

## P-Channel 30V (D-S) MOSFET

$V_{DS}$	$R_{DS(on)MAX}$	$I_D$
-30V	42 m $\Omega$ @-10V	-5A
	54 m $\Omega$ @-6V	-4.4A
	68 m $\Omega$ @-4.5V	-3.9A

### Features

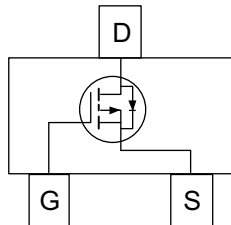
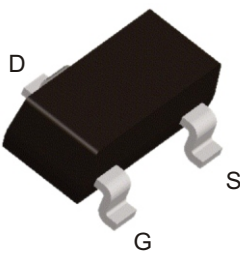
- Small package SOT23-3L
- Low Gate Charge
- RoHS Compliant

### Applications

- Load Switch
- Notebook Adaptor Switch
- DC/DC Converter
- Power management

### Pin Configuration

SOT23-3L



### Packing Information

Device	Marking	Reel Size	Tape Width	Quantity
EC2347	13D .XXX	7"	8mm	3000pcs

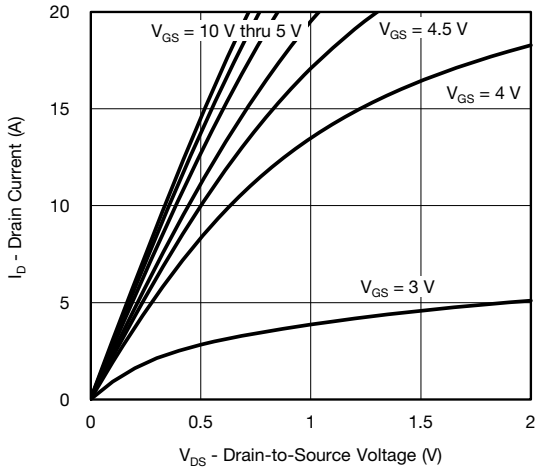
### Absolute Maximum Ratings (T<sub>J</sub>=25 °C Unless Otherwise Noted)

Symbol	Parameter	Value	Unit
<b>P-MOSFET</b>			
$V_{DS}$	Drain-Source Voltage	-30	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Continuous Drain Current	-5	A
$I_{DM}$	Pulse Drain Current	-20	A
$P_D$	Maximum Power Dissipation	1.7	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	221	°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
<b>Thermal Resistance Ratings</b>			
$R_{thJA}$	Maximum Junction-to-Ambient <sup>b</sup>	100	°C/W
	Maximum Junction-to-Ambient <sup>c</sup>	130	°C/W

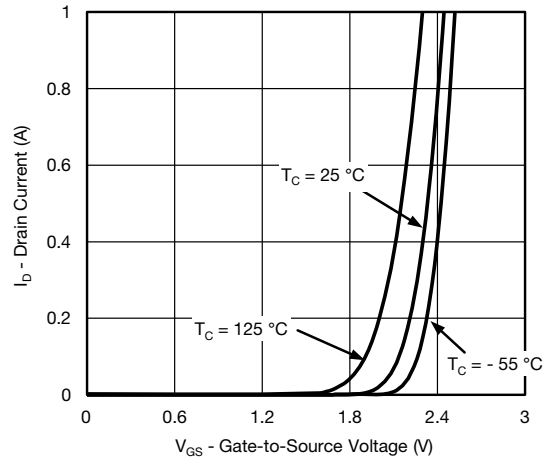
**Electrical Characteristics (T<sub>J</sub> = 25°C Unless Otherwise Specified)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
<b>STATIC PARAMETERS</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250 μA	-30			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = -30V, V <sub>GS</sub> = 0V			-1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±100	nA
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250 μA	-1		-2.5	V
Drain-source on-resistance(note1)	R <sub>DS(on)</sub>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -3.8A		33	42	mΩ
		V <sub>GS</sub> = -6V, I <sub>D</sub> = -3.3A		41	54	mΩ
		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -3A		50	68	mΩ
Forward transconductance(note1)	g <sub>FS</sub>	V <sub>DS</sub> = -5V, I <sub>D</sub> = -3.8A		7		S
Diode forward voltage(note1)	V <sub>SD</sub>	I <sub>S</sub> = -3A, V <sub>GS</sub> = 0V		-0.8	-1.2	V
<b>DYNAMIC</b>						
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, f = 1MHz		705		pF
Output capacitance	C <sub>oss</sub>			93		pF
Reverse transfer capacitance	C <sub>rss</sub>			73		pF
<b>SWITCHING PARAMETERS (note 2)</b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>GS</sub> = -6V, V <sub>DD</sub> = -15V, R <sub>L</sub> = 5 Ω, R <sub>G</sub> = 1Ω, I <sub>D</sub> = -3A		10	20	ns
Turn-on rise time	t <sub>r</sub>			9	18	ns
Turn-off delay time	t <sub>d(off)</sub>			18	27	ns
Turn-off fall time	t <sub>f</sub>			7	14	ns
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = -10V, I <sub>D</sub> = -5A		14.5	22	nC
				6.9	10.4	nC
Gate-Source Charge	Q <sub>gs</sub>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -5A		2.3		nC
Gate-Drain Charge	Q <sub>gd</sub>			2.1		nC

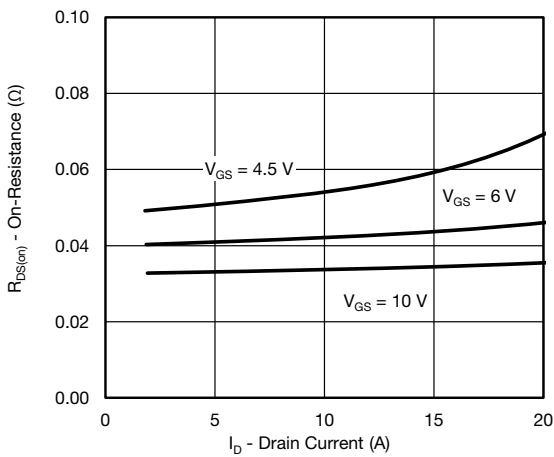
**MOSFET TYPICAL CHARACTERISTICS (25°C, unless otherwise noted)**



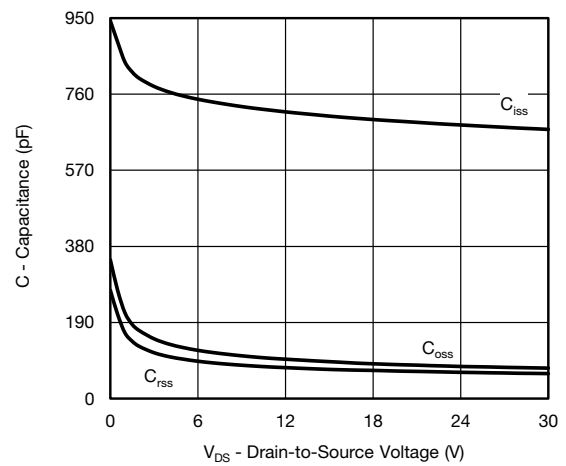
**Output Characteristics**



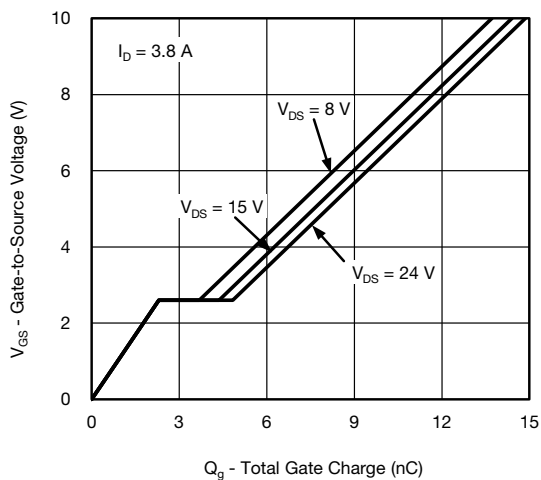
**Transfer Characteristics**



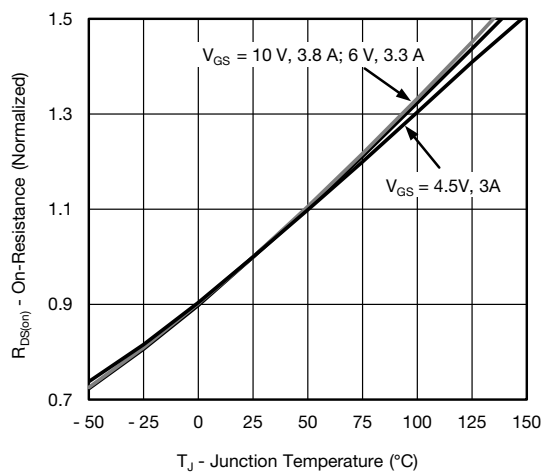
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**Capacitance**

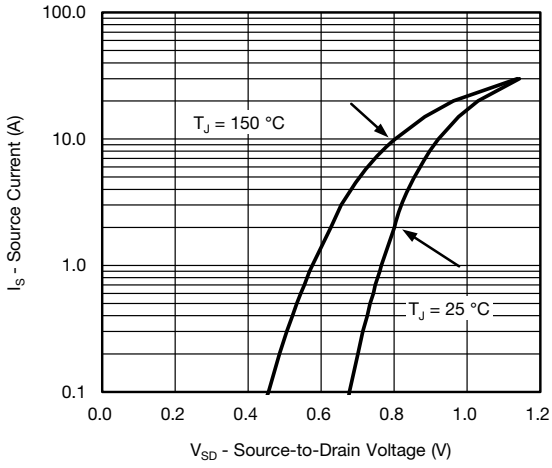


**Gate Charge**

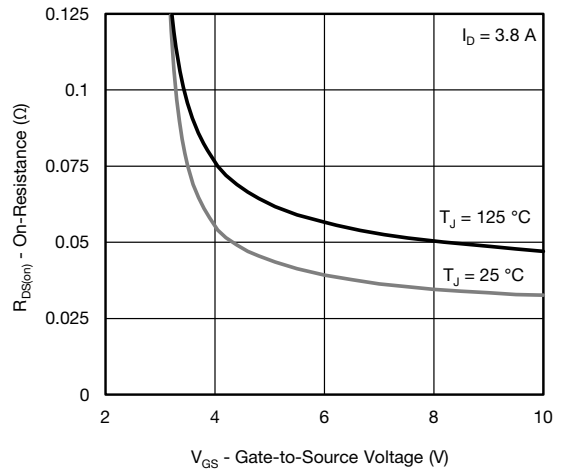


**On-Resistance vs. Junction Temperature**

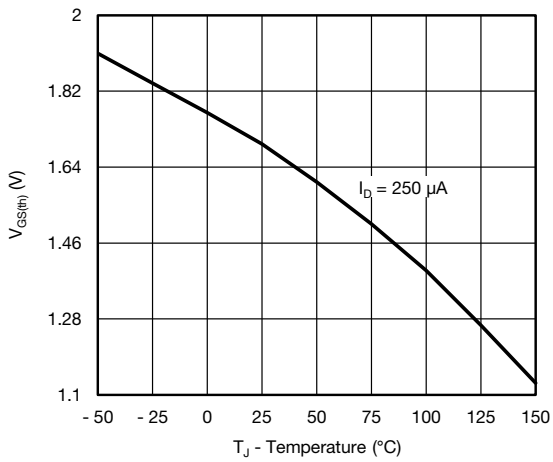
**MOSFET TYPICAL CHARACTERISTICS (25°C, unless otherwise noted)**



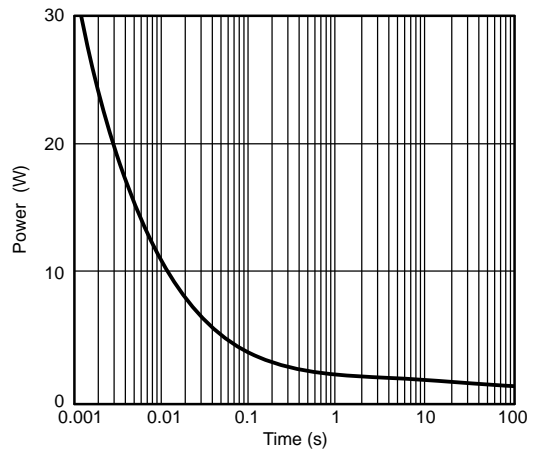
**Source-Drain Diode Forward Voltage**



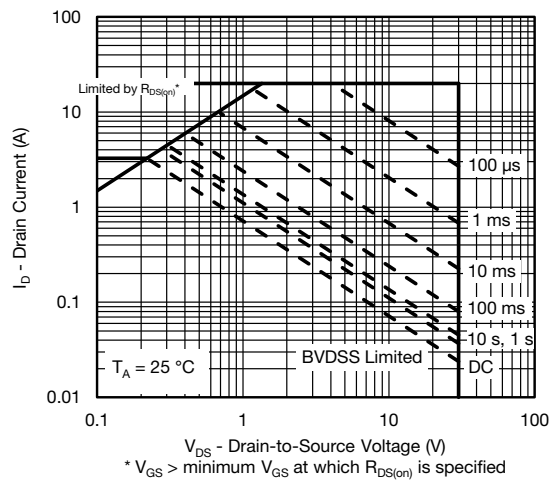
**On-Resistance vs. Gate-to-Source Voltage**



**Threshold Voltage**

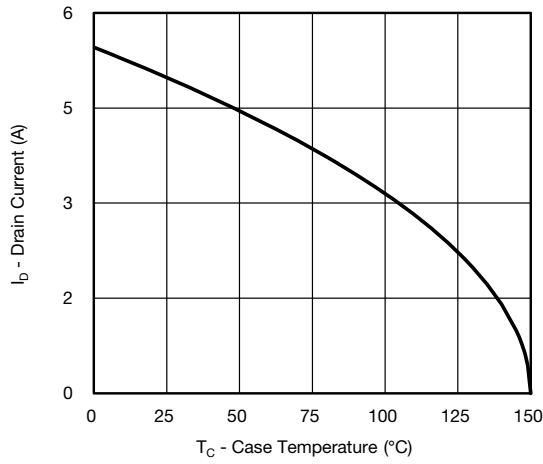


**Single Pulse Power**

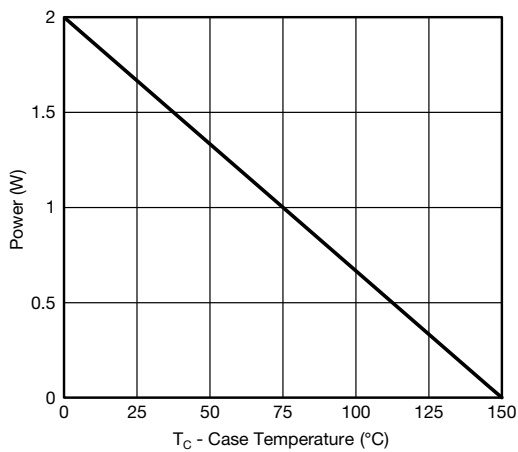


**Safe Operating Area**

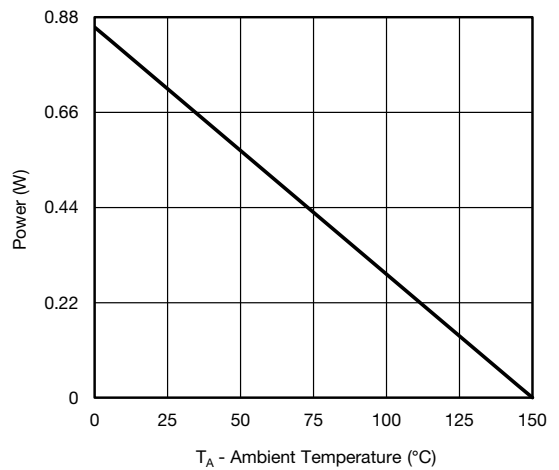
**SCHOTTKY TYPICAL CHARACTERISTICS (25°C, unless otherwise noted)**



**Current Derating\***



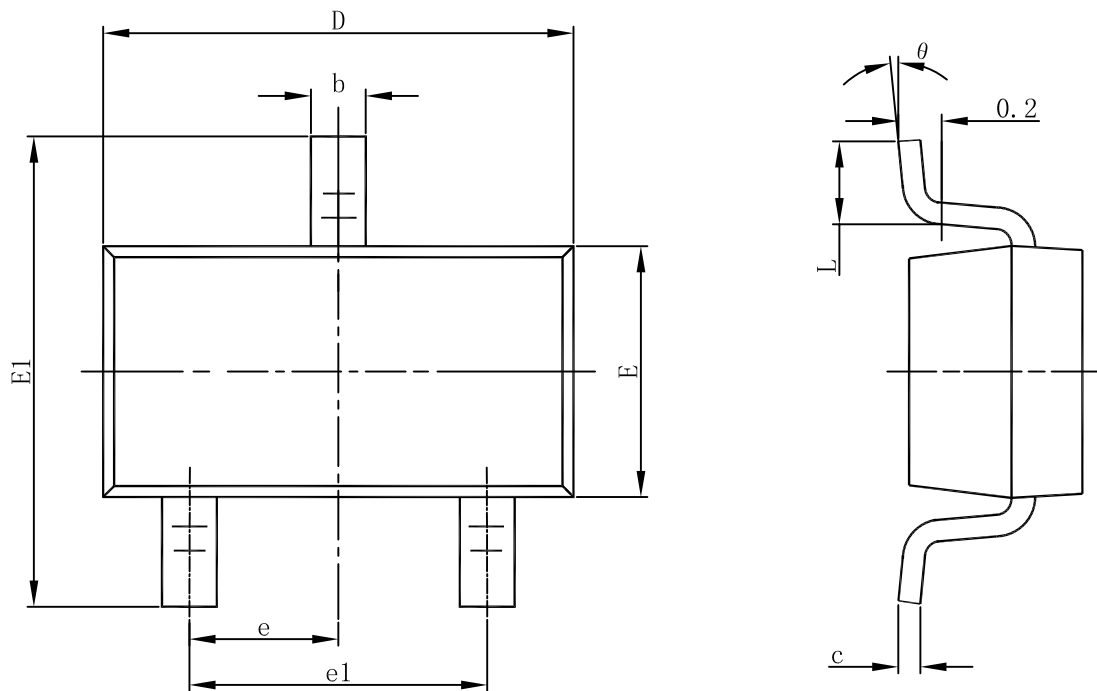
**Power, Junction-to-Case**



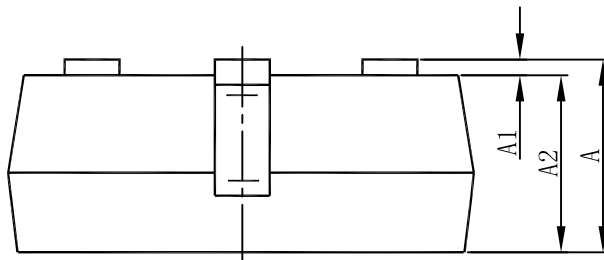
**Power, Junction-to-Ambient**

\* The power dissipation P<sub>D</sub> is based on T<sub>J(max)</sub> = 150 °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
$\theta$	0°	8°	0°	8°