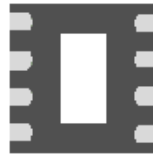
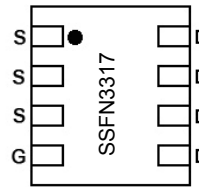


### Main Product Characteristics

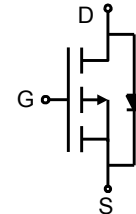
$V_{(BR)DSS}$	-30V
$R_{DS(on)MAX}$	18mΩ@-10V
	36mΩ@-4.5V
$I_D$	-7A



DFN3×3- 8L



Marking and Pin Assignment



Schematic Diagram

### Features and Benefits

- Advanced MOSFET process technology
- Ideal for battery operated systems, load switching, power converters and other general purpose applications
- Low on-resistance with low gate charge
- Fast switching and reverse body recovery



### Description

The SSFN3317 utilizes the latest techniques to achieve high cell density and low on-resistance. These features make this device extremely efficient and reliable for use in high efficiency switch mode power supply and a wide variety of other applications.

### Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V <sub>DS</sub>	-30	V
Gate-Source Voltage	V <sub>GS</sub>	±25	V
Drain Current-Continuous@Current-Pulsed <sup>1</sup>	I <sub>D</sub> (25°C)	-7	A
	I <sub>D</sub> (70°C)	-5.5	A
	I <sub>DM</sub>	-40	A
Maximum Power Dissipation	P <sub>D</sub>	3.1	W
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

### Thermal Characteristics

Thermal Resistance, Junction-to-Ambient <sup>2</sup>	R <sub>θJA</sub>	40	°C/W
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### Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise specified)

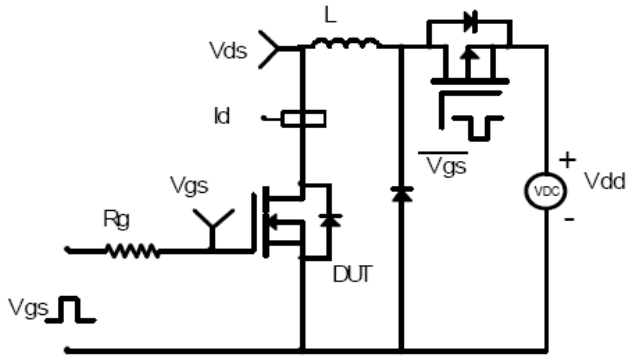
Parameter	Symbol	Condition	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250μA	-30	-	-	V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V	-	-	-1	μA
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±25V, V <sub>DS</sub> =0V	-	-	±100	nA
<b>ON CHARACTERISTICS<sup>3</sup></b>						
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA	-1.7	-2.2	-3	V
Drain-Source On-State Resistance	R <sub>DS(ON)</sub>	V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-6A	-	26	36	mΩ
		V <sub>GS</sub> =-10V, I <sub>D</sub> =-8A	-	14	18	mΩ
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-10A	-	18	-	S
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> =15V, V <sub>GS</sub> =0V , F=1.0MHz	-	1200	-	PF
Output Capacitance	C <sub>oss</sub>		-	260	-	PF
Reverse Transfer Capacitance	C <sub>rss</sub>		-	145	-	PF
<b>SWITCHING CHARACTERISTICS</b>						
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>DS</sub> =-15V, V <sub>GS</sub> =-10V, R <sub>GEN</sub> =3Ω, I <sub>D</sub> =1A	-	10	-	nS
Turn-on Rise Time	t <sub>r</sub>		-	9	-	nS
Turn-Off Delay Time	t <sub>d(off)</sub>		-	22	-	nS
Turn-Off Fall Time	t <sub>f</sub>		-	8	-	nS
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> =-15V, I <sub>D</sub> =-10A, V <sub>GS</sub> =-10V	-	18	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	5	-	nC
Gate-Drain Charge	Q <sub>gd</sub>		-	3.5	-	nC
Body Diode Reverse Recovery Time	T <sub>rr</sub>	I <sub>F</sub> =-10A, di/dt=100A/μs	-	24	-	nS
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>		-	12	-	nC
<b>DRAIN-SOURCE DIODE CHARACTERISTICS</b>						
Diode Forward Voltage <sup>3</sup>	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =-1A	-	-0.74	-1	V

**Notes:**

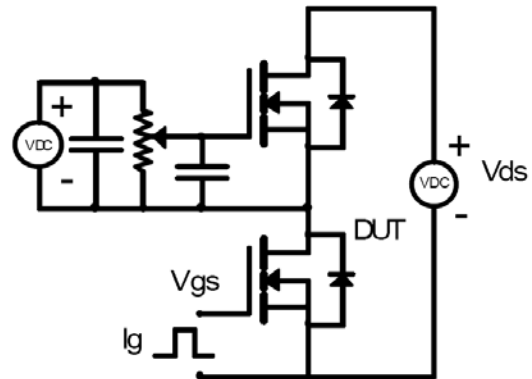
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on 1in<sup>2</sup> FR4 Board, t<sub>s</sub>≤10 sec.
3. Pulse Test: Pulse Width≤300μs, Duty Cycles≤2%.

**Test circuits and Wave forms**

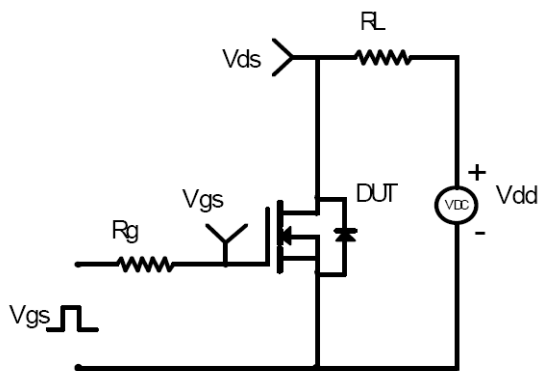
**EAS Test Circuit:**



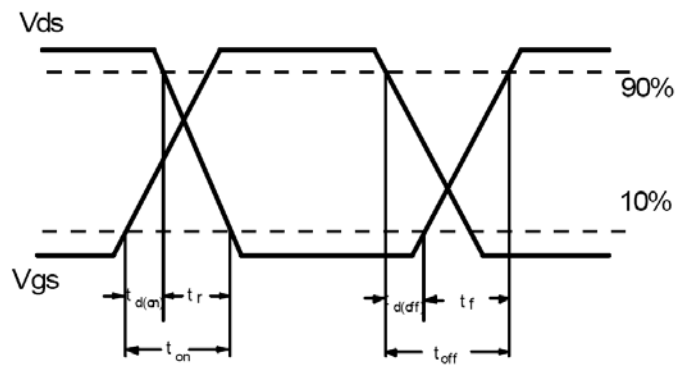
**Gate Charge Test Circuit:**



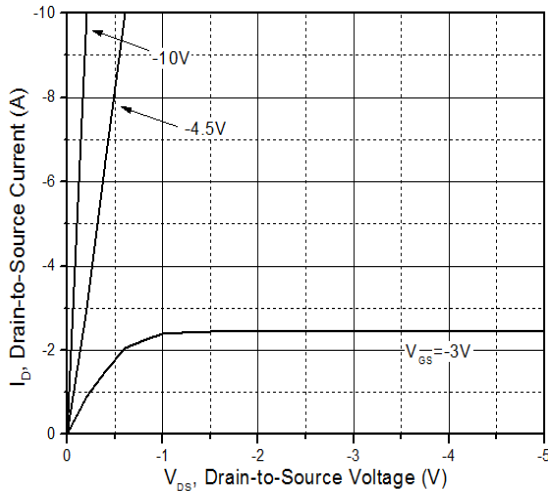
**Switching Time Test Circuit:**



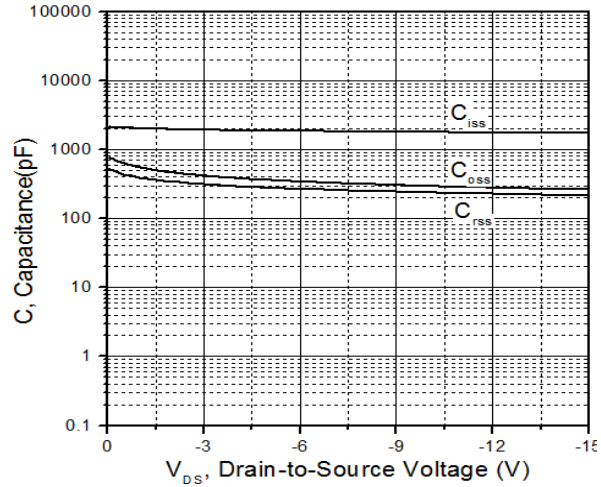
**Switching Waveforms:**



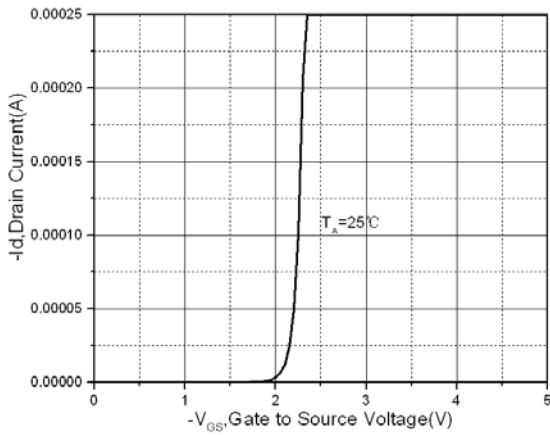
**Typical Electrical and Thermal Characteristics**



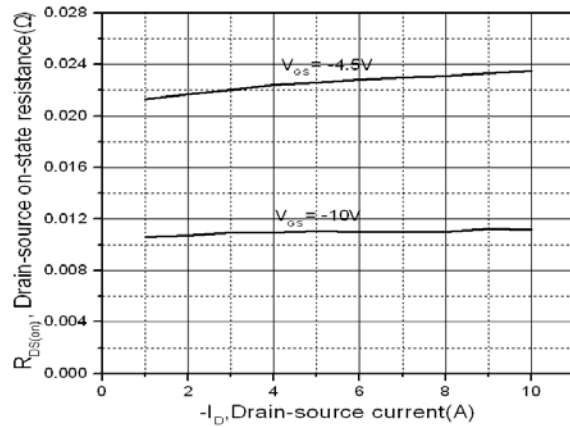
**Figure 1. Typical Output Characteristics**



**Figure 2. Typical Capacitance Vs. Drain-to-Source Voltage**

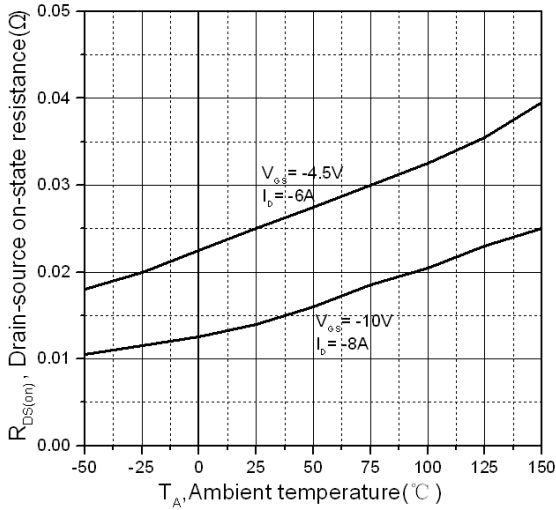


**Figure 3. Typical Transfer Characteristics**

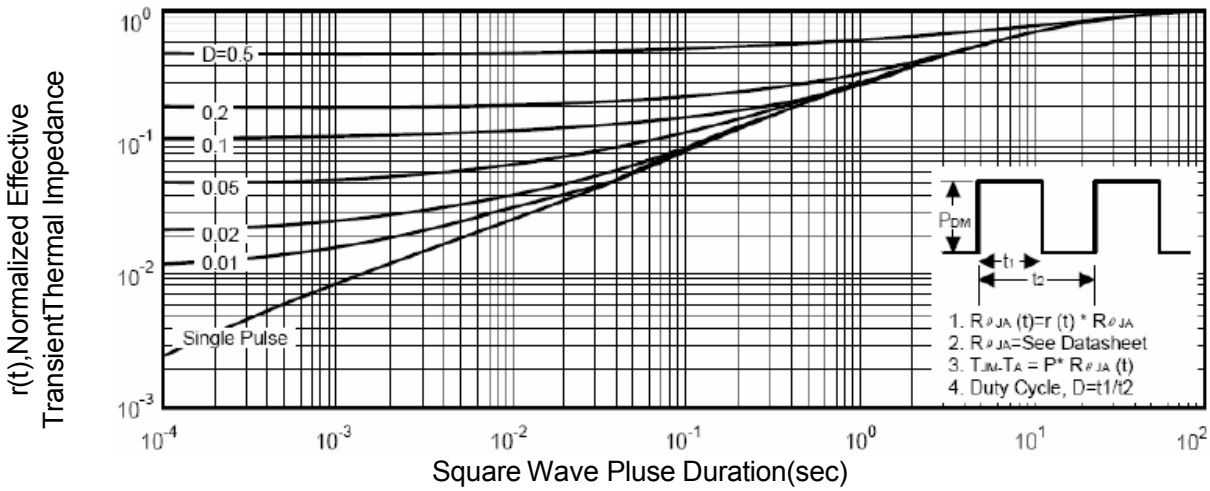


**Figure 4. On-Resistance Vs. Drain Current & Gate Voltage**

**Typical Electrical and Thermal Characteristics**



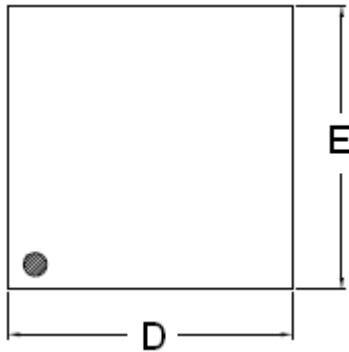
**Figure 5. Static Drain-source On-Resistance Vs. Ambient Temperature**



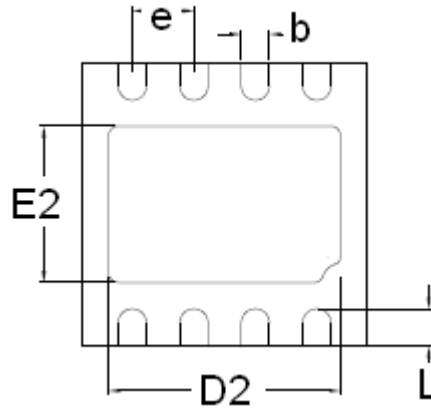
**Figure 6. Normalized Maximum Transient Thermal Impedance**

**Package Outline Dimensions**

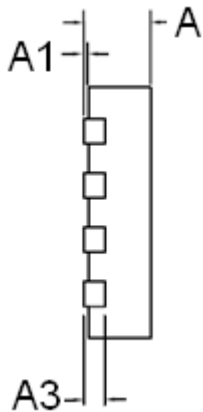
**DFN3x3-8L**



**TOPVIEW**



**BOTTOM VIEW**



**SIDE VIEW**

<b>COMMON DIMENSIONS(MM)</b>			
<b>PKG.</b>	<b>W: VERYVERYTHIN</b>		
<b>REF.</b>	<b>MIN.</b>	<b>NOM.</b>	<b>MAX.</b>
<b>A</b>	<b>0.70</b>	<b>0.75</b>	<b>0.80</b>
<b>A1</b>	<b>0.00</b>	<b>—</b>	<b>0.05</b>
<b>A3</b>	<b>0.2REF.</b>		
<b>D</b>	<b>2.95</b>	<b>3.00</b>	<b>3.05</b>
<b>E</b>	<b>2.95</b>	<b>3.00</b>	<b>3.05</b>
<b>b</b>	<b>0.25</b>	<b>0.30</b>	<b>0.35</b>
<b>L</b>	<b>0.30</b>	<b>0.40</b>	<b>0.50</b>
<b>D2</b>	<b>2.30</b>	<b>2.45</b>	<b>2.55</b>
<b>E2</b>	<b>1.50</b>	<b>1.65</b>	<b>1.75</b>
<b>e</b>	<b>0.65BSC</b>		