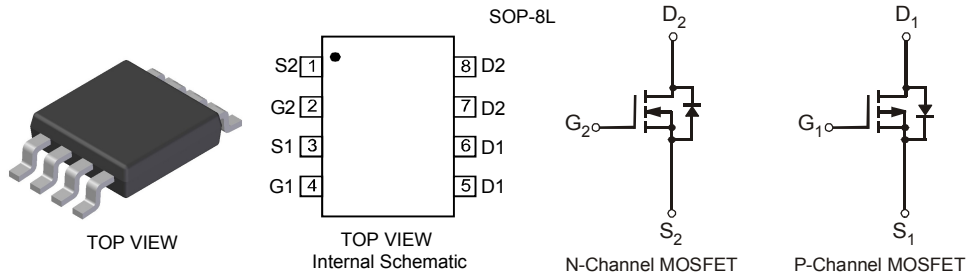


Features

- Complementary Pair MOSFETs
- Low On-Resistance
 - N-Channel: $36\text{m}\Omega$ @ 10V
 $61\text{m}\Omega$ @ 4.5V
 - P-Channel: $36\text{m}\Omega$ @ -10V
 $64\text{m}\Omega$ @ -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 3)**
- 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 6
- Ordering Information: See Page 6
- Weight: 0.072g (approximate)



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

Characteristic	Symbol	Value	Unit
Drain Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current (Note 1)	I_D	6.9 5.8	A
		$T_A = 25^\circ\text{C}$ $T_A = 70^\circ\text{C}$	
Pulsed Drain Current (Note 4)	I_{DM}	24	A

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

Characteristic	Symbol	Value	Unit
Drain Source Voltage	V_{DSS}	-30	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current (Note 1)	I_D	-6 -5	A
		$T_A = 25^\circ\text{C}$ $T_A = 70^\circ\text{C}$	
Pulsed Drain Current (Note 4)	I_{DM}	-21	A

Thermal Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

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

- Notes:
- Device mounted on FR-4 PCB, on 2oz. Copper pads with $R_{\theta JA} = 50^\circ\text{C/W}$.
 - No purposefully added lead.
 - Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
 - Repetitive rating, pulse width limited by junction temperature.

Electrical Characteristics N-CHANNEL @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} = 24V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	± 100	nA	V _{GS} = ±20V, V _{DS} = 0V
ON CHARACTERISTICS (Note 5)						
Gate Threshold Voltage	V _{GS(th)}	1	—	2.1	V	V _{DS} = V _{GS} , I _D = 250μA
Static Drain-Source On-Resistance	R _{DS (ON)}	— —	28 51	36 61	mΩ	V _{GS} = 10V, I _D = 6.9A V _{GS} = 4.5V, I _D = 5.0A
Forward Transfer Admittance	Y _{fs}	—	7.7	—	S	V _{DS} = 5V, I _D = 6.9A
Diode Forward Voltage (Note 5)	V _{SD}	0.5	—	1.2	V	V _{GS} = 0V, I _S = 1A
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iss}	—	384	—	pF	V _{DS} = 15V, V _{GS} = 0V, f = 1.0MHz
Output Capacitance	C _{oss}	—	67	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	48	—	pF	
Gate Resistance	R _G	—	1.3	—	Ω	V _{GS} = 0V V _{DS} = 0V, f = 1MHz
SWITCHING CHARACTERISTICS						
Total Gate Charge	Q _g	—	4.3 8.6	—	nC	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 10A
						V _{DS} = 10V, V _{GS} = 10V, I _D = 10A
Gate-Source Charge	Q _{gs}	—	1.2	—		V _{DS} = 10V, V _{GS} = 10V, I _D = 10A
Gate-Drain Charge	Q _{gd}	—	2.5	—		V _{DS} = 10V, V _{GS} = 10V, I _D = 10A

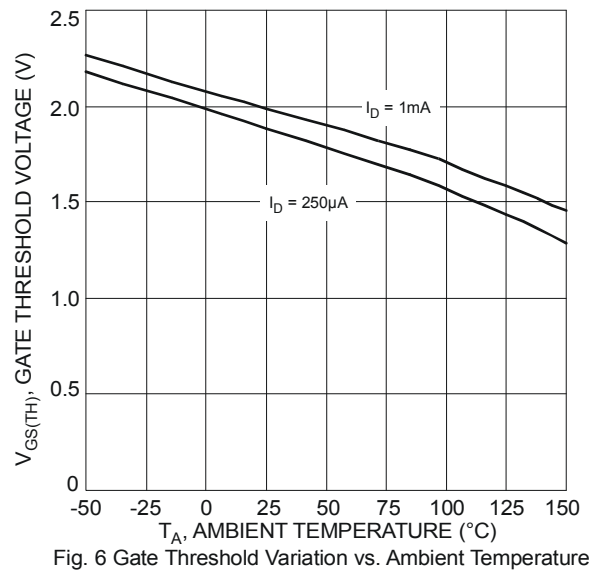
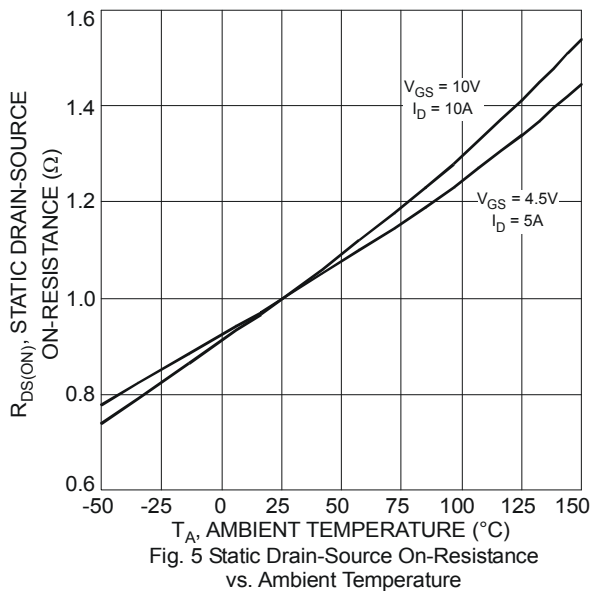
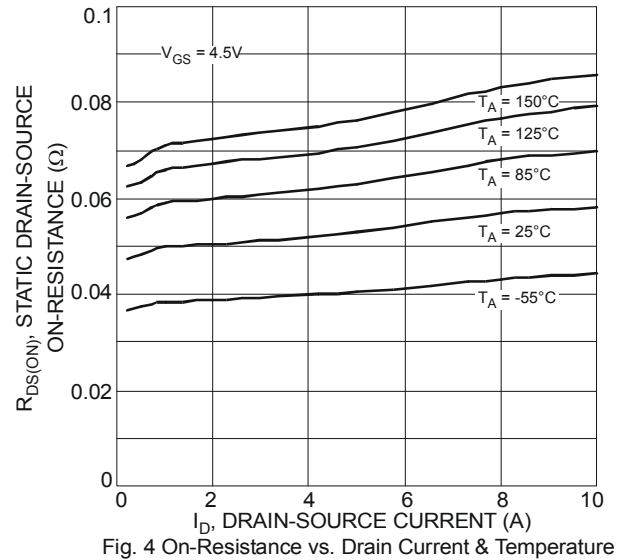
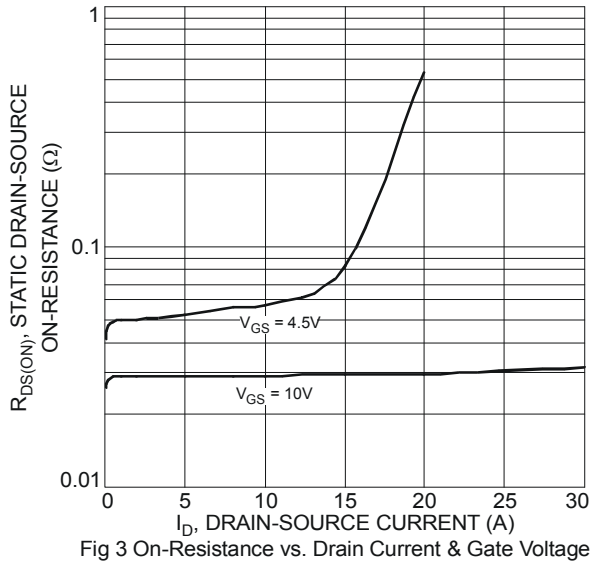
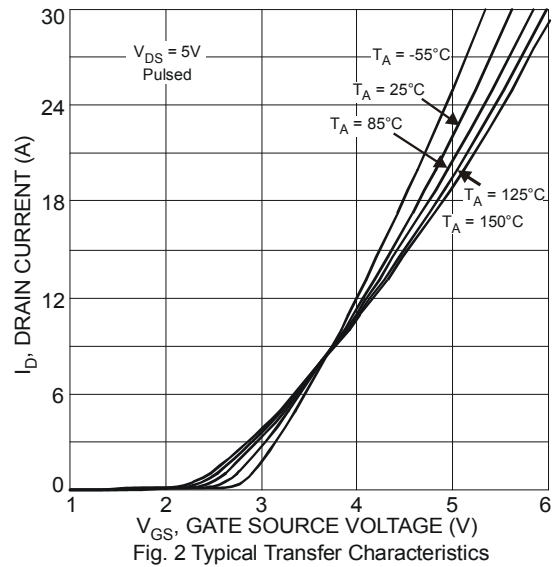
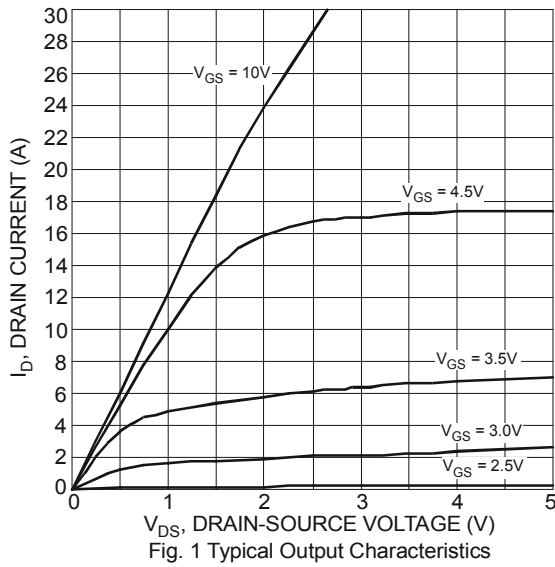
Electrical Characteristics P-CHANNEL @T_A = 25°C unless otherwise specified

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}	—	—	-1.0	μA	V _{DS} = -24V, V _{GS} = 0V
Gate-Source Leakage	I _{GSS}	—	—	± 100	nA	V _{GS} = ±20V, V _{DS} = 0V
ON CHARACTERISTICS (Note 5)						
Gate Threshold Voltage	V _{GS(th)}	-1	—	-2.2	V	V _{DS} = V _{GS} , I _D = -250μA
Static Drain-Source On-Resistance	R _{DS (ON)}	—	30 53	36 64	mΩ	V _{GS} = -10V, I _D = -6A V _{GS} = -4.5V, I _D = -5A
Forward Transfer Admittance	Y _{fs}	—	8.8	—	S	V _{DS} = -5V, I _D = -6A
Diode Forward Voltage (Note 5)	V _{SD}	-0.5	—	-1.2	V	V _{GS} = 0V, I _S = -1A
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{iss}	—	637	—	pF	V _{DS} = -15V, V _{GS} = 0V, f = 1.0MHz
Output Capacitance	C _{oss}	—	147	—	pF	
Reverse Transfer Capacitance	C _{rss}	—	105	—	pF	
Gate Resistance	R _G	—	3.3	—	Ω	V _{GS} = 0V, V _{DS} = 0V, f = 1MHz
SWITCHING CHARACTERISTICS						
Total Gate Charge	Q _g	—	6.8 13.7	—	nC	V _{DS} = 15V, V _{GS} = -4.5V, I _D = 6A V _{DS} = 15V, V _{GS} = -10V, I _D = 6A
Gate-Source Charge	Q _{gs}	—	1.6	—		V _{DS} = 15V, V _{GS} = -10V, I _D = 6A
Gate-Drain Charge	Q _{gd}	—	4.2	—		V _{DS} = 15V, V _{GS} = -10V, I _D = 6A

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

N-CHANNEL

NEW PRODUCT



N-CHANNEL (continued)

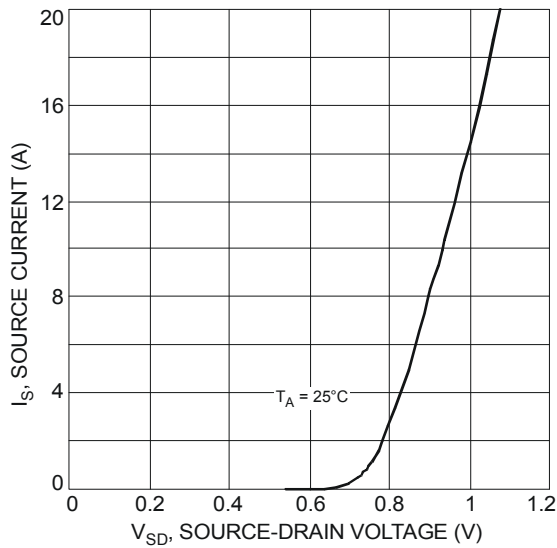


Fig. 7 Reverse Drain Current vs. Source-Drain Voltage

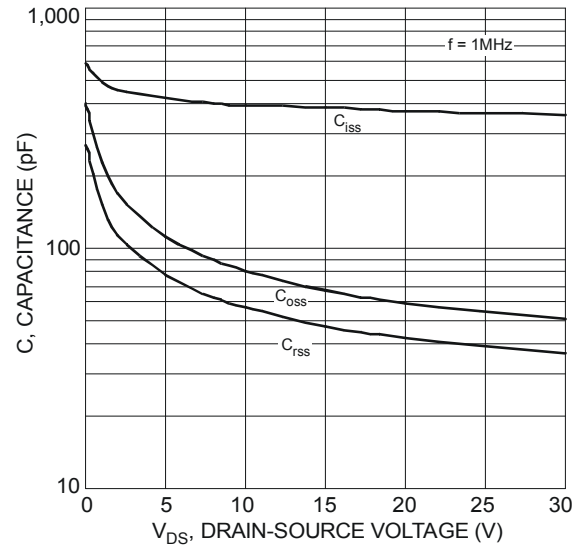


Fig. 8 Typical Total Capacitance

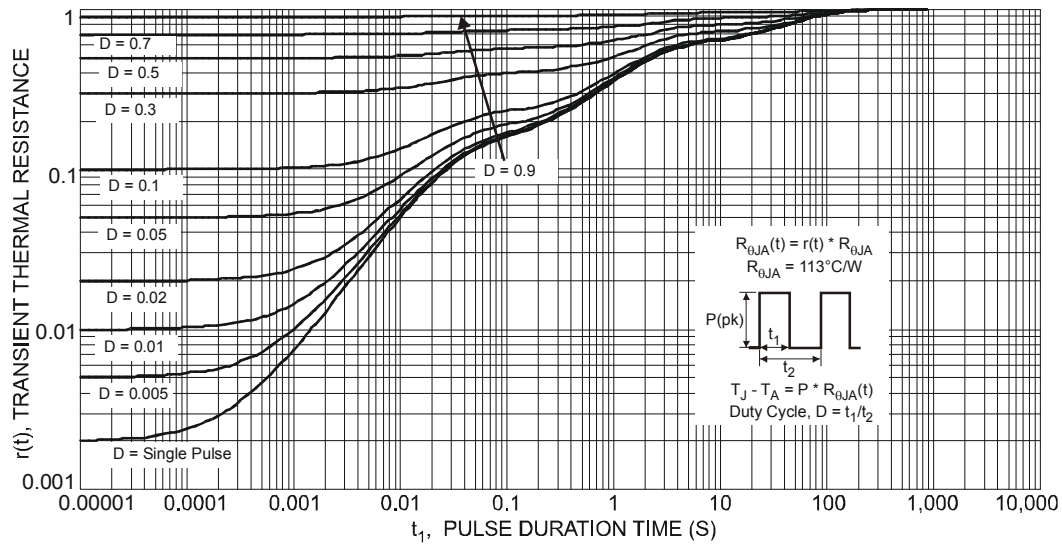
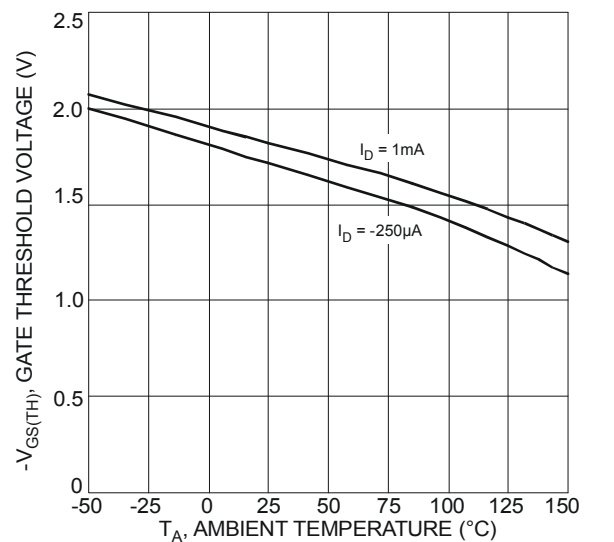
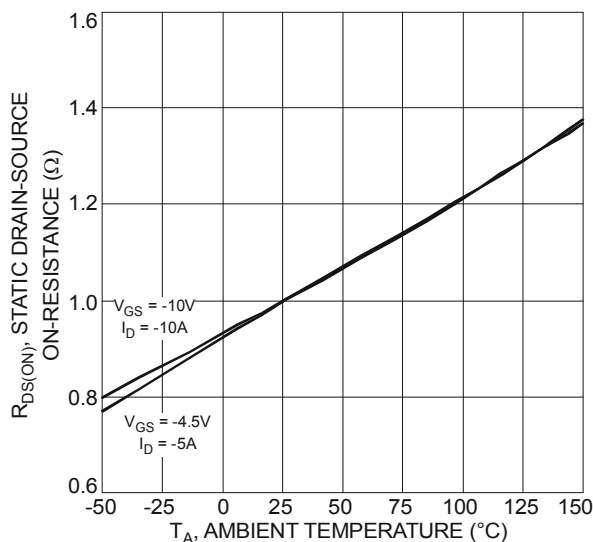
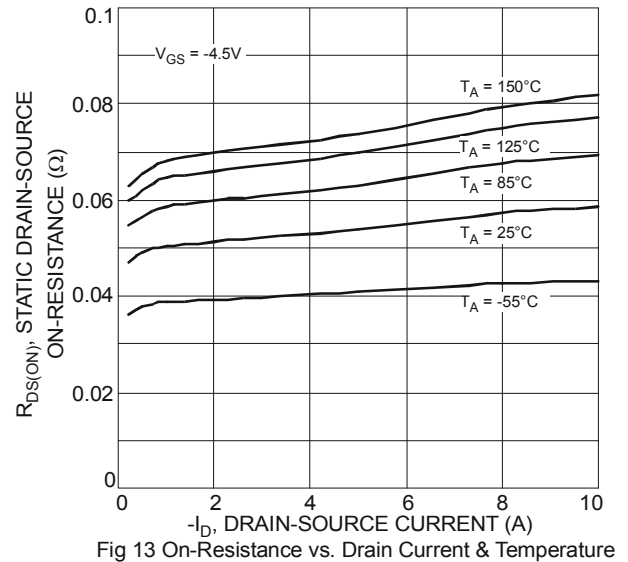
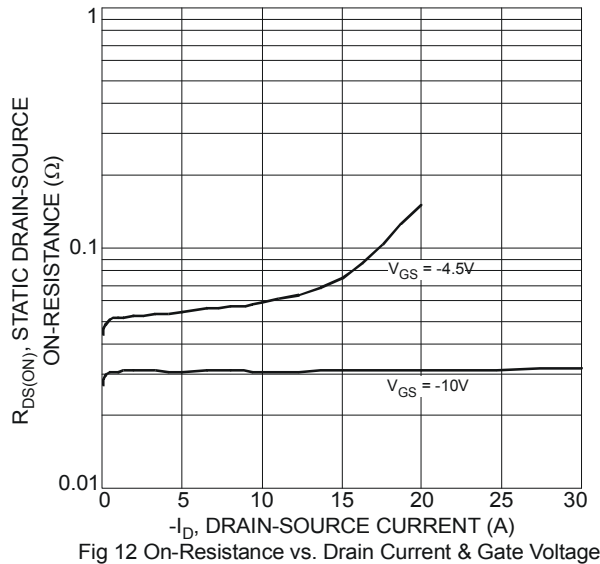
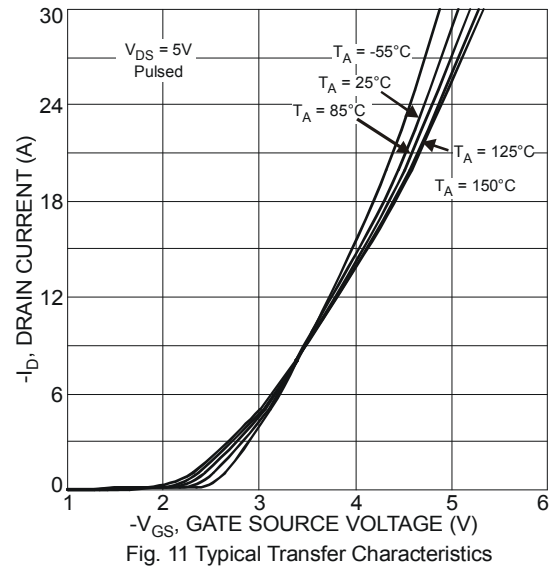
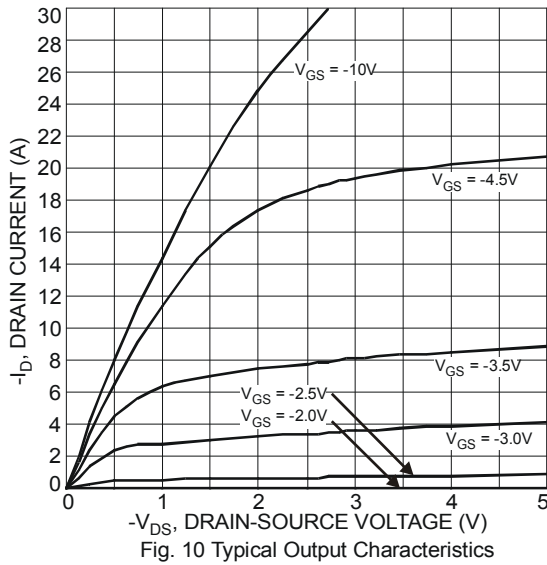


Fig. 9 Transient Thermal Resistance

P-CHANNEL

NEW PRODUCT



P-CHANNEL (continued)

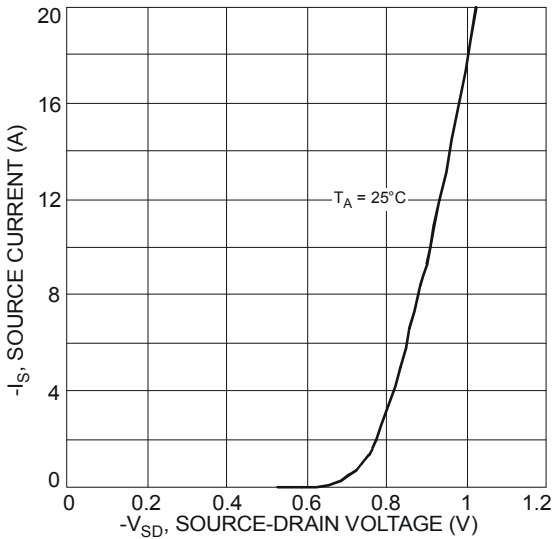


Fig. 16 Reverse Drain Current vs. Source-Drain Voltage

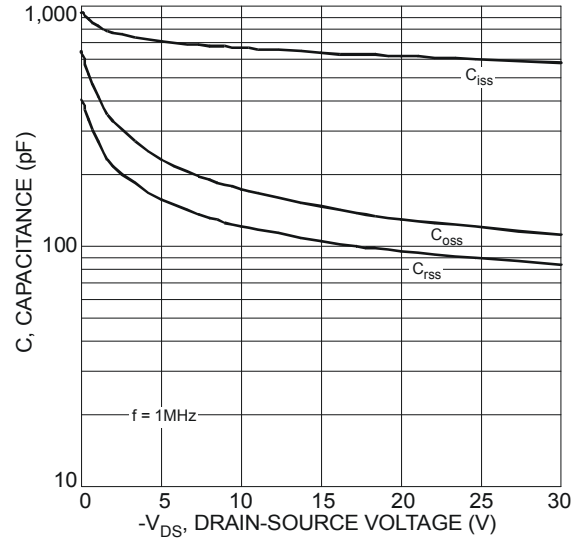


Fig. 17 Typical Total Capacitance

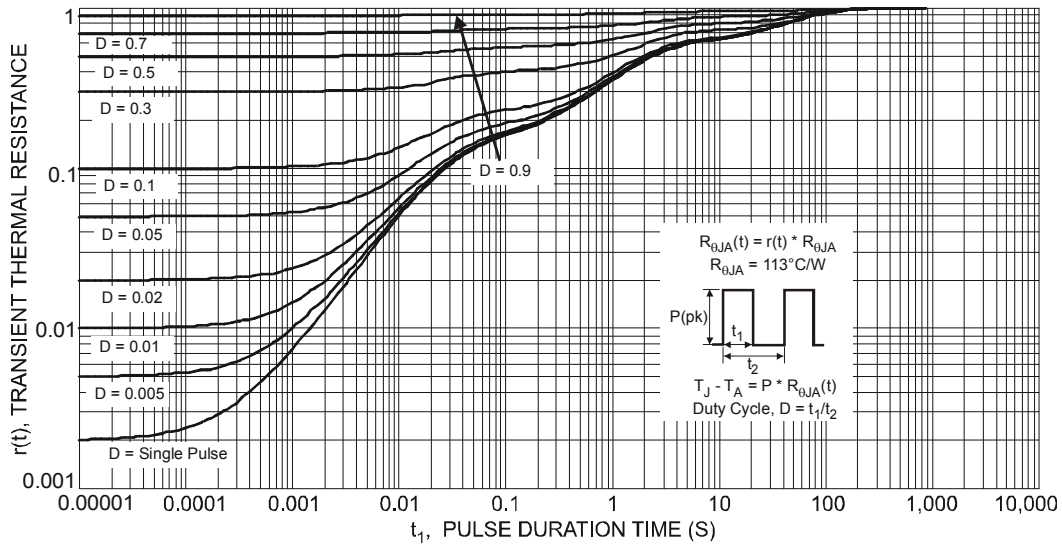


Fig. 18 Transient Thermal Resistance

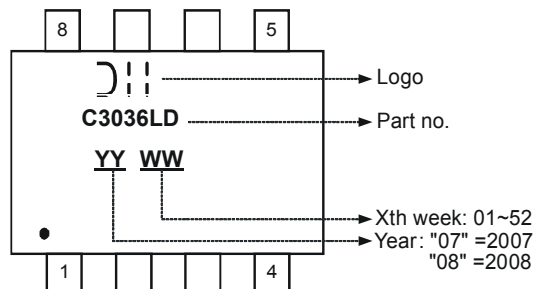
Ordering Information (Note 6)

Part Number	Case	Packaging
DMC3036LSD-13	SOP-8L	2500/Tape & Reel

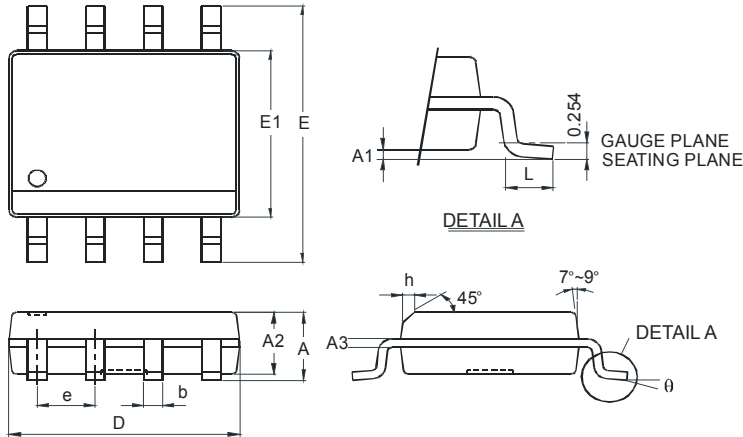
Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information

(Top View)

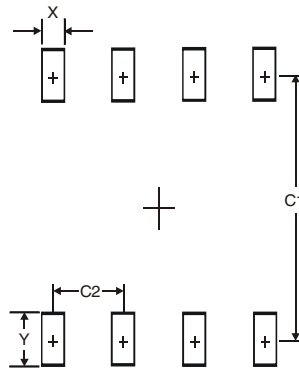


Package Outline Dimensions



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°
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
X	0.60
Y	1.55
C1	5.4
C2	1.27

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