

P-Channel 30V (D-S) MOSFET

V _{DS}	R _{DS(on)} MAX	I _D
-30V	45 mΩ@-10V	-4.8
	53 mΩ@-4.5V	-4.4
	80 mΩ@-2.5V	-3.6

Features

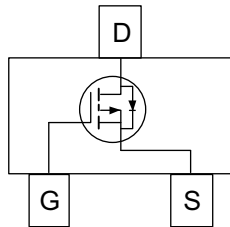
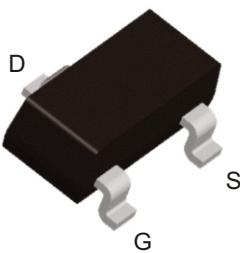
- Small package SOT23-3L
- Low Gate Charge
- RoHS Compliant

Applications

- Power Management for Portable and Consumer
 - Load Switches
 - OVP (Over Voltage Protection) Switch

Pin Configuration

SOT23-3L



Packing Information

Device	Marking	Reel Size	Tape Width	Quantity
EC2371	13D .XXX	7"	8mm	3000pcs

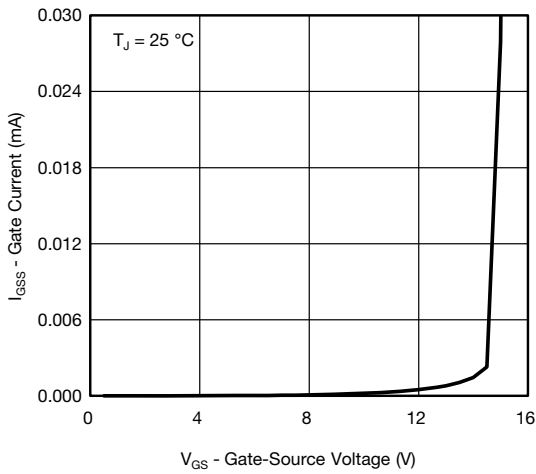
Absolute Maximum Ratings (T_J=25 °C Unless Otherwise Noted)

Symbol	Parameter	Value	Unit
P-MOSFET			
V _{DS}	Drain-Source Voltage	-30	V
V _{GS}	Gate-Source Voltage	±12	V
I _D	Continuous Drain Current	-3.8	A
I _{DM}	Pulse Drain Current	-20	A
P _D	Maximum Power Dissipation	1.7	W
R _{θJA}	Thermal Resistance from Junction to Ambient	114	°C/W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~+150	°C
T _L	Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	260	°C
Thermal Resistance Ratings			
R _{thJA}	Maximum Junction-to-Ambient ^b	100	°C/W
	Maximum Junction-to-Ambient ^c	130	°C/W

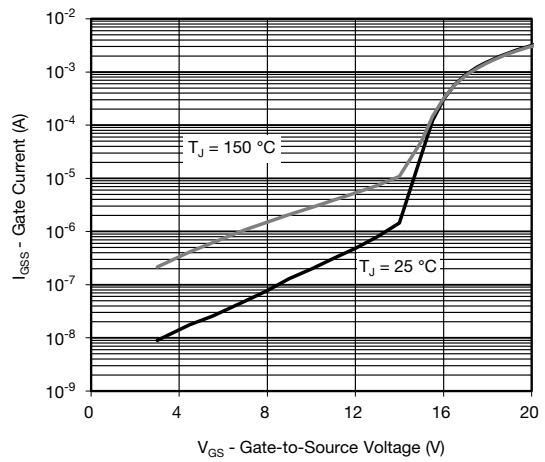
Electrical Characteristics (T_J = 25°C Unless Otherwise Specified)

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} = -30V, V _{GS} = 0V			-1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±10	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250 μA	-0.6		-1.5	V
Drain-source on-resistance(note1)	R _{DS(on)}	V _{GS} = -10V, I _D = -3.7A		37	45	mΩ
		V _{GS} = -4.5V, I _D = -2A		44	53	mΩ
		V _{GS} = -2.5V, I _D = -2A		66	80	mΩ
Diode forward voltage(note1)	V _{SD}	I _S = -2.9A, V _{GS} = 0V		-0.8	-1.2	V
DYNAMIC						
Turn-on delay time	t _{d(on)}	V _{GS} = -4.5V, V _{DD} = -15V, R _L = 5.2Ω, R _G = 1Ω, I _D = -2.9A		28	42	ns
Turn-on rise time	t _r			65	98	ns
Turn-off delay time	t _{d(off)}			47	71	ns
Turn-off fall time	t _f			62	93	ns
Total Gate Charge	Q _g	V _{DS} = -10V, V _{GS} = -10V, I _D = -3.7A		22.8	35	nC
		V _{DS} = -10V, V _{GS} = -4.5V, I _D = -3.7A		10.6	16	nC
Gate-Source Charge	Q _{gs}	I _D = -3.7A		1.7		nC
Gate-Drain Charge	Q _{gd}			2.6		nC

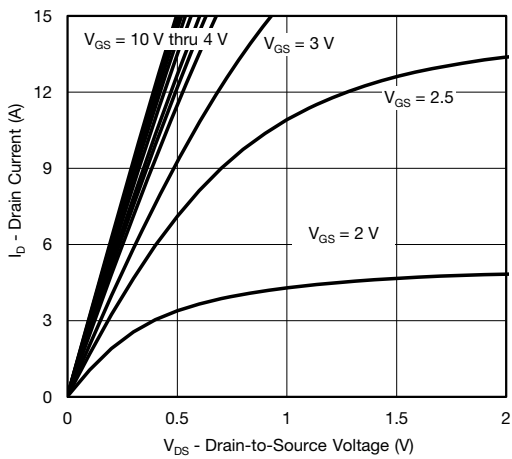
MOSFET TYPICAL CHARACTERISTICS (25°C, unless otherwise noted)



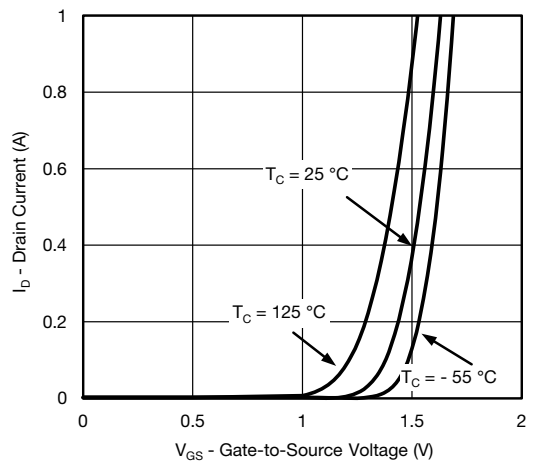
Gate Current vs. Gate-Source Voltage



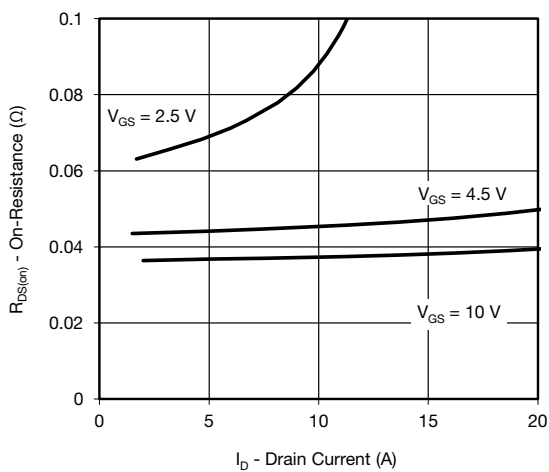
Gate Current vs. Gate-Source Voltage



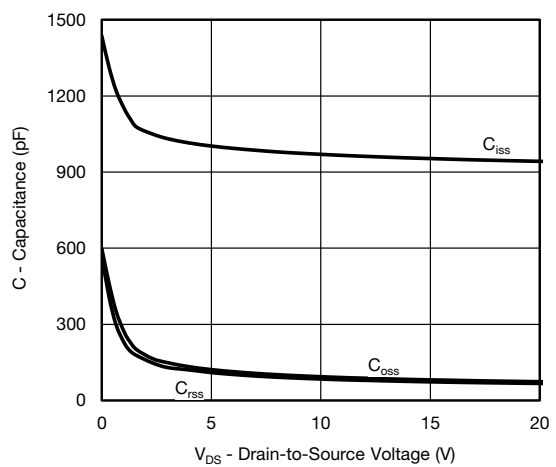
Output Characteristics



Transfer Characteristics

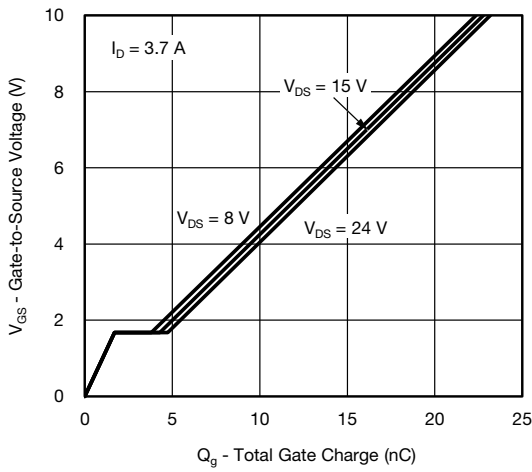


On-Resistance vs. Drain Current

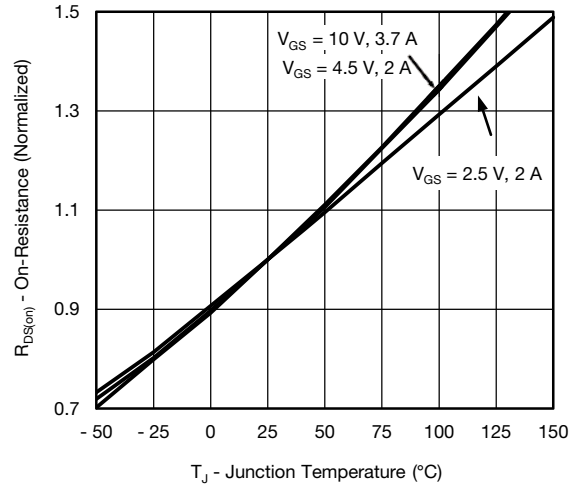


Capacitance

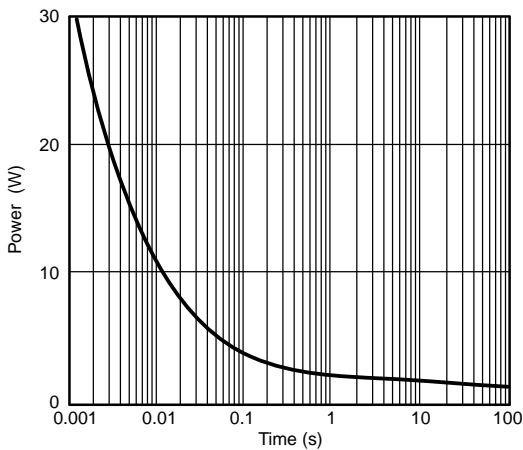
MOSFET TYPICAL CHARACTERISTICS (25°C, unless otherwise noted)



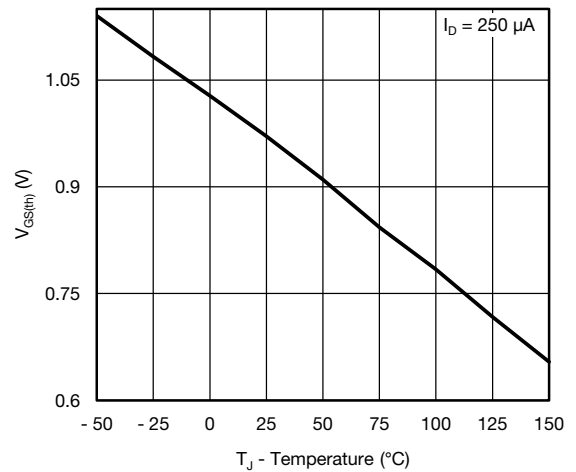
Gate Charge



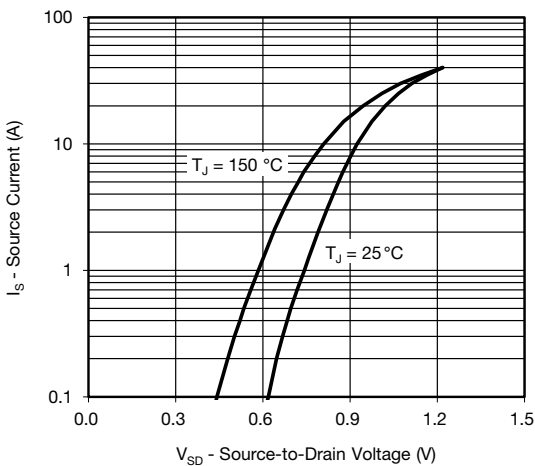
On-Resistance vs. Junction Temperature



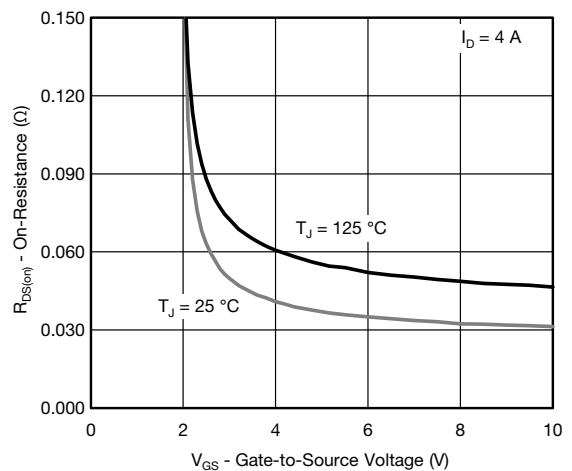
Single Pulse Power, Junction-to-Ambient



Threshold Voltage

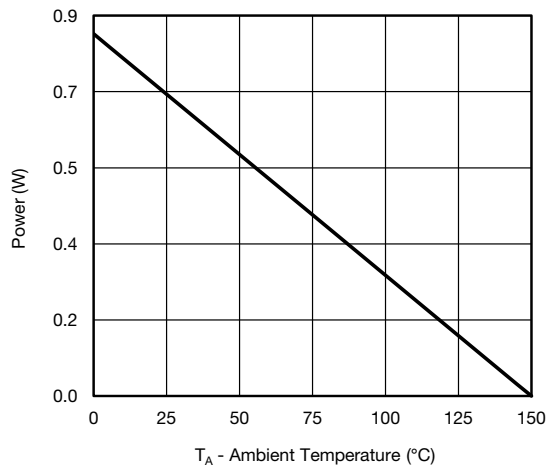
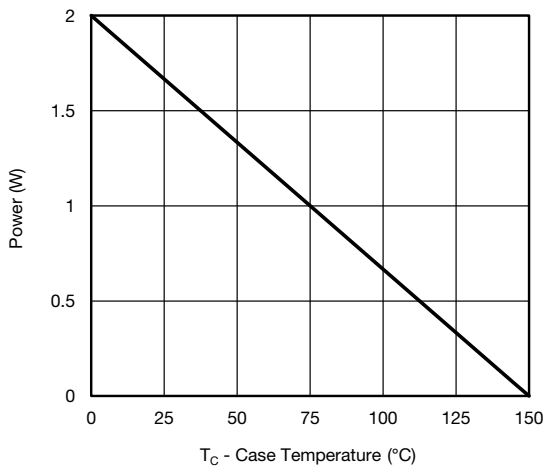
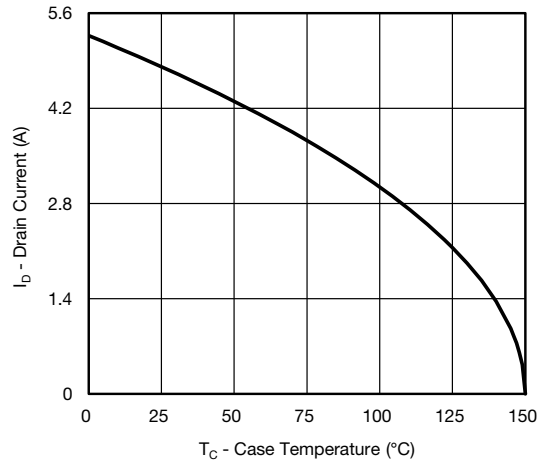
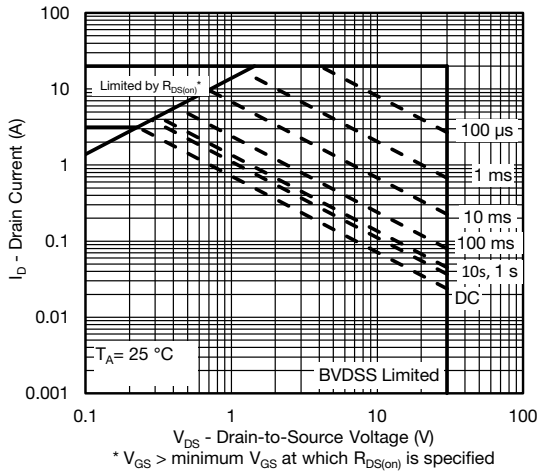


Source-Drain Diode Forward Voltage



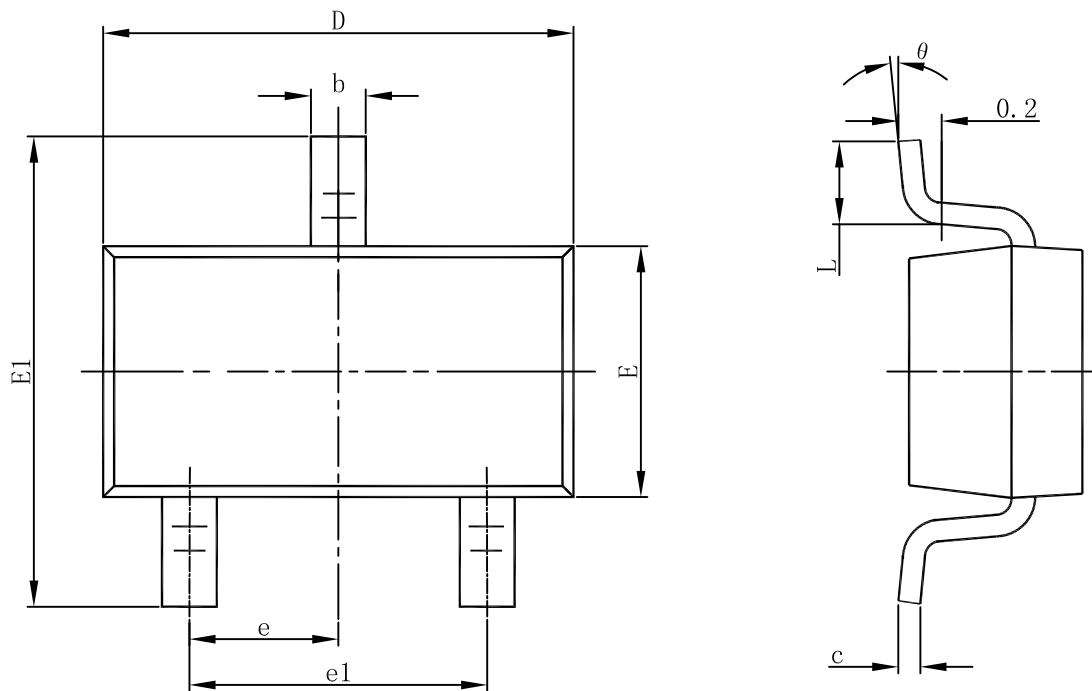
On-Resistance vs. Gate-to-Source Voltage

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

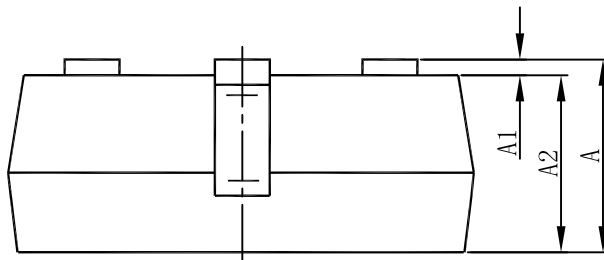


* The power dissipation P_D is based on $T_{J(max.)} = 150\text{ }^\circ\text{C}$, using junction-to-case thermal resistance, and is more useful in settling the upper dissipation limit for cases where additional heatsinking is used. It is used to determine the current rating, when this rating falls below the package limit.

SOT23-3L Package Information



Top View



Side View

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°