



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

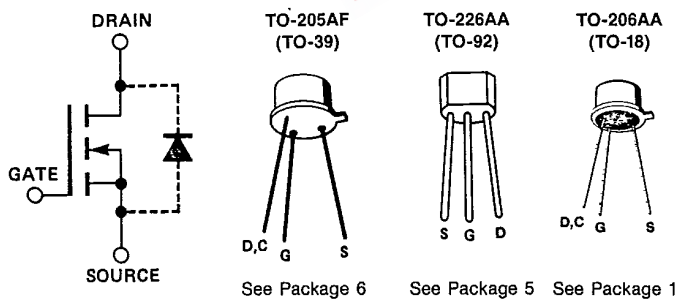
APPLICATIONS

- Motor Controls
- Line Drivers
- Power Supplies

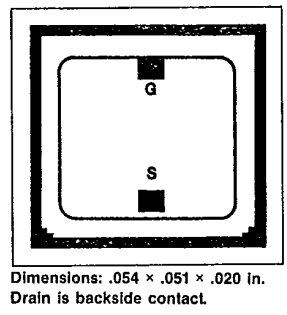
ABSOLUTE MAXIMUM RATINGS ($T_C = +25^\circ C$ unless otherwise noted)

Drain-Source Voltage		Maximum Power Dissipation	
SD1100	450V	$T_C = +100^\circ C$	$T_C = +25^\circ C$
SD1101	400V	HD, TO-39 Pkg.	2.75W 6.88W
Drain-Gate Voltage ($R_{GS} = 1M\Omega$)		BD, TO-92 Pkg.	0.5W 1.35W
SD1100	450V	DD, TO-18 Pkg.	0.7W 1.80W
SD1101	400V	Linear Derating Factor	
Gate-Source Voltage		Junction to Ambient	Junction to Ambient
$\pm 40V$		($mW/^\circ C$)	($mW/^\circ C$)
Continuous Drain Current		SD1100DD	36.6 55
$T_C = +100^\circ C$	$T_C = +25^\circ C$	SD1100HD	6.66 10.8
.10A	.17A	SD1101BD	9.33 14.4
.21A	.33A	SD1101DD	
.11A	.18A	SD1101HD	
.13A	.21A	Peak Pulsed Drain Current	
.26A	.41A		0.25A

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	nA		$V_{GS} = -20\text{V}$
4	I_{DSS} Drain-Source OFF Leakage Current		2.0	200				nA	$V_{DS} = 360\text{V}$ $V_{GS} = 0$	
5				2.0				μA		$T_C = +125^\circ\text{C}$
6						2.0	200	nA	$V_{DS} = 320\text{V}$ $V_{GS} = 0$	
7							2.0	μA		$T_C = +125^\circ\text{C}$
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	$V_{GS} = 10\text{V}$ $I_D = 10\text{mA}$ $T_C = 125^\circ\text{C}$	
11				19	60		19			42
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} Common-Source Input Capacitance		80	100		80	100		$V_{DS} = 25\text{V}, V_{GS} = 0$ $f = 1\text{MHz}$	
18		C_{rss} Common-Source Reverse Transfer Capacitance		1.3	2.5		1.3	2.5		pF
19		C_{oss} Common-Source Output Capacitance		10.5	15		10.5	15		pF

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

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

