



YOUSHANG SEMICONDUCTOR

设计研发新型功率器件

各类小信号开关

中低压及高压大电流等场效应管

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企业微信二维码



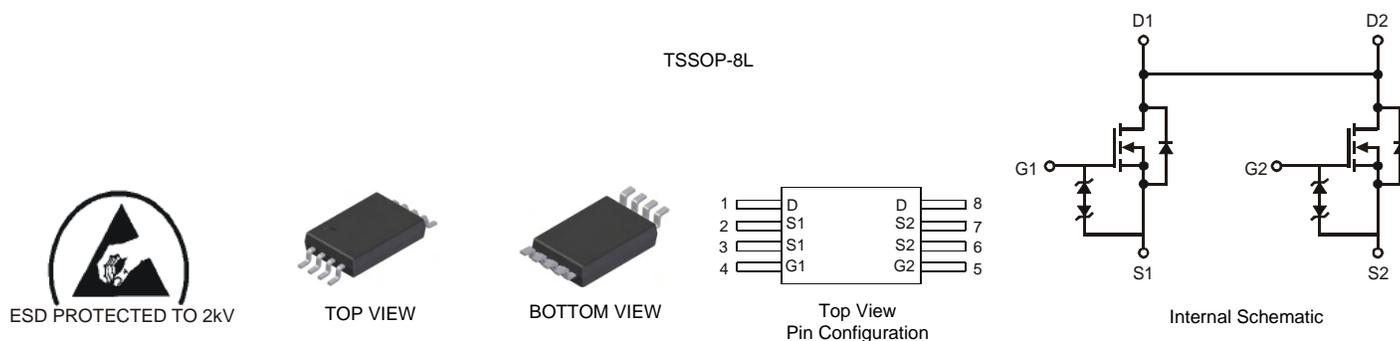
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Features

- Low On-Resistance
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage

Mechanical Data

- Case: TSSOP-8L
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Page 4
- Ordering Information: See Page 4
- Weight: 0.039 grams (approximate)



Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic			Symbol	Value	Unit
Drain-Source Voltage			V_{DSS}	20	V
Gate-Source Voltage			V_{GSS}	± 8	V
Continuous Drain Current (Note 3)	Steady State	$T_A = 25^\circ\text{C}$	I_D	8.58	A
		$T_A = 85^\circ\text{C}$		5.73	
Pulsed Drain Current (Note 4)			I_{DM}	36	A

Thermal Characteristics

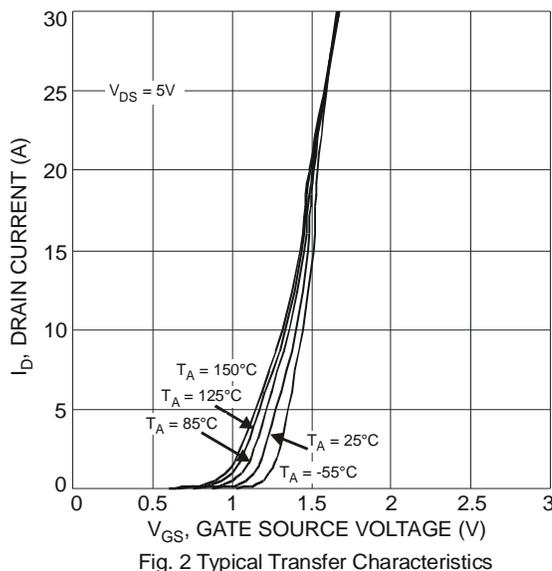
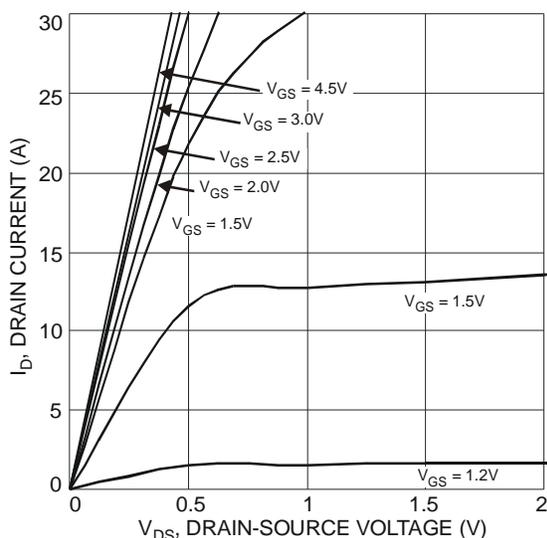
Characteristic			Symbol	Value	Unit
Power Dissipation (Note 3)			P_D	0.88	W
Thermal Resistance, Junction to Ambient @ $T_A = 25^\circ\text{C}$ (Note 3)			$R_{\theta JA}$	141.57	$^\circ\text{C/W}$
Operating and Storage Temperature Range			T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Notes: 1. No purposefully added lead.

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 5)						
Drain-Source Breakdown Voltage	BV _{DSS}	20	-	-	V	V _{GS} = 0V, I _D = 250μA
Zero Gate Voltage Drain Current T _J = 25°C	I _{DSS}	-	-	1.0	μA	V _{DS} = 20V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	-	-	±10	μA	V _{GS} = ±8V, V _{DS} = 0V
ON CHARACTERISTICS (Note 5)						
Gate Threshold Voltage	V _{GS(th)}	0.4	0.72	1.0	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS(on)}	-	11	14.5	mΩ	V _{GS} = 4.5V, I _D = 9.4A
		-	13	16.5		V _{GS} = 2.5V, I _D = 8.3A
Forward Transfer Admittance	Y _{fs}	-	19	-	S	V _{DS} = 5V, I _D = 9.4A
Diode Forward Voltage	V _{SD}	-	0.65	1.2	V	V _{GS} = 0V, I _S = 1.3A
DYNAMIC CHARACTERISTICS (Note 6)						
Input Capacitance	C _{iss}	-	1495	-	pF	V _{DS} = 10V, V _{GS} = 0V, f = 1.0MHz
Output Capacitance	C _{oss}	-	161	-	pF	
Reverse Transfer Capacitance	C _{rss}	-	152	-	pF	
Gate Resistance	R _g	-	1.42	-	Ω	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz
Total Gate Charge	Q _g	-	16.5	-	nC	V _{GS} = 4.5V, V _{DS} = 10V, I _D = 9.4A
Gate-Source Charge	Q _{gs}	-	2.5	-	nC	
Gate-Drain Charge	Q _{gd}	-	3.2	-	nC	
Turn-On Delay Time	t _{D(on)}	-	10.39	-	ns	V _{DD} = 10V, V _{GS} = 4.5V, R _{GEN} = 6Ω, I _D = 1A, R ₁ = 10Ω
Turn-On Rise Time	t _r	-	11.66	-	ns	
Turn-Off Delay Time	t _{D(off)}	-	59.38	-	ns	
Turn-Off Fall Time	t _f	-	16.27	-	ns	

Notes: 5. Short duration pulse test used to minimize self-heating effect.
6. Guaranteed by design. Not subject to production testing.



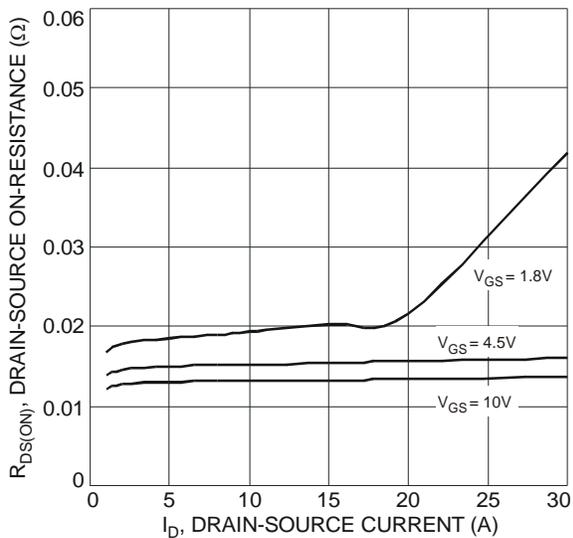


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

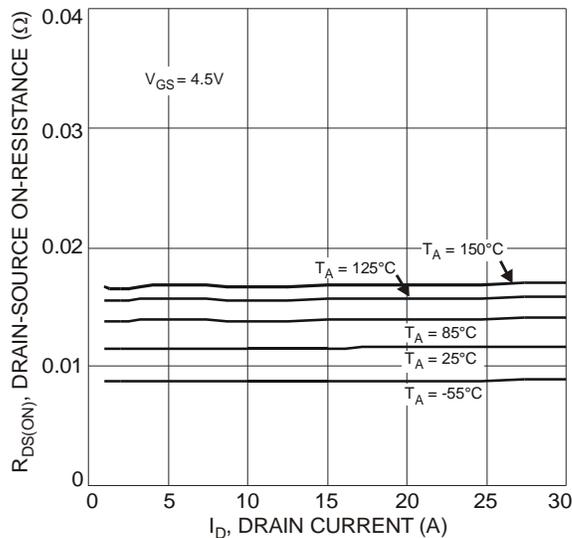


Fig. 4 Typical Drain-Source On-Resistance vs. Drain Current and Temperature

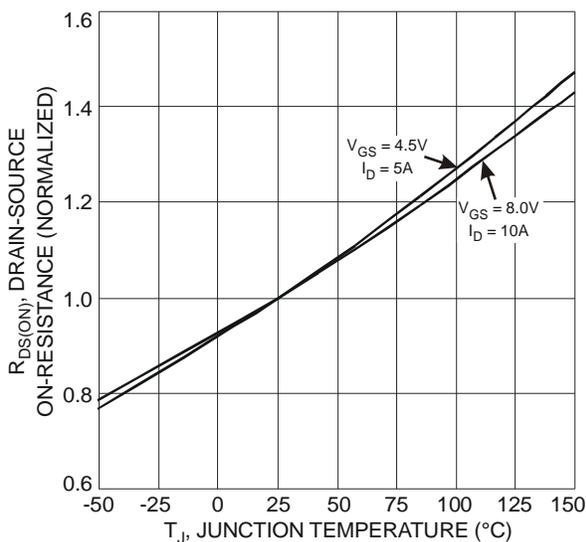


Fig. 5 On-Resistance Variation with Temperature

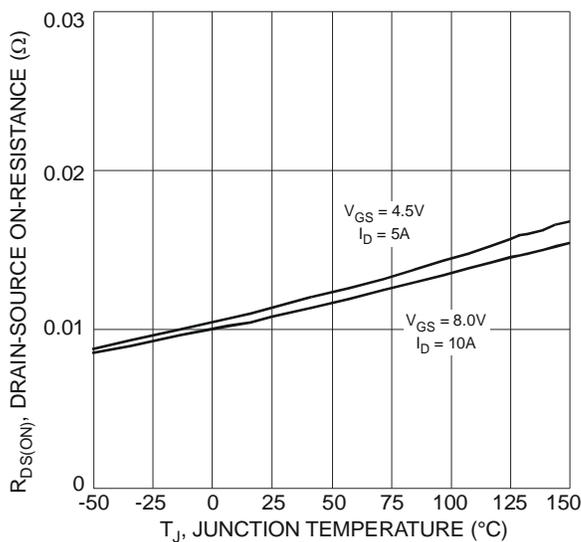


Fig. 6 On-Resistance Variation with Temperature

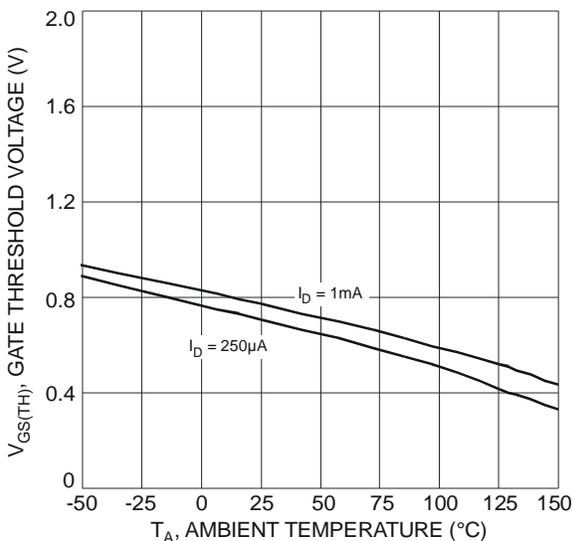


Fig. 7 Gate Threshold Variation vs. Ambient Temperature

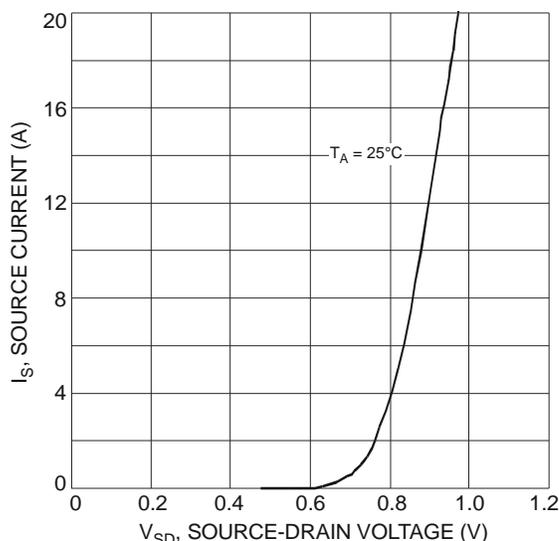


Fig. 8 Diode Forward Voltage vs. Current

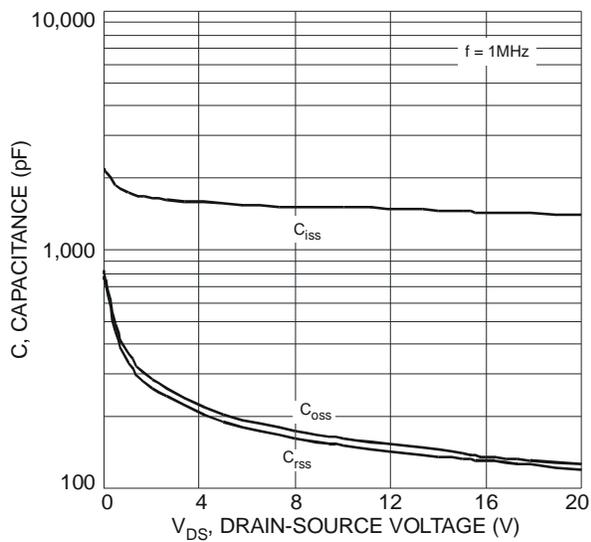


Fig. 9 Typical Capacitance

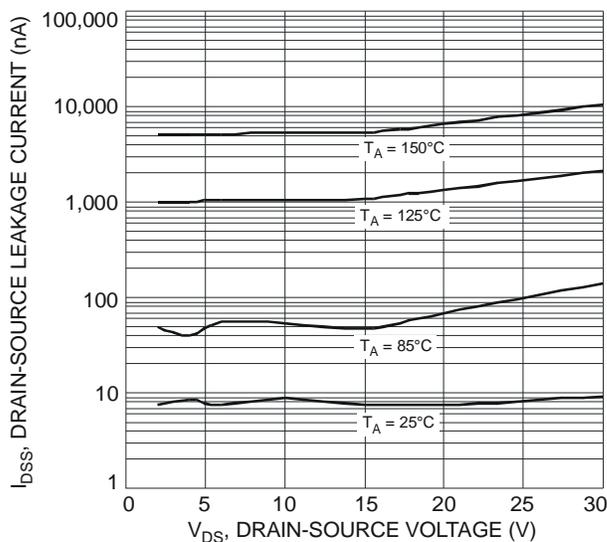


Fig. 10 Typical Drain-Source Leakage Current vs. Drain-Source Voltage

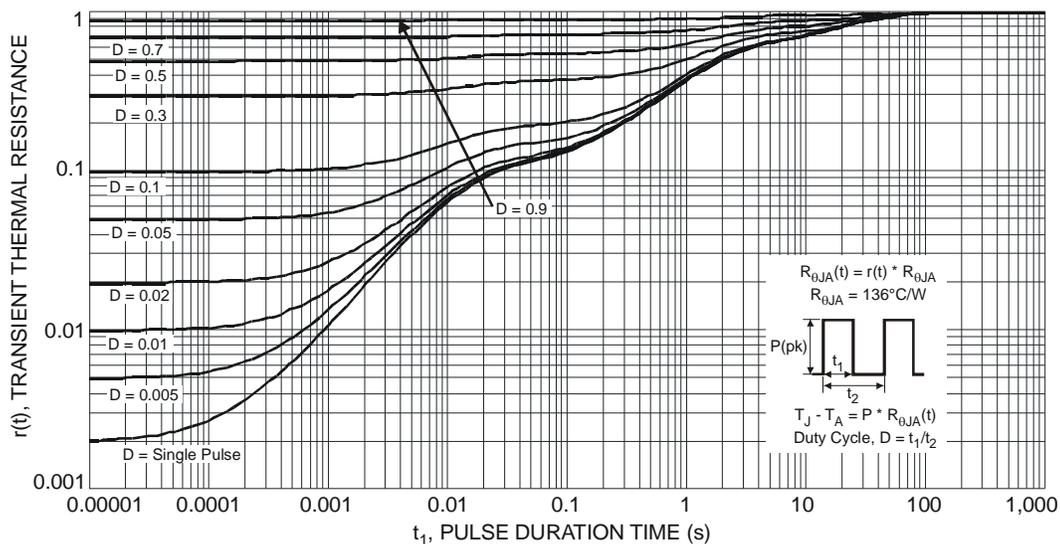
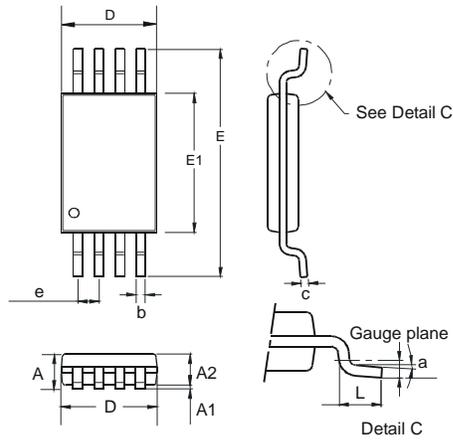


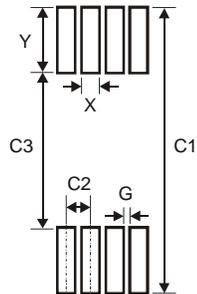
Fig. 11 Transient Thermal Response

Package Outline Dimensions



TSSOP-8L			
Dim	Min	Max	Typ
a	0.09	–	–
A	–	1.20	–
A1	0.05	0.15	–
A2	0.825	1.025	0.925
b	0.19	0.30	–
c	0.09	0.20	–
D	2.90	3.10	3.025
e	–	–	0.65
E	–	–	6.40
E1	4.30	4.50	4.425
L	0.45	0.75	0.60
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
X	0.45
Y	1.78
C1	7.72
C2	0.65
C3	4.16
G	0.20