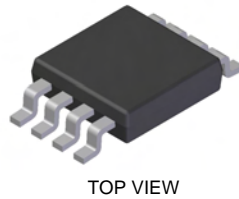


## Features

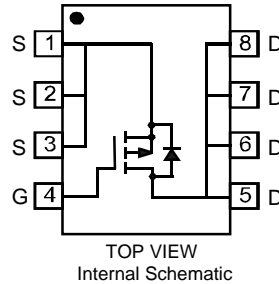
- Low On-Resistance
  - 40mΩ @  $V_{GS} = -4.5V$
  - 70mΩ @  $V_{GS} = -2.5V$
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- Lead Free By Design/RoHS Compliant (Note 2)**
- "Green" Device (Note 4)**
- Qualified to AEC-Q101 Standards for High Reliability**



## Mechanical Data

- Case: SOP-8L
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals Connections: See Diagram
- Terminals: Finish - Matte Tin annealed over Copper lead frame. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.072g (approximate)

SOP-8L



## Maximum Ratings @ $T_A = 25^\circ C$ unless otherwise specified

Characteristic	Symbol	Value	Units
Drain-Source Voltage	$V_{DSS}$	-20	V
Gate-Source Voltage	$V_{GSS}$	±12	V
Drain Current (Note 1)	$I_D$	-6.5 -5.2	A
		Steady State $T_A = 25^\circ C$ $T_A = 70^\circ C$	
Pulsed Drain Current (Note 3)	$I_{DM}$	-26	A

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 1)	$P_D$	2.5	W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	50	$^\circ C/W$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ C$

## Electrical Characteristics @ $T_A = 25^\circ C$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 5)</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	-20	—	—	V	$V_{GS} = 0V, I_D = -250\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	—	—	-1	$\mu A$	$V_{DS} = -20V, V_{GS} = 0V$
Gate-Source Leakage	$I_{GSS}$	—	—	±100	nA	$V_{GS} = \pm 12V, V_{DS} = 0V$
<b>ON CHARACTERISTICS (Note 5)</b>						
Gate Threshold Voltage	$V_{GS(th)}$	-0.6	—	-1.2	V	$V_{DS} = V_{GS}, I_D = -250\mu A$
Static Drain-Source On-Resistance	$R_{DS(on)}$	—	—	40	mΩ	$V_{GS} = -4.5V, I_D = -5.8A$
		—	—	70		$V_{GS} = -2.5V, I_D = -3.8A$
Forward Transconductance	$g_{fs}$	—	9	—	S	$V_{DS} = -10V, I_D = -4.6A$
Diode Forward Voltage (Note 5)	$V_{SD}$	-0.5	-0.72	-1.4	V	$V_{GS} = 0V, I_S = -2.1A$
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{iss}$	—	820	—	pF	$V_{DS} = -15V, V_{GS} = 0V$ $f = 1.0MHz$
Output Capacitance	$C_{oss}$	—	200	—	pF	
Reverse Transfer Capacitance	$C_{rss}$	—	160	—	pF	

- Notes:
- Device mounted on 2 oz. Copper pads on FR-4 PCB.
  - No purposefully added lead.
  - Pulse width  $\leq 10\mu s$ , Duty Cycle  $\leq 1\%$ .
  - Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  - Short duration pulse test used to minimize self-heating effect.

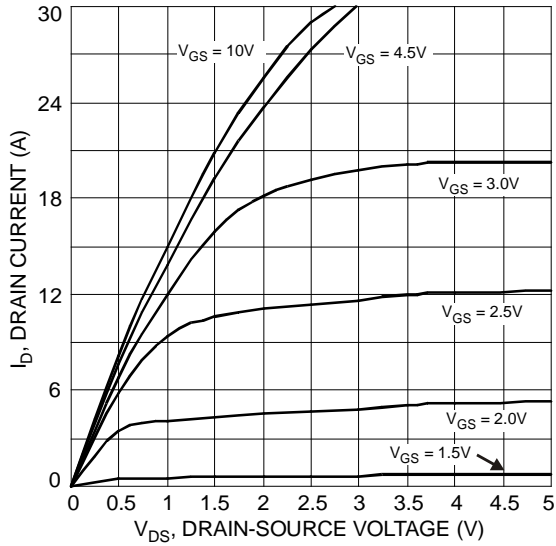


Fig. 1 Typical Output Characteristic

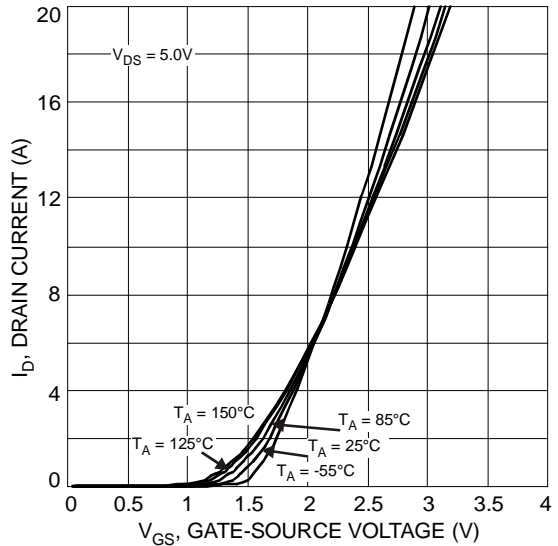


Fig. 2 Typical Transfer Characteristic

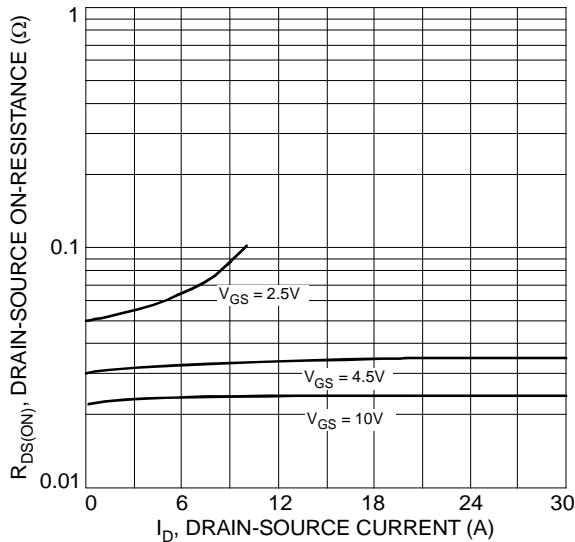


Fig. 3 Typical On-Resistance vs. Drain Current and Gate Voltage

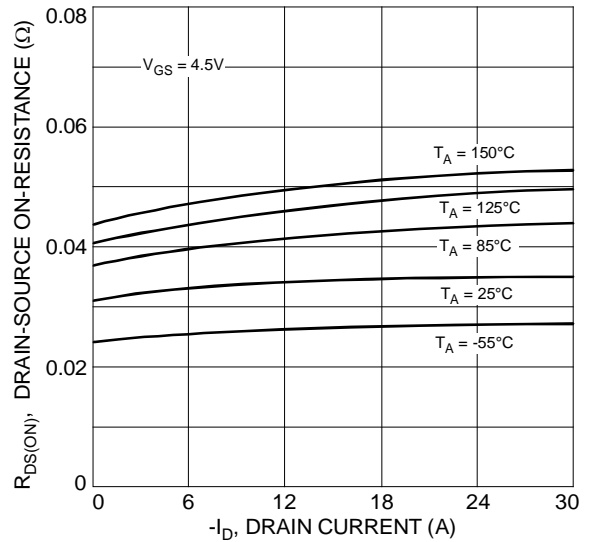


Fig. 4 Typical On-Resistance vs. Drain Current and Temperature

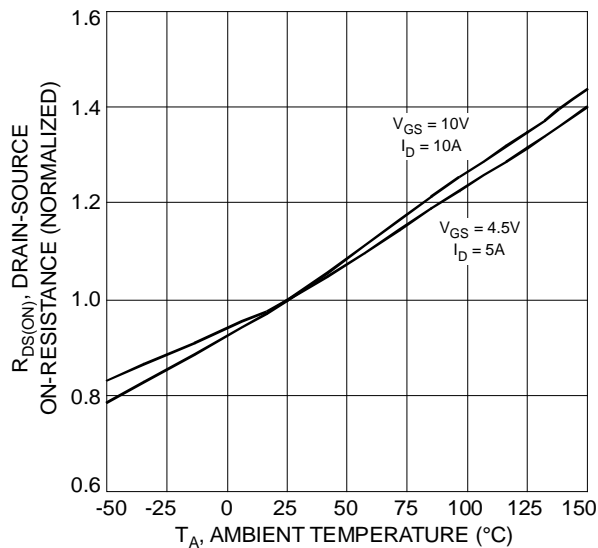


Fig. 5 Normalized On-Resistance vs. Ambient Temperature

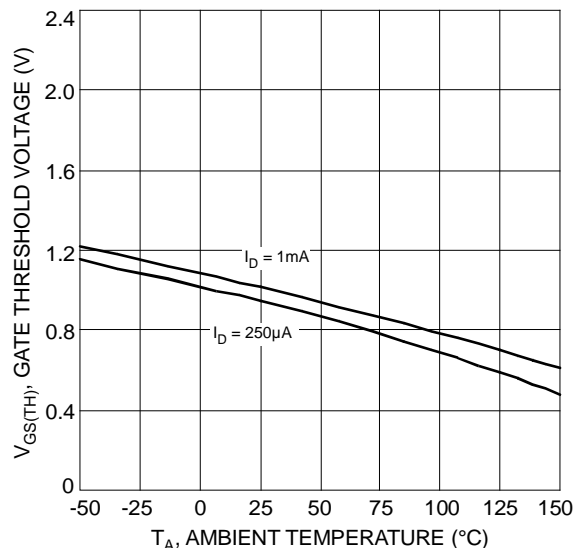


Fig. 6 Gate Threshold Variation vs. Ambient Temperature

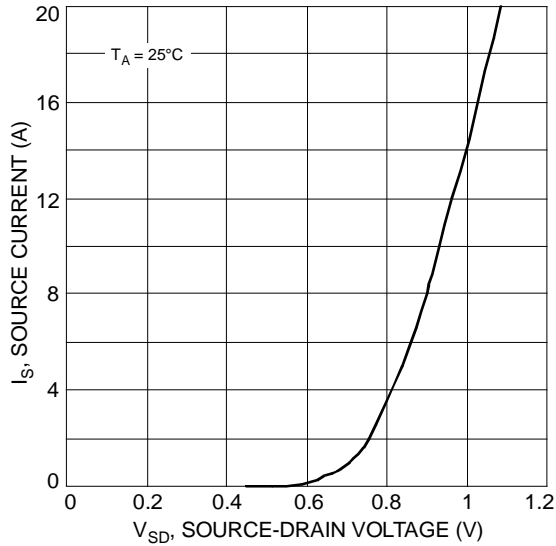


Fig. 7 Diode Forward Voltage vs. Current

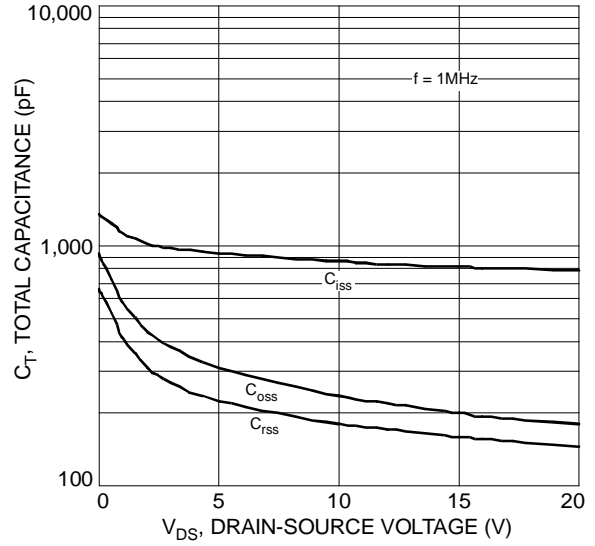


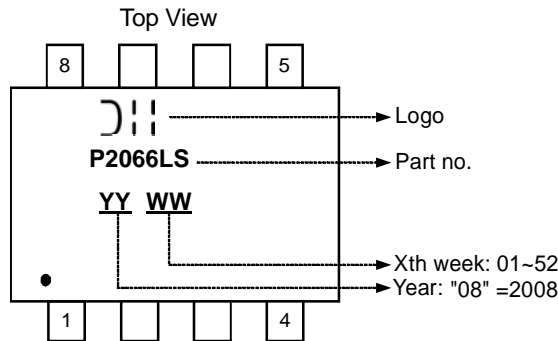
Fig. 8 Typical Total Capacitance

**Ordering Information** (Note 6)

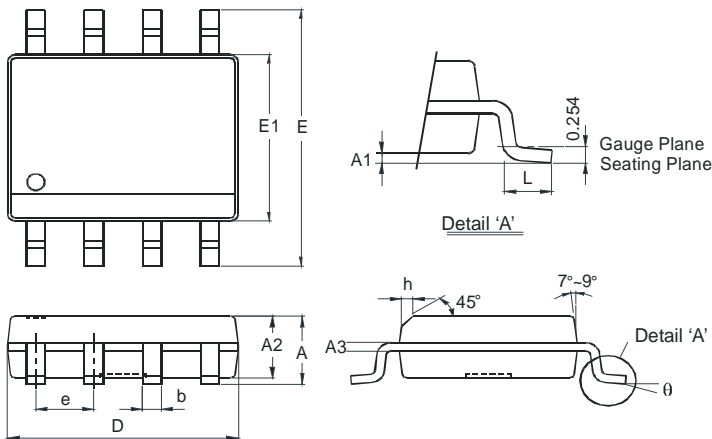
Part Number	Case	Packaging
DMP2066LSS-13	SOP-8L	2500/Tape & Reel

Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**

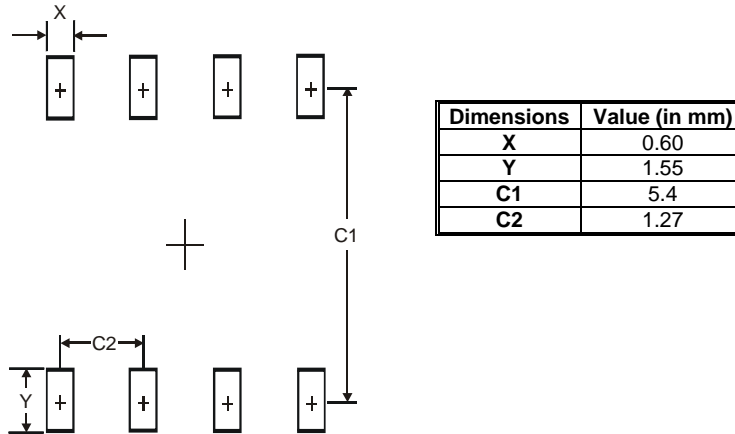


**Package Outline Dimensions**



SOP-8L		
Dim	Min	Max
A	-	1.75
A1	0.08	0.25
A2	1.30	1.50
A3	0.20 Typ	
b	0.3	0.5
D	4.80	5.30
E	5.79	6.20
E1	3.70	4.10
e	1.27 Typ	
h	-	0.35
L	0.38	1.27
θ	0°	8°
<b>All Dimensions in mm</b>		

**Suggested Pad Layout**



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