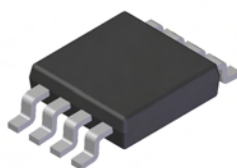


Features

- Low On-Resistance
 - 45mΩ @ $V_{GS} = -10V$
 - 65mΩ @ $V_{GS} = -4.5V$
- 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

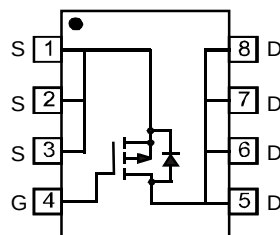
Mechanical Data

- 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 4
- Ordering Information: See Page 4
- Weight: 0.072g (approximate)



TOP VIEW

SOP-8L

TOP VIEW
Internal Schematic

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

Characteristic			Symbol	Value	Units
Drain-Source Voltage			V_{DSS}	-30	V
Gate-Source Voltage			V_{GSS}	± 20	V
Drain Current (Note 1)	Steady State	$T_A = 25^{\circ}\text{C}$	I_D	-7.1	A
		$T_A = 70^{\circ}\text{C}$		-6.0	
Pulsed Drain Current (Note 3)			I_{DM}	-20	A

Thermal Characteristics

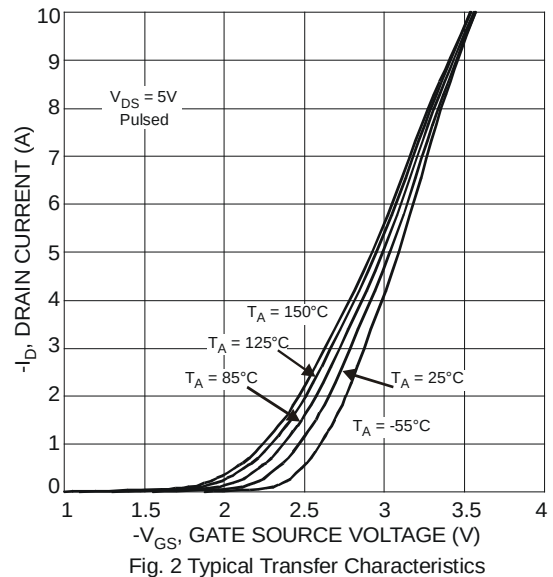
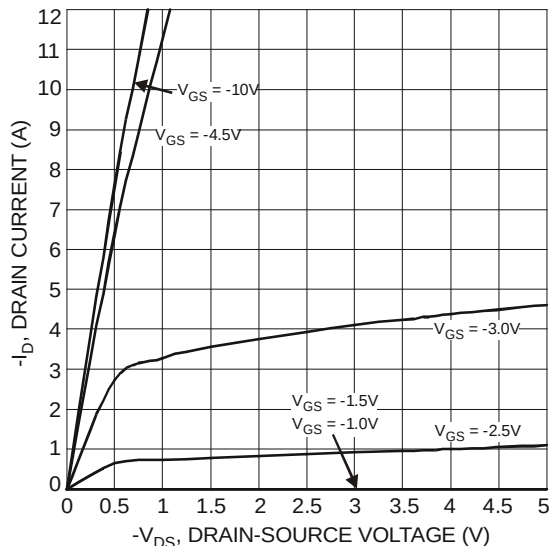
Characteristic	Symbol	Value	Unit
Total Power Dissipation (Note 1)	P_D	2.5	W
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	50	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

- Notes:
- Device mounted on 1" x 1" 2 oz. Copper pads on 2" x 2" FR-4 PCB.
 - No purposefully added lead.
 - Pulse width $\leq 10\mu\text{s}$, 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.

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}	-30	—	—	V	V _{GS} = 0V, I _D = -250μA
Zero Gate Voltage Drain Current	I _{DSS}	—	—	-1	μA	V _{DS} = -30V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	±100 ±800	nA	V _{GS} = ±20V, V _{DS} = 0V V _{GS} = ±25V, V _{DS} = 0V
ON CHARACTERISTICS (Note 5)						
Gate Threshold Voltage	V _{GS(th)}	-1	1.7	-2.1	V	V _{DS} = V _{GS} , I _D = -250μA
Static Drain-Source On-Resistance	R _{DS (ON)}	— —	— —	45 65	mΩ	V _{GS} = -10V, I _D = -6.0A V _{GS} = -4.5V, I _D = -5.0A
Forward Transconductance	g _{fs}	—	8	—	S	V _{DS} = -10V, I _D = -5.3A
Diode Forward Voltage (Note 5)	V _{SD}	-0.5	—	-1.2	V	V _{GS} = 0V, I _S = -1.7A
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iss}	—	722	—	pF	V _{DS} = -25V, V _{GS} = 0V f = 1.0MHz
Output Capacitance	C _{oss}	—	114	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	92	—	pF	
Gate Resistance	R _G	—	3.3	—	Ω	V _{DS} = 0V, V _{GS} = 0V f = 1.0MHz
SWITCHING CHARACTERISTICS						
Total Gate Charge	Q _G	—	6.8	—	nC	V _{DS} = -15V, V _{GS} = -4.5V, I _D = -6A
	Q _G	—	13.7	—	nC	
Gate-Source Charge	Q _{GS}	—	1.6	—		V _{DS} = -15V, V _{GS} = -10V, I _D = -6A
Gate-Drain Charge	Q _{GD}	—	4.18	—		
Turn-On Delay Time	t _{d(on)}	—	6.4	—	ns	V _{DS} = -15V, V _{GS} = -10V, I _D = -1A, R _G = 6.0Ω
Rise Time	t _r	—	5.3	—		
Turn-Off Delay Time	t _{d(off)}	—	26.5	—		
Fall Time	t _f	—	14.7	—		

Notes: 5. Short duration pulse test used to minimize self-heating effect.



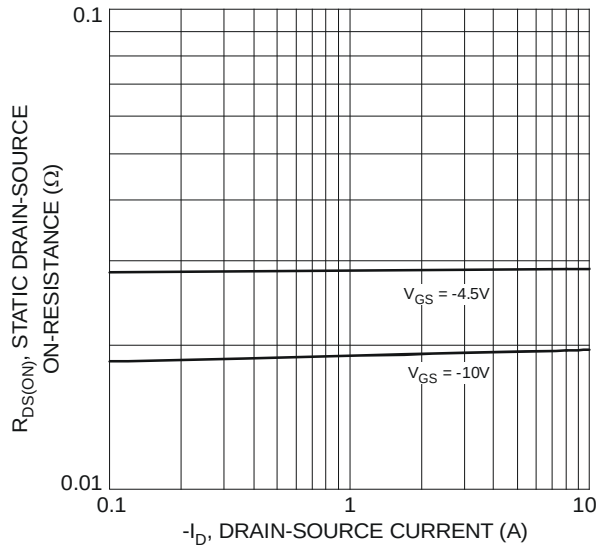


Fig. 3 On-Resistance vs. Drain Current & Gate Voltage

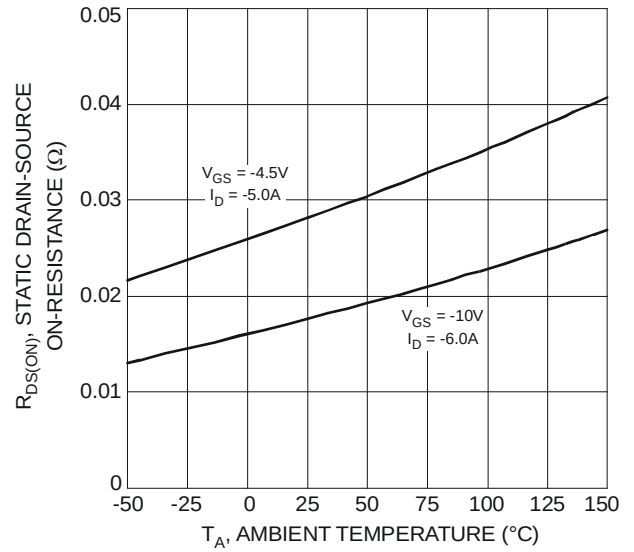


Fig. 4 Static Drain-Source On-Resistance vs. Ambient Temperature

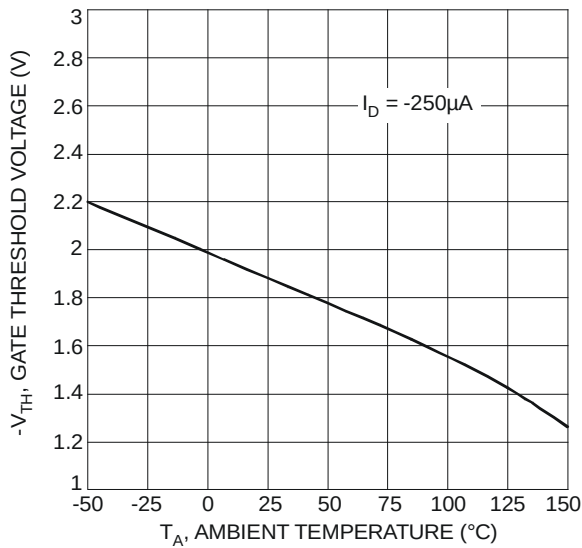


Fig. 5 Gate Threshold Variation vs. Ambient Temperature

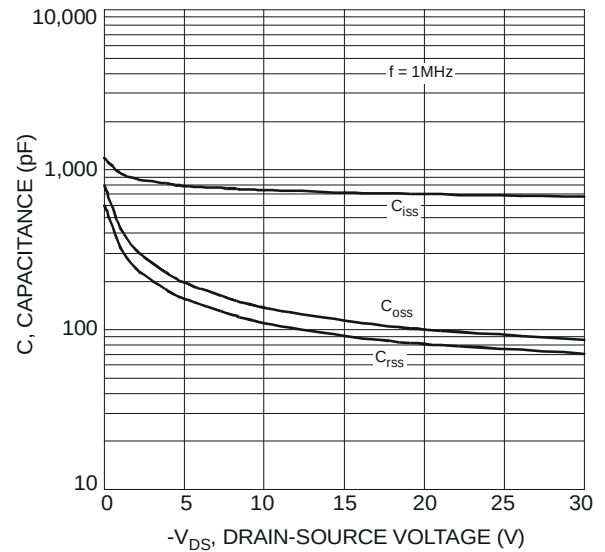


Fig. 6 Typical Total Capacitance

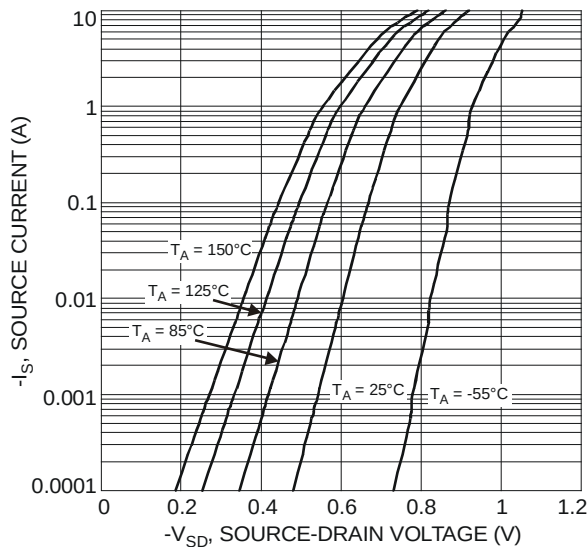


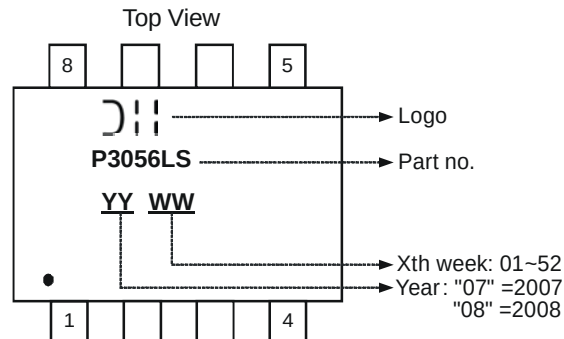
Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

Ordering Information (Note 6)

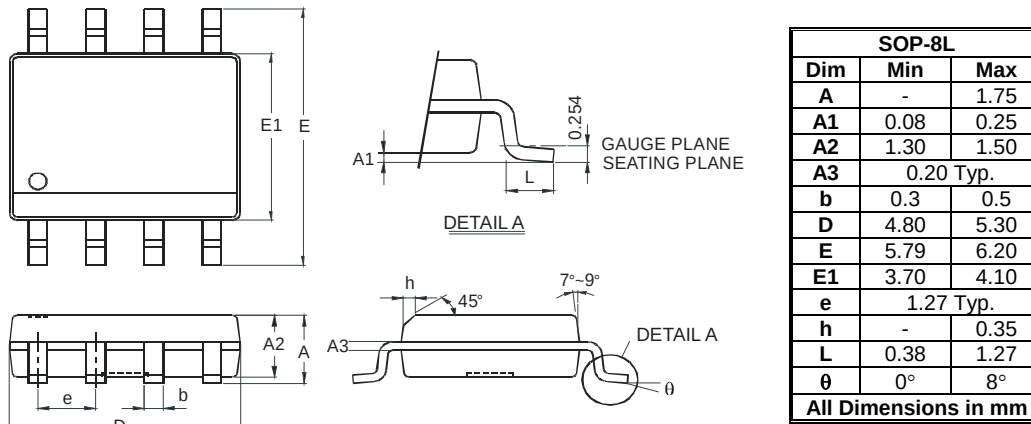
Part Number	Case	Packaging
DMP3056LSS-13	SOP-8L	2500/Tape & Reel

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

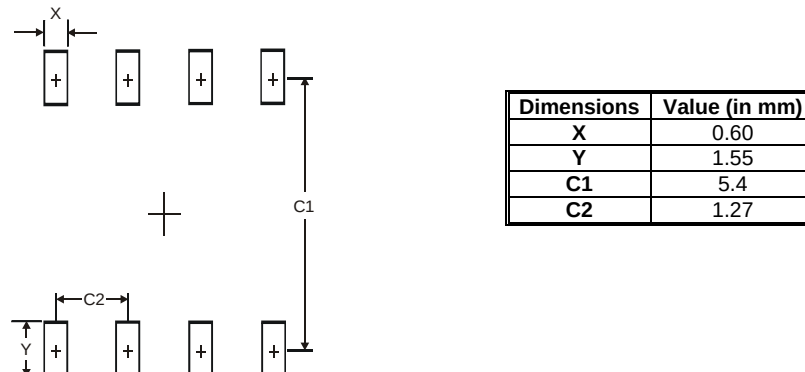
Marking Information



Package Outline Dimensions



Suggested Pad Layout



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