

TOPAZ
SEMICONDUCTOR

SD1106

N-CHANNEL ENHANCEMENT-MODE D-MOS POWER FETs

ORDERING INFORMATION

Sorted Chips in Waffle Pack	SD1106CHP
TO-206AA (TO-18) Package	SD1106DD
TO-237 Package	SD1106AD

FEATURES

- Inherent Current Sharing Capability when Paralleled
- Simple Straight-Forward DC Biasing
- Extended Safe Operating Area
- Inherently Temperature Stable —
Output Current Decreases as Temperature Increases

APPLICATIONS

- High-Speed Pulse Amplifiers
- Logic Buffers
- Line Drivers
- Solid-State Relays

ABSOLUTE MAXIMUM RATINGS ($T_C = +25^\circ\text{C}$ unless otherwise noted)

Drain-Source Voltage	60V
Drain-Gate Voltage ($R_{GS} = 1\text{M}\Omega$)	60V
Gate-Source Voltage	$\pm 40\text{V}$
Continuous Drain Current	
$T_C = +100^\circ\text{C}$	$T_C = +25^\circ\text{C}$
.21A	.34A
Peak Pulsed Current	2.0A
Continuous Device Dissipation	
$T_C = +100^\circ\text{C}$	$T_C = +25^\circ\text{C}$
0.4W	1.0W

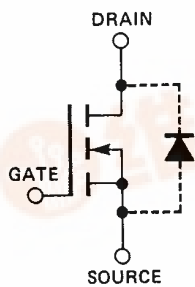
Linear Derating Factor

$T_C = +100^\circ\text{C}$	$T_C = +25^\circ\text{C}$
5.3mW/ $^\circ\text{C}$	8.0mW/ $^\circ\text{C}$

Operating Junction and

Storage Temperature Range	-55°C to $+150^\circ\text{C}$
Lead Temperature ($1/16''$ from mounting surface for 10 Sec)	$+260^\circ\text{C}$

PIN CONFIGURATIONS



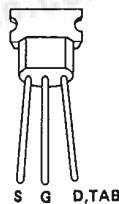
Drain common to Case or Tab.

TO-206AA
(TO-18)



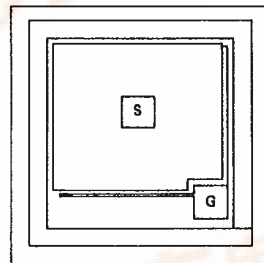
See Package 1

TO-237



See Package 7

CHIP CONFIGURATION

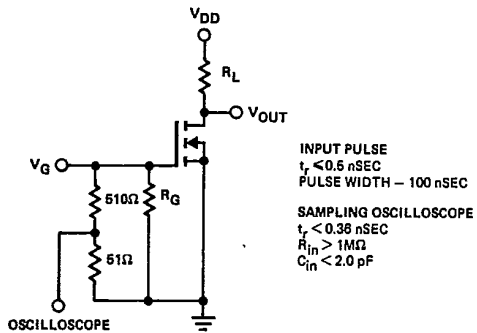


Dimensions: .031 x .032 x .020 inches
Drain is backside contact

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

#	CHARACTERISTIC	SD1106			UNIT	TEST CONDITION
		MIN	TYP	MAX		
1	BV_{DS} Drain-Source Breakdown Voltage	60			V	$I_D = 100\mu\text{A}$, $V_{GS} = 0$
2	$V_{GS(th)}$ Gate-Source Threshold Voltage	0.8		2.5	V	$V_{DS} = V_{GS}$, $I_D = 1\text{mA}$
3	I_{GBS} Gate-Body Leakage Current		.03	10	nA	$V_{GS} = 20\text{V}$, $V_{DS} = 0$
4	I_{DSS} Drain-Source OFF Leakage Current		.01	10	μA	$V_{DS} = 40\text{V}$, $V_{GS} = 0$
5	$I_{D(on)}$ ON Drain Current	0.25			A	$V_{DS} = 25\text{V}$ (Note 1)
6		0.50				$V_{GS} = 5\text{V}$ $V_{GS} = 10\text{V}$
7	$V_{DS(on)}$ Drain-Source ON Voltage		1.8	2.5	V	$V_{GS} = 10\text{V}$, $I_D = 0.5\text{A}$ (Note 1)
8	g_{fs} Common-Source Forward Transcond.	100	270		mmhos	$V_{DS} = 15\text{V}$, $I_D = 0.5\text{A}$ $f = 1\text{KHz}$ (Note 1)
9	C_{iss} Common-Source Input Capacitance		80		pF	$V_{DS} = 25\text{V}$, $V_{GS} = 0$ $f = 1\text{MHz}$
10	C_{rss} Common-Source Reverse Transfer Capacitance		1.3			
11	C_{oss} Common-Source Output Capacitance		10.5			
12	t_{on} Turn-On Time		4.0	6.0	nSec	$V_{DD} = 25\text{V}$ $R_L = 25\text{ ohms}$ $R_G = 51\text{ ohms}$ $V_{G(on)} = 10\text{V}$
13	t_{off} Turn-Off Time		4.0	6.0		

 Note 1: Pulse Test 80 μSec , 1% Duty Cycle

SWITCHING TIMES TEST CIRCUIT

TEST WAVEFORMS
