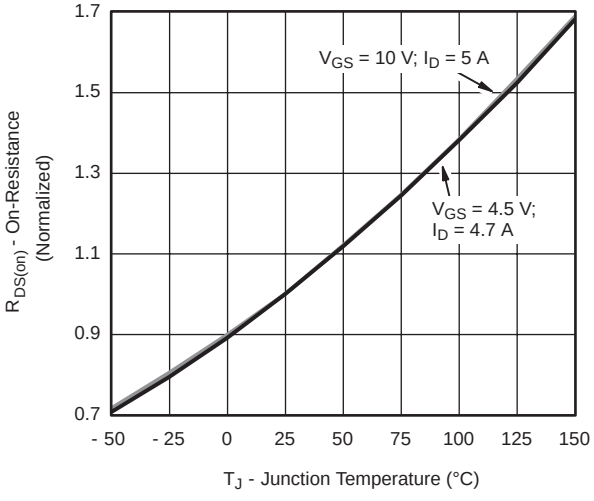
On-Resistance vs. Drain Current



Capacitance

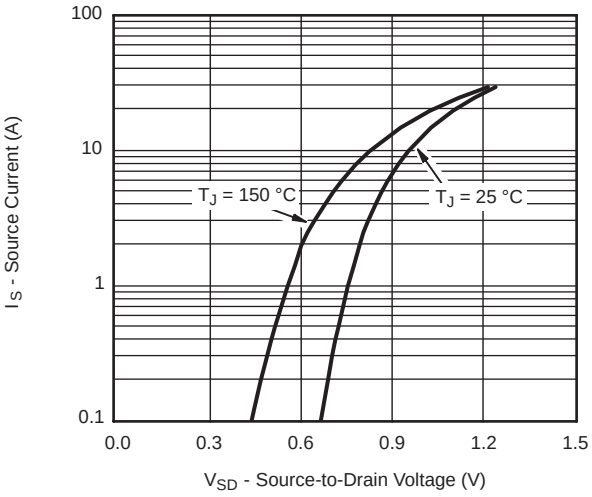


Gate Charge

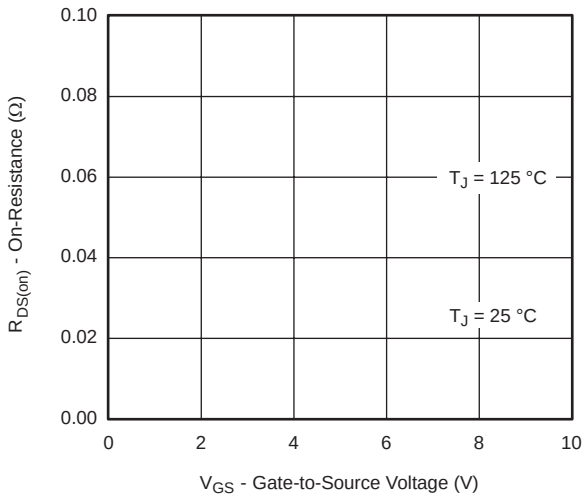


On-Resistance vs. Junction Temperature

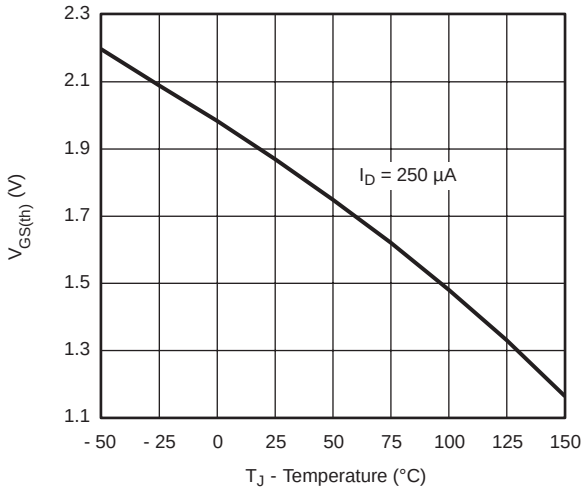
MOSFET TYPICAL CHARACTERISTICS (25°C, unless otherwise noted)



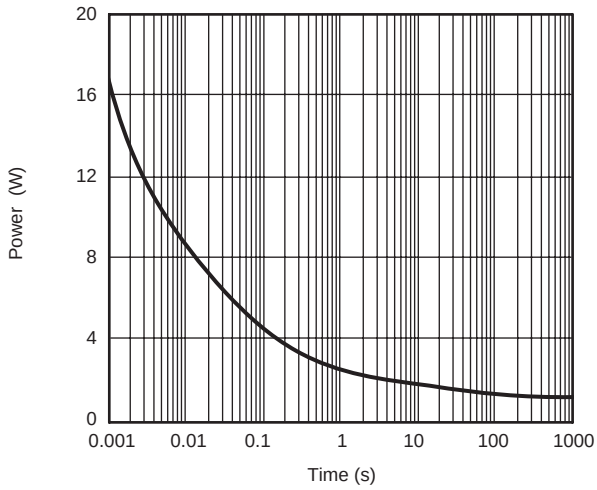
Source-Drain Diode Forward Voltage



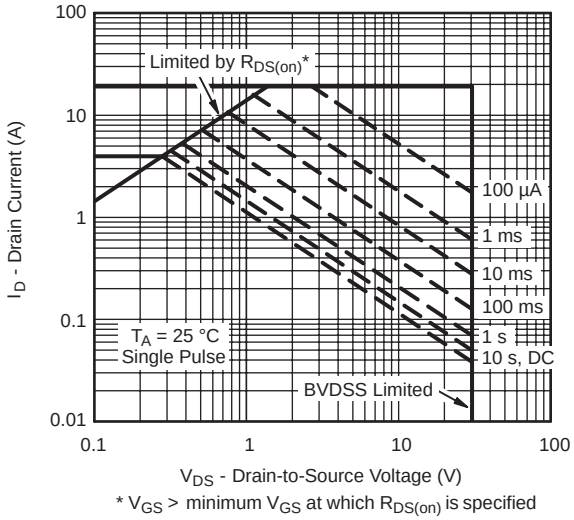
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



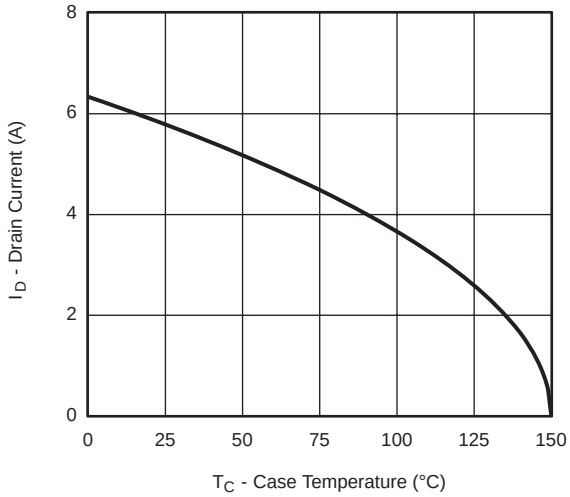
Single Pulse Power



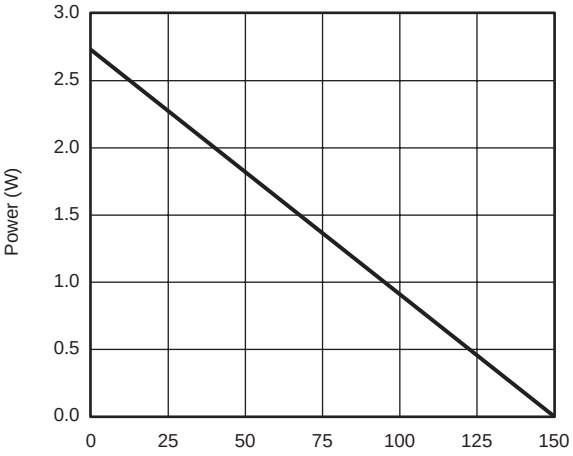
* V_{GS} > minimum V_{GS} at which $R_{DS(on)}$ is specified

Safe Operating Area, Junction-to-Ambient

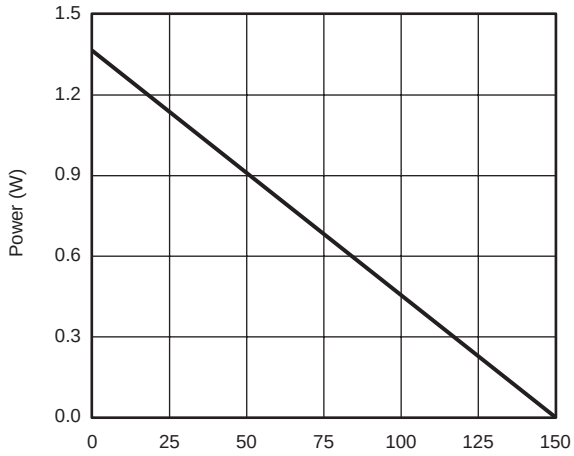
MOSFET TYPICAL CHARACTERISTICS (25°C, unless otherwise noted)



Current Derating*

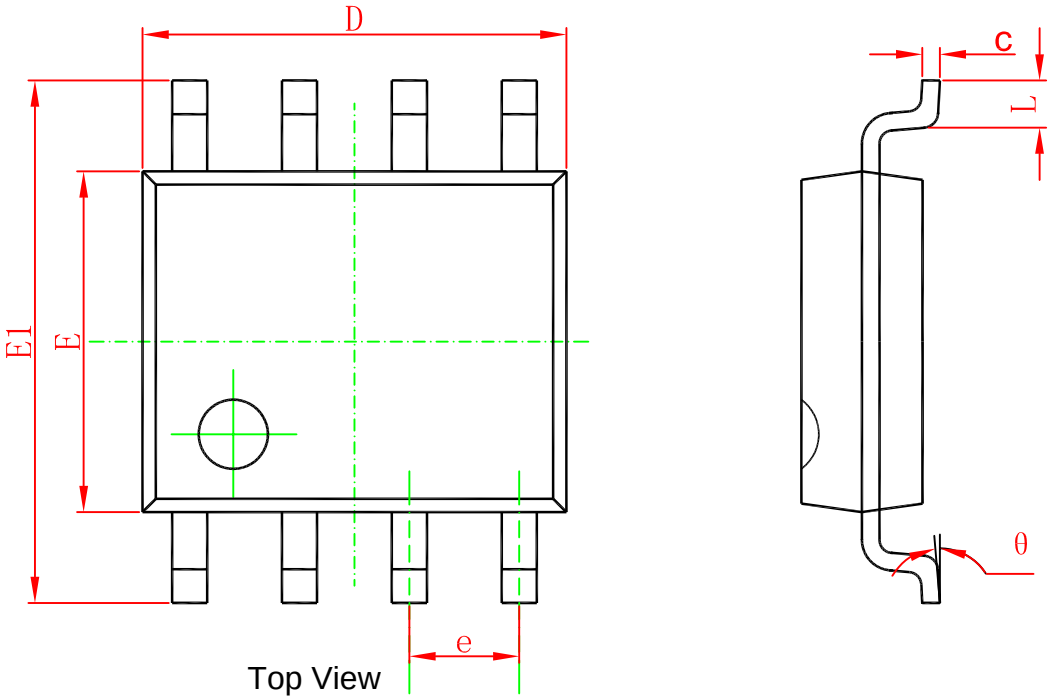


Power, Junction-to-Case

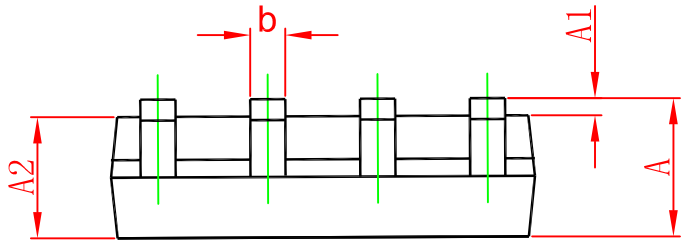


Power, Junction-to-Ambient

SOP-8L Package Information



Top View



Side View

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	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	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°