

TOPAZ

SEMICONDUCTOR

T-29-25

SD1100, SD1101

N-CHANNEL ENHANCEMENT-MODE HIGH-VOLTAGE D-MOS POWER FETS

ORDERING INFORMATION

Sorted Chips In Conductive Waffle Pack	SD1100CHP	SD1101CHP
TO-226AA (TO-92) Package	---	SD1101BD
TO-206AA (TO-18) Package	SD1100DD	SD1101DD
TO-205AF (TO-39) Package	SD1100HD	SD1101HD
Description	450V, 35 ohm	400V, 25 ohm

FEATURES

- Gate Stand-off, $\pm 40V$ min.
- P-channel complements available, VP0540 series
- Wide variety of Packages

APPLICATIONS

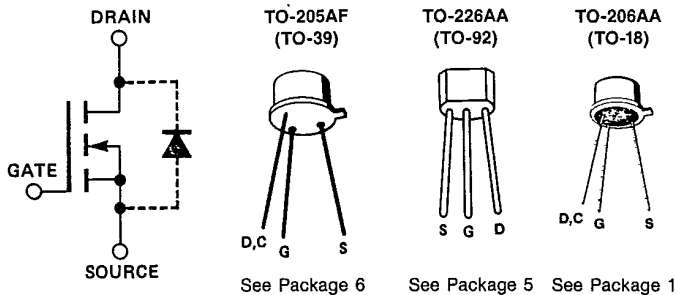
- Motor Controls
- Line Drivers
- Power Supplies

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

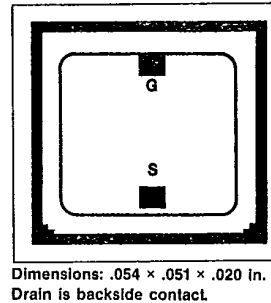
Drain-Source Voltage		
SD1100	450V	
SD1101	400V	
Drain-Gate Voltage ($R_{GS} = 1M\Omega$)		
SD1100	450V	
SD1101	400V	
Gate-Source Voltage	$\pm 40V$	
Continuous Drain Current		
	$T_C = +100^\circ C$	$T_C = +25^\circ C$
SD1100DD	.10A	.17A
SD1100HD	.21A	.33A
SD1101BD	.11A	.18A
SD1101DD	.13A	.21A
SD1101HD	.26A	.41A
Peak Pulsed Drain Current	0.25A	

Maximum Power Dissipation			
	$T_C = +100^\circ C$	$T_C = +25^\circ C$	
HD, TO-39 Pkg.	2.75W	6.88W	
BD, TO-92 Pkg.	0.5W	1.35W	
DD, TO-18 Pkg.	0.7W	1.80W	
Linear Derating Factor			
	Junction to Ambient	Junction to Ambient	
	(mW/ $^\circ C$)	(mW/ $^\circ C$)	
HD, TO-39 Pkg.	36.6	55	
BD, TO-92 Pkg.	6.66	10.8	
DD, TO-18 Pkg.	9.33	14.4	
Operating Junction and Storage Temperature Range	-55 $^\circ C$ to +150 $^\circ C$		
Lead Temperature (1/8" from mounting surface for 10 Sec)	+260 $^\circ C$		

PIN CONFIGURATIONS



CHIP CONFIGURATION





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

#	CHARACTERISTIC		SD1100			SD1101			UNIT	TEST CONDITIONS		
			MIN	TYP	MAX	MIN	TYP	MAX				
1	BV_{DSS}	Drain Source Breakdown Voltage	450	475		400	425		V	$I_D = 10\mu\text{A}, V_{GS} = 0$		
2	I_{GSSF}	Gate Forward Leakage Current		.03	10		.03	10	nA	$V_{GS} = 20\text{V}$	$V_{DS} = 0$	
3	I_{GSSR}	Gate Reverse Leakage Current		-.03	-10		-.03	-10		$V_{GS} = -20\text{V}$		
4	I_{DSS}	Drain-Source OFF Leakage Current		2.0	200				nA	$V_{DS} = 360\text{V}$	$T_C = +125^\circ\text{C}$	
5					2.0				μA	$V_{GS} = 0$		
6								2.0	200	nA		$V_{DS} = 320\text{V}$
7									2.0	μA		$V_{GS} = 0$
8	$V_{GS(th)}$	Gate Source Threshold Voltage	1.0	3.0	5.0	1.0	3.0	5.0	V	$I_D = 10\mu\text{A}, V_{DS} = V_{GS}$		
9	$I_{D(ON)}$	ON Drain Current ⁽¹⁾	250	750		250	750		mA	$V_{DS} = 25\text{V}, V_{GS} = 10\text{V}$		
10	$r_{DS(ON)}$	Drain-Source ON Resistance ⁽¹⁾		13	35		13	25	ohms	$V_{GS} = 10\text{V}$	$T_C = 125^\circ\text{C}$	
11				19	60		19	42		$I_D = 10\text{mA}$		
12	g_{fs}	Forward Transconductance ⁽¹⁾	250	400		250	400			$V_{DS} = 25\text{V}, I_D = 250\text{mA}$ $f = 1\text{KHz}$		
17	DYNAMIC	C_{iss}		80	100		80	100	pF	$V_{DS} = 25\text{V}, V_{GS} = 0$ $f = 1\text{MHz}$		
18		C_{rss}		1.3	2.5		1.3	2.5				
19		C_{oss}		10.5	15		10.5	15				

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

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

