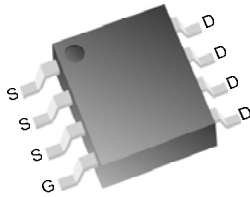


LVS2100N N-Channel PowerJFET®

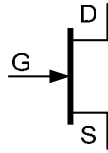
Product Summary

	Typical	Max	
V_{DS}		24	V
$R_{DS(ON)}$ @ 0 V_{GS}	11.5	14	m Ω

Pinouts



SO-8



Features

- Device is fully on @ $V_{GS} = 0V$.
- Bidirectional blocking when off (no body diode)

Applications

- Notebook battery switch:
Each JFET replaces 2 P-Channel series MOSFETs

Absolute Maximum Ratings

Absolute maximum ratings are the values beyond which the device may be damaged or have its useful life impaired. Functional operation under these conditions is not implied.

Symbol	Parameter	Conditions	Rating	Units
V_{DSS}	Drain to Source voltage		24	V
V_{GS}	Gate to Source voltage		-12	V
V_{DG}	Drain to Gate voltage		-28	V
I_D	Drain Current	Continuous, $T_C = 25^\circ C$	11	A
		Pulsed, 300 μ S	50	A
T_J	Junction Temperature		-55 to 150	$^\circ C$
T_{STG}	Storage Temperature		-65 to 150	$^\circ C$
	Lead Soldering Temperature	10 seconds, 1.6mm from case	260	$^\circ C$
P_D	Power Dissipation	$T_A = 25^\circ C$, Note 1	2.5	W
		$T_A = 25^\circ C$, Note 2	1.3	W

Thermal Resistance

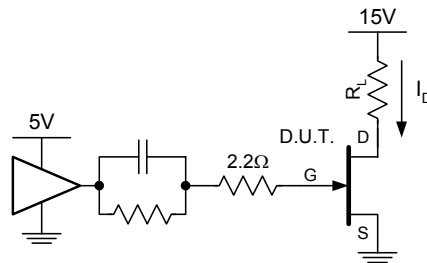
Symbol	Resistance from:	Conditions	Rating	Units
$R_{\theta JA}$	Junction to Ambient	Note 1	50	$^\circ C/W$
		Note 2	96	$^\circ C/W$
$R_{\theta JC}$	Junction to Case		25	$^\circ C/W$

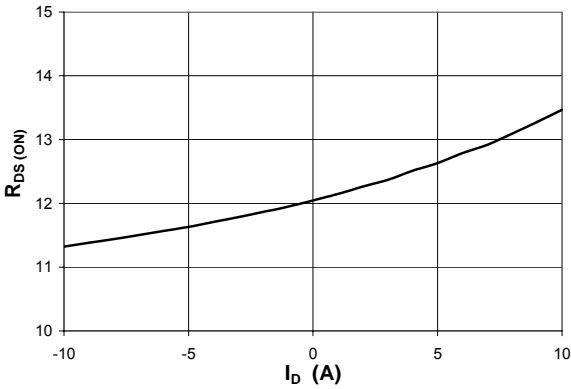
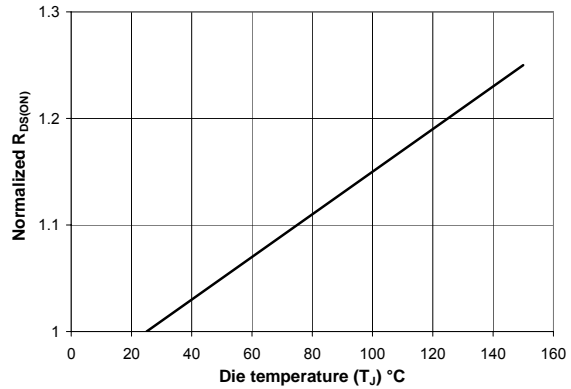
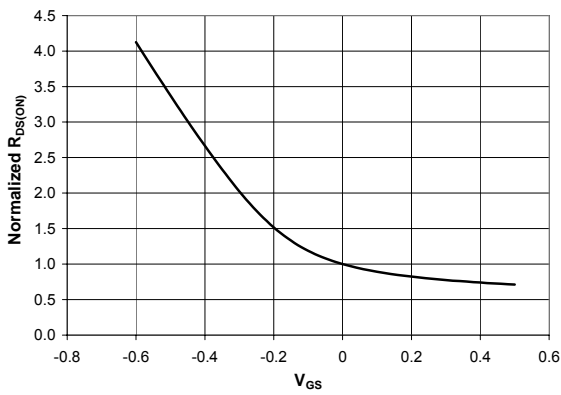
Note 1. Mounted on 1 in.², 2 oz copper on FR-4

Note 1. Mounted on 0.05 in.², 0.5 oz. copper on FR-4

Electrical Specifications @ $T_J = 25^\circ\text{C}$ (unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Static						
BV_{DSX}	Breakdown Voltage Drain to Source	$I_D = 0.5\text{ mA}, V_{GS} = -4\text{ V}$	24	28		V
BV_{GDO}	Breakdown Voltage Gate to Drain	$I_G = -50\mu\text{A}$		-32	-28	V
BV_{GSO}	Breakdown Voltage Gate to Source	$I_G = -50\mu\text{A}$		-14	-12	V
$R_{DS(ON)}$	Drain to Source On Resistance	$V_{GS} = 0\text{ V}, I_D = -7\text{ A}$		11.5	14	$\text{m}\Omega$
		$V_{GS} = 0\text{ V}, I_D = 7\text{ A}$		13	17	$\text{m}\Omega$
$V_{GS(OFF)}$	Gate Threshold Voltage	$V_{DS} = 16\text{ V}, I_D = 250\mu\text{A}$		-2.5		V
Dynamic						
Q_G	Total Gate Charge	$\Delta V_{GS} = 5\text{ V}, V_{DS} = 15\text{ V}$		9.3		nC
Q_{GD}	Gate to Drain charge	$\Delta V_{DS} = 12\text{ V}$		6.1		nC
Q_{GS}	Gate to Source Charge			3.2		nC
R_G	Gate resistance			3		Ω
$T_{D(ON)}$	Turn-on Delay	$I_D = 15\text{ A}$ Circuit of Figure 1		4		nS
$T_{D(OFF)}$	Turn-off Delay			9		
T_R	Rise Time			2		
T_F	Fall Time			7		
C_{ISS}	Input Capacitance			860		pF
C_{OSS}	Output Capacitance			350		pF
C_{GS}	Gate-Source Capacitance			588		pF
C_{GD}	Gate-Drain Capacitance			272		pF
C_{DS}	Drain-Source Capacitance			15		pF

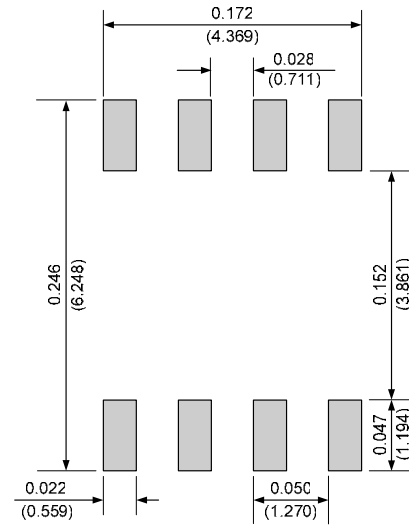
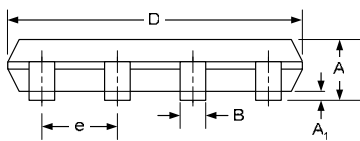
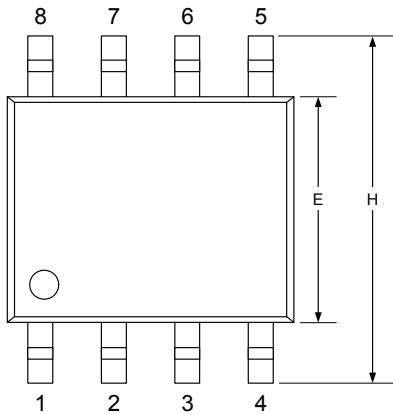

Figure 1. Switching test circuit.

Typical Characteristics @ $T_J = 25^\circ\text{C}$ (unless otherwise specified)

Figure 2. $R_{DS(ON)}$ vs. Drain Current @ $V_{GS} = 0\text{V}$

Figure 3. Normalized $R_{DS(ON)}$ vs. junction temperature @ $I_D = -7\text{A}$

Figure 4. Normalized $R_{DS(ON)}$ vs. @ $I_D = -7\text{A}$

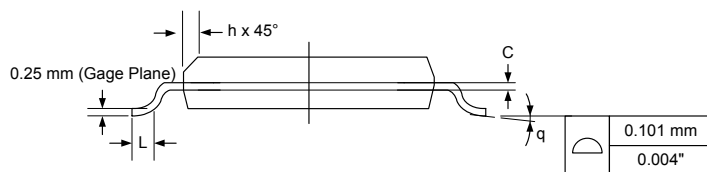
Dimensional Outline Drawing

SO-8 8-lead narrow SOIC

Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	1.35	1.75	0.0530	0.0690
A1	0.10	0.20	0.0040	0.0080
B	0.35	0.51	0.0140	0.0200
C	0.19	0.25	0.0075	0.0100
D	4.80	5.00	0.1890	0.1960
E	3.80	4.00	0.1500	0.1570
e	1.27 BSC		0.050 BSC	
H	5.80	6.20	0.2280	0.2440
h	0.25	0.50	0.0100	0.0200
L	0.50	0.93	0.0200	0.0370
q	0°	8°	0°	8°



Recommended minimum pad layout dimensions in inches (mm)



Conforms to JEDEC part number MS-012

Ordering Information

Part Number	Package	Packing
LVS2001N	SO-8	13" Tape and Reel, 2500 units / reel

LIFE SUPPORT POLICY

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2. A critical component in any component of a life support, device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.