T-29-25

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°C unless otherwise noted)

Drain-Source Voltage 60V
Drain-Gate Voltage (R_{GS} = 1MΩ) 60V
Gate-Source Voltage ..... ±40V
Continuous Drain Current

T_C = +100°C	T_C = +25°C
.21A	.34A

Peak Pulsed Current 2.0A
Continuous Device Dissipation

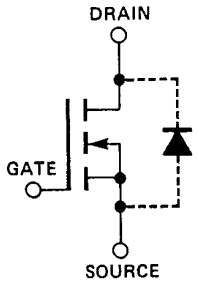
T_C = +100°C	T_C = +25°C
0.4W	1.0W

Linear Derating Factor

T_C = +100°C	T_C = +25°C
5.3mW/°C	8.0mW/°C

Operating Junction and Storage Temperature Range ..... -55°C to +150°C
Lead Temperature (1/16" from mounting surface for 10 Sec) ..... +260°C

PIN CONFIGURATIONS

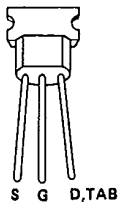


Drain common to Case or Tab.

TO-206AA (TO-18)

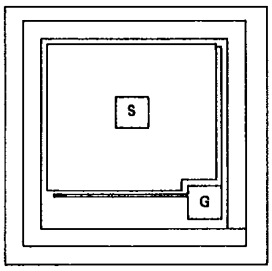
See Package 1

TO-237



See Package 7

CHIP CONFIGURATION



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

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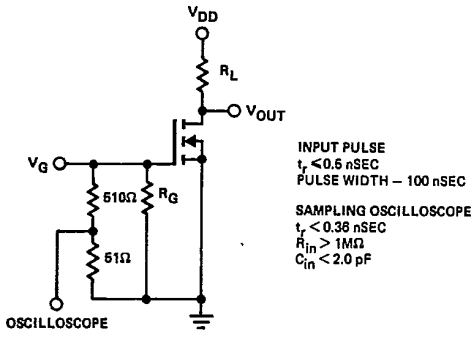
ELECTRICAL CHARACTERISTICS (T_A = +25°C unless otherwise noted)

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

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

SWITCHING TIMES TEST CIRCUIT



TEST WAVEFORMS