



T-29-25
SD2107

P-CHANNEL ENHANCEMENT-MODE D-MOS POWER FETS

FEATURES

- Gate Stand-off Voltage, $\pm 40V$ min.
- Low Output and Transfer Capacitances
- Wide Variety of Packages
- N-Channel Complements Available

APPLICATIONS

- Complementary Voltage and Current Drivers
- Pulse Amplifiers
- Motor Controls
- Logic Interfaces

ORDERING INFORMATION

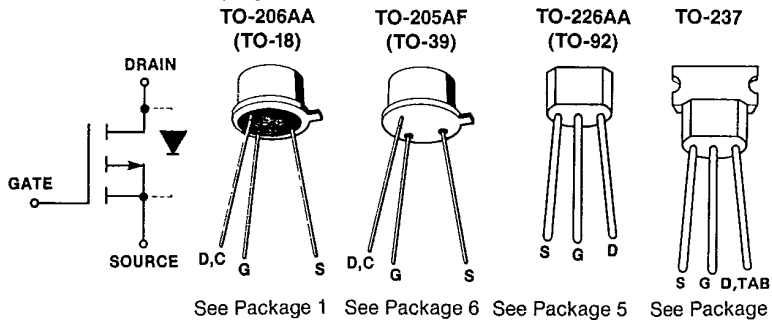
Sorted Chips in Waffle Pack	SD2107CHP
TO-206AA (TO-18) Hermetic Package	SD2107DD
TO-205AF (TO-39) Hermetic Package	SD2107HD
TO-226AA (TO-92) Plastic Package	SD2107BD
TO-237 (92 ⁺) Plastic Package	SD2107AD
Description	-100V, 5.0 ohm

ABSOLUTE MAXIMUM RATINGS ($T_A = +25^\circ C$ unless otherwise noted)

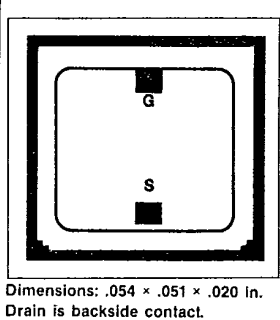
Drain-Source Voltage	-100V	
Drain-Gate Voltage ($V_{GS} = 0$)	-100V	
Gate-Source Voltage	$\pm 40V$	
Continuous Drain Current	$T_A = 25^\circ C$	$T_C = 25^\circ C$
SD2107AD	-26A	-43A
SD2107BD	-24A	-32A
SD2107DD	-26A	-43A
SD2107HD	-44A	-81A
Peak Pulsed Drain Current	-1.1A	

	Continuous Device Dissipation		
	$T_A = +25^\circ C$	$T_C = +25^\circ C$	
SD2107AD	0.36	1.8	W
SD2107BD	0.3	1.0	W
SD2107DD	0.36	1.8	W
SD2107HD	1.0	6.25	W
	Linear Derating Factor		
	$T_A = +25^\circ C$	$T_C = +25^\circ C$	
SD2107AD	2.88	14.4	mW/ $^\circ C$
SD2107BD	2.4	8.0	mW/ $^\circ C$
SD2107DD	2.88	14.4	mW/ $^\circ C$
SD2107HD	8.0	50	mW/ $^\circ C$
Operating Junction Temperature Range	-55 to +150 $^\circ C$		
Storage Temperature Range	-55 to +150 $^\circ C$		
Lead Temperature (1/16" from mounting surface for 30 Sec)	+260 $^\circ C$		

PIN CONFIGURATIONS



CHIP CONFIGURATION

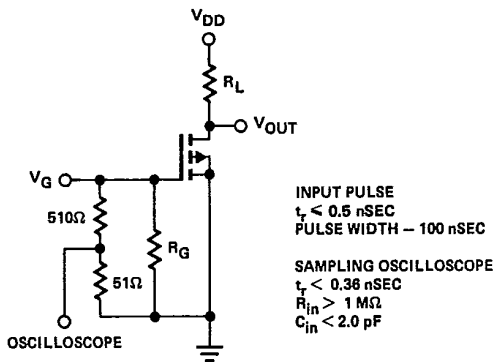


ELECTRICAL CHARACTERISTICS ($T_A = +25^\circ\text{C}$ unless otherwise noted)

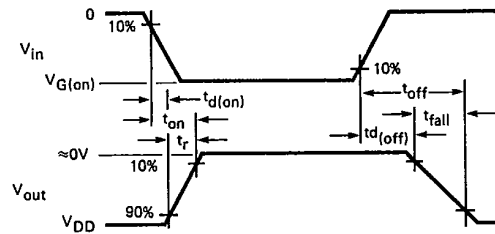
#	CHARACTERISTIC	SD2107			UNIT	TEST CONDITIONS
		MIN	TYP	MAX		
1	BV _{DSS} Drain-Source Breakdown Voltage	-100	-120		V	I _D = -10 μ A, V _{GS} = 0
2		-100	-120			
3	I _{DSS} Drain-Source OFF Leakage Current			-100	nA	V _{DS} = -80V, V _{GS} = 0, T _A = +125 $^\circ$ C
4				-5.0		
5	I _{GSS} Gate-Body Leakage Current			± 10	nA	V _{GS} = ± 30 V, V _{DS} = 0
6				± 1.0		
7	V _{GS(th)} Gate-Source Threshold Voltage	-1.5		-3.5	V	V _{DS} = V _{GS} , I _D = -1.0mA
8	r _{DS(on)} Drain-Source (1) ON Resistance			15	ohms	V _{GS} = -5V, I _D = -0.1A, V _{DS} = -10V, I _D = -0.5A, T _A = +125 $^\circ$ C
9			3.9	5.0		
10				8.0		
11	I _{D(on)} ON Drain Current (1)	-1.1			A	V _{DS} = -25V, V _{GS} = -10V
12	g _{fs} Common-Source (1) Forward Transcond.	200	260		mmhos	V _{DS} = -25V, I _D = -0.5A, f = 1KHz
13	C _{iss} Common-Source Input Capacitance		60	80	pF	V _{DS} = -25V, V _{GS} = 0, f = 1MHz
14	C _{rss} Common-Source Reverse Transfer Capacitance		5.0	8.0		
15	C _{oss} Common-Source Output Capacitance		10.5	20		
16	t _{on} Turn-On Time			16	nSec	V _{DD} = -25V, R _L = 51 ohms, R _G = 51 ohms, V _{G(on)} = -10V
17	t _{off} Turn-Off Time			16		

Note 1: Pulse Test, 80 μ Sec, 1% Duty Cycle

SWITCHING TIME TEST CIRCUIT



TEST WAVEFORMS



TYPICAL PERFORMANCE CHARACTERISTICS ($T_A = +25^\circ\text{C}$ unless otherwise specified)

