



SEMI PROCESSES INC.

1885 Norman Avenue, Santa Clara, California 95050
(408) 988-4004 · TWX 910-338-0025 SPI SNTA

ORDERING INFORMATION	Sorted Chips in Carriers	T0-3 Package
450V, 2.0 ohm	SD1002CHP	SD1002KD
400V, 1.5 ohm	SD1011CHP	SD1011KD
400V, 2.0 ohm	SD1012CHP	SD1012KD
350V, 1.5 ohm	SD1021CHP	SD1021KD

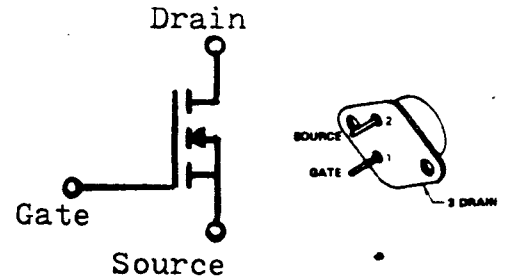
ABSOLUTE MAXIMUM RATINGS
($T_A = +25^\circ\text{C}$ unless otherwise noted)

Drain-Source Voltage	
SD1002.....	450V
SD1011, SD1012.....	400V
SD1021.....	350V
Drain-Gate Voltage ($V_{GS} = 0$)	
SD1002.....	450V
SD1011, SD1012.....	400V
SD1021.....	350V
Gate-Source Voltage.....	
	$\pm 30\text{V}$
Continuous Drain Current (Note 1, Note 2)...	
	4.0A
Peak Drain Current (Note 1, Note 2).....	
	8.0A
Continuous Device Dissipation	
(Note 1, Note 2).....80W	
Linear Derating Factor (Note 1, Note 2).....	
	640mW/ $^\circ\text{C}$
Operating Junction	
Temperature Range.....	
	-55 to +150 $^\circ\text{C}$
Storage Temperature Range.....	
	-55 to +150 $^\circ\text{C}$
Lead Temperature (1/16" from mounting	
surface for 30 Sec).....	
	+260 $^\circ\text{C}$

Note 1: $T_{Case} = +25^\circ\text{C}$

Note 2: Not applicable to chips. Final value depends upon mounting substrate.

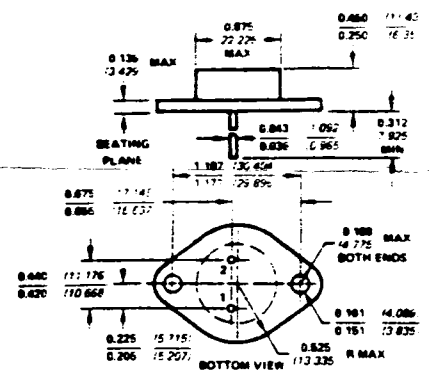
SCHEMATIC DIAGRAM



Body internally connected to Source.

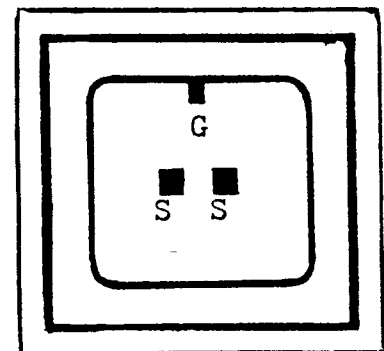
Drain common to Case.

PACKAGE DIMENSIONS T0-3



All dimensions in inches and (millimeters)

CHIP CONFIGURATION



Dimensions: .128 x .127
x .010 inches
Drain is backside contact.



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PRELIMINARY DATA SHEET

SD1002 SD1011 SD1012 SD1021

N-Channel Enhancement-Mode

High-Voltage D-MOS Power FETs

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

CHARACTERISTIC		SD1002			SD1011			UNIT	TEST CONDITION		
		SD1012			SD1021						
		min	typ	max	min	typ	max				
V_{DSS}	Drain-Source Breakdown Voltage	SD1002	450	470				V	$I_D = 100\mu\text{A}, V_{GS} = 0$		
		SD1012	400	430				V			
		SD1011			400	430		V			
		SD1021			350	390		V			
$V_{GS(th)}$ Gate-Source Threshold Voltage			3.0	5.0		3.0	5.0	V	$I_D = 1\text{mA}, V_{DS} = V_{GS}$		
I_{GBS}	Gate-Body Leakage Current		1.0	500		1.0	500	nA	$V_{GS} = 20\text{V}, V_{DS} = 0$		
I_{DSS}	Drain-Source OFF Leakage Current	SD1002	1.0					μA	$V_{DS} = 360\text{V}$	$V_{GS} = 0$	
		SD1012	1.0					μA	$V_{DS} = 320\text{V}$		
		SD1011				1.0			μA		$V_{DS} = 320\text{V}$
		SD1021				1.0			μA		$V_{DS} = 280\text{V}$
$r_{DS(on)}$ Static Drain-Source ON Resistance			1.8	2.0		1.3	1.5	ohms	$I_D = 1.0\text{A}, V_{GS} = 15\text{V}$ (Note 1)		
g_{fs} Common-Source Forward Transcond.			1.6			1.6		mhos	$V_{DS} = 25\text{V}, I_D = 1.0\text{A}$ $f = 1\text{KHz},$ (Note 1)		
C_{iss}	Common-Source Input Capacitance		750			750		pF	$V_{DS} = 25\text{V}, V_{GS} = 0$ $f = 1\text{MHz}$		
C_{rss}	Common-Source Reverse Transfer Capacitance		25			25		pF			
C_{oss}	Common-Source Output Capacitance		100			100		pF			

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

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