



**Electrical Characteristics (T<sub>J</sub> = 25°C, unless otherwise noted)**

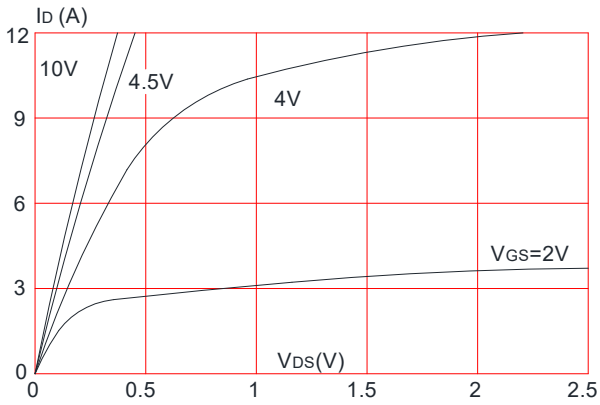
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	<b>V<sub>(BR)DSS</sub></b>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	60	-	-	V
Gate-Body Leakage Current	<b>I<sub>GSS</sub></b>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V	-	-	±100	nA
Zero Gate Voltage Drain Current	T <sub>J</sub> =25°C	V <sub>DS</sub> = 60V, V <sub>GS</sub> = 0V	-	-	1	μA
	T <sub>J</sub> =100°C		-	-	100	
Gate-Threshold Voltage	<b>V<sub>GS(th)</sub></b>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1.2	1.6	2.5	V
Drain-Source on-Resistance <sup>4</sup>	<b>R<sub>DS(on)</sub></b>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 10A	-	25	32	mΩ
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 5A	-	33	40	
Forward Transconductance <sup>4</sup>	<b>g<sub>fs</sub></b>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 10A	-	15.5	-	S
<b>Dynamic Characteristics<sup>5</sup></b>						
Input Capacitance	<b>C<sub>iss</sub></b>	V <sub>DS</sub> = 30V, V <sub>GS</sub> = 0V, f = 1MHz	-	1055	-	pF
Output Capacitance	<b>C<sub>oss</sub></b>		-	60	-	
Reverse Transfer Capacitance	<b>C<sub>rss</sub></b>		-	49	-	
Gate Resistance	<b>R<sub>G</sub></b>	f = 1MHz	-	1.2	-	Ω
<b>Switching Characteristics<sup>5</sup></b>						
Total Gate Charge	<b>Q<sub>g</sub></b>	V <sub>GS</sub> = 10V, V <sub>DD</sub> = 30V, I <sub>D</sub> = 10A	-	22	-	nC
Gate-Source Charge	<b>Q<sub>gs</sub></b>		-	4.2	-	
Gate-Drain Charge	<b>Q<sub>gd</sub></b>		-	6.9	-	
Turn-on Delay Time	<b>t<sub>d(on)</sub></b>	V <sub>GS</sub> = 10V, V <sub>DD</sub> = 30V, R <sub>G</sub> = 3Ω, I <sub>D</sub> = 10A	-	6.4	-	ns
Rise Time	<b>t<sub>r</sub></b>		-	15.3	-	
Turn-off Delay Time	<b>t<sub>d(off)</sub></b>		-	25	-	
Fall Time	<b>t<sub>f</sub></b>		-	7.6	-	
Body Diode Reverse Recovery Time	<b>t<sub>rr</sub></b>	I <sub>F</sub> = 10A, dI <sub>F</sub> /dt = 100A/μs	-	26	-	ns
Body Diode Reverse Recovery Charge	<b>Q<sub>rr</sub></b>		-	45	-	nC
<b>Drain-Source Body Diode Characteristics</b>						
Diode Forward Voltage <sup>4</sup>	<b>V<sub>SD</sub></b>	I <sub>S</sub> = 10A, V <sub>GS</sub> = 0V	-	-	1.2	V
Continuous Source Current	T <sub>C</sub> =25°C	<b>I<sub>S</sub></b>	-	-	8	A

## Notes:

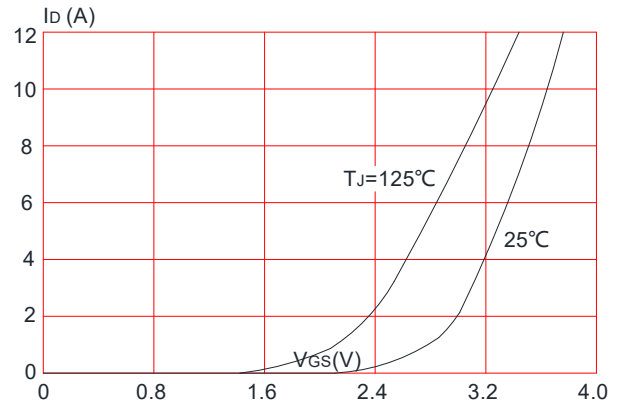
1. Repetitive rating, pulse width limited by junction temperature T<sub>J(MAX)</sub>=150°C
2. The EAS data shows Max. rating . The test condition is V<sub>DD</sub>=25V, V<sub>GS</sub>=10V, L=0.4mH, I<sub>AS</sub>=14A
3. The data tested by surface mounted on a 1 inch<sup>2</sup> FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.
4. The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%.
5. This value is guaranteed by design hence it is not included in the production test.

### Typical Performance Characteristics

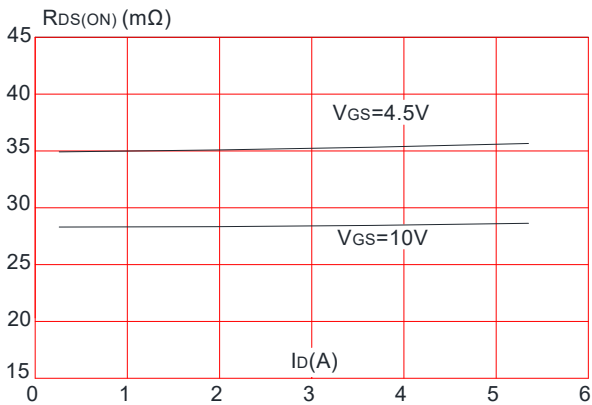
**Figure 1: Output Characteristics**



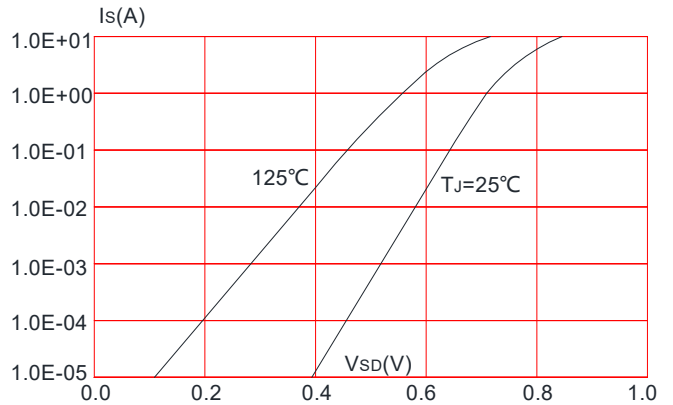
**Figure 2: Typical Transfer Characteristics**



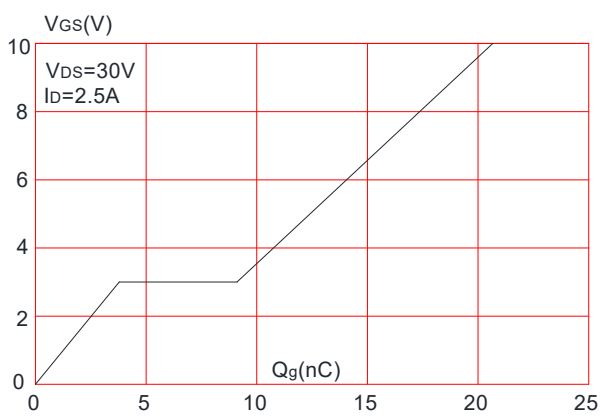
**Figure 3: On-resistance vs. Drain Current**



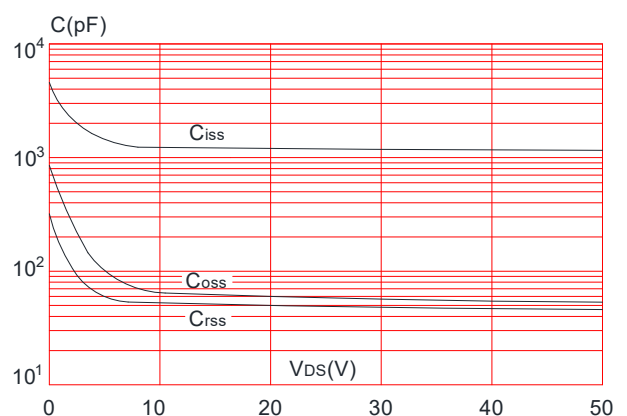
**Figure 4: Body Diode Characteristics**



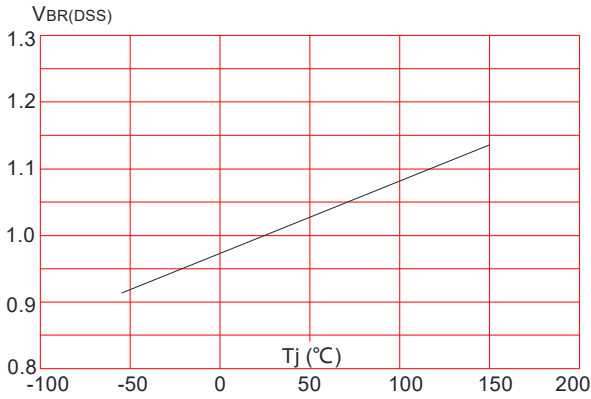
**Figure 5: Gate Charge Characteristics**



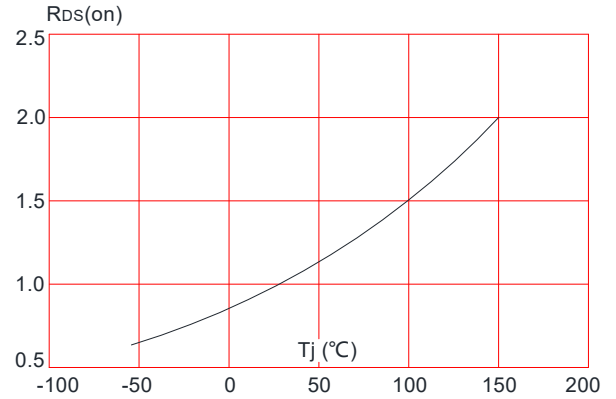
**Figure 6: Capacitance Characteristics**



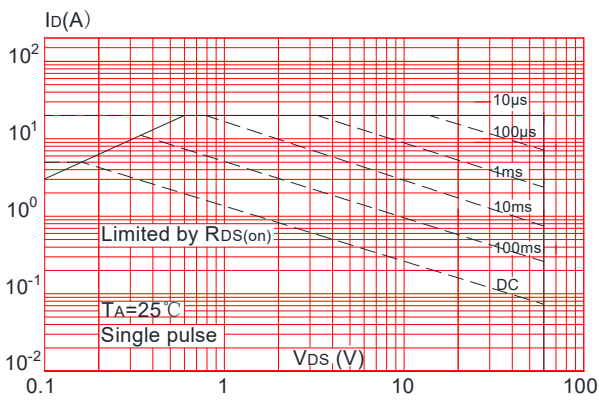
**Figure 7:** Normalized Breakdown Voltage vs. Junction Temperature



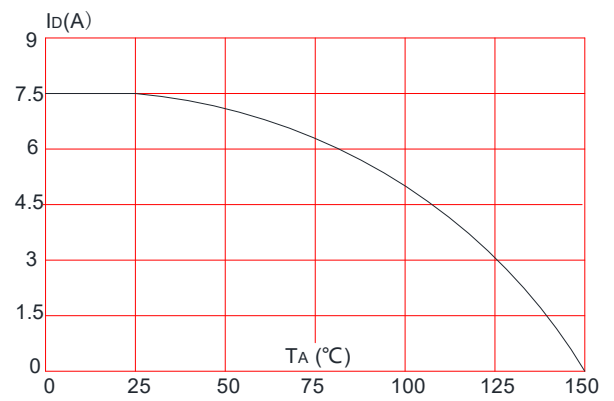
**Figure 8:** Normalized on Resistance vs. Junction Temperature



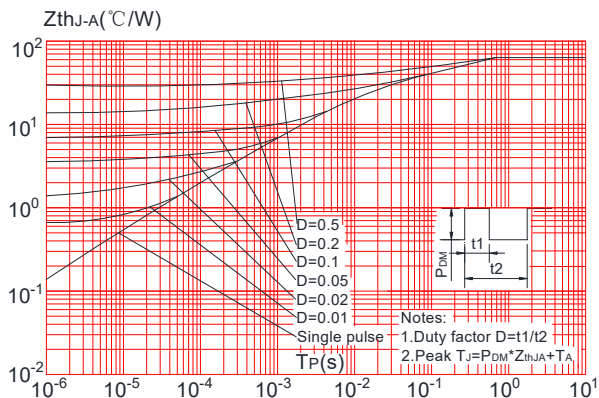
**Figure 9:** Maximum Safe Operating Area



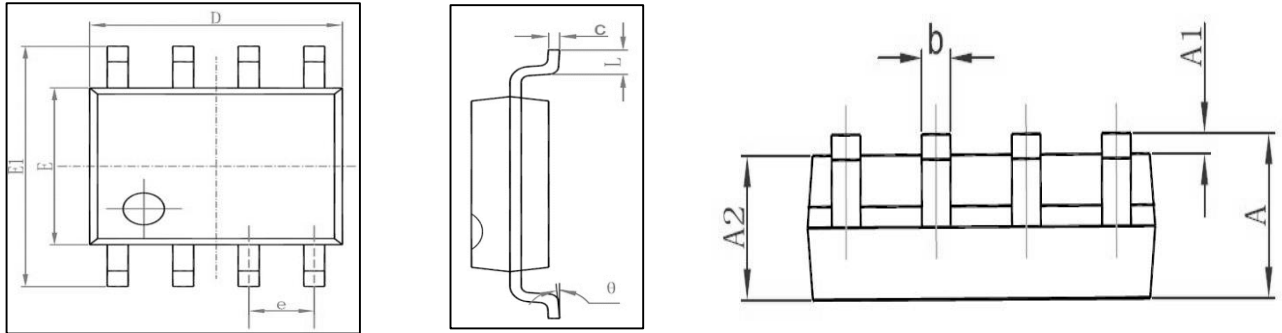
**Figure 10:** Maximum Continuous Drain Current vs. Ambient Temperature



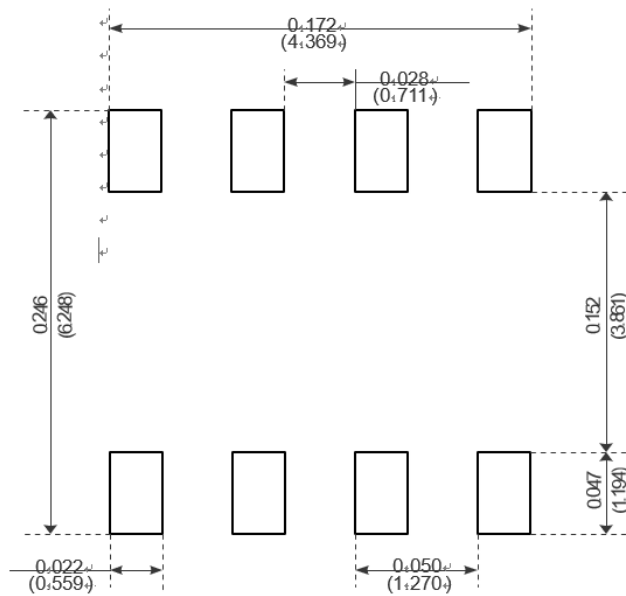
**Figure.11:** Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



# Package Mechanical Data:SOP-8L



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°



Recommended Minimum Pads