



**SD1137, TN0106
TN0110**

**N-CHANNEL ENHANCEMENT-MODE
D-MOS POWER FETs**

T-29-25

ORDERING INFORMATION

TO-226AA (TO-92) Plastic Package	SD1137BD	TN0106N3	TN0110N3
Sorted Chips in Wafer Pack	SD1137CHP	TN0106ND	TN0110ND
Description	60V, 2.5 ohm	60V, 3.0 ohm	100V, 3.0 ohm

FEATURES

- Low Threshold, $V_{GS(th)}$ 1.5V max
- Low Output and Transfer Capacitance
- Extended Safe Operating Area
- Complementary P-Channel Drivers Available

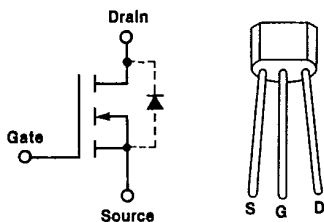
APPLICATIONS

- Complementary Voltage and Current Drivers
- Line Drivers
- Pulse Amplifiers
- Solid-State Relays

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

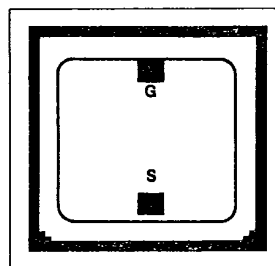
Drain-Source Voltage			Peak Pulsed Drain Current	+ 2.0A	
SD1137, TN0106	+ 60V		Continuous Device Dissipation		
TN0110	+ 100V		$T_A = +25^\circ\text{C}$	$T_C = +25^\circ\text{C}$	
SD1137, TN0106	+ 60V		TO-92 (N3 & BD) pkg	0.30W	1.0W
TN0110	+ 100V		Linear Derating Factor		
Gate-Source Voltage	$\pm 30V$		$T_A = +25^\circ\text{C}$	$T_C = +25^\circ\text{C}$	
Continuous Drain Current			TO-92 (N3 & BD) pkg	3.0mW/ $^\circ\text{C}$	10mW/ $^\circ\text{C}$
	$T_A = +25^\circ\text{C}$	$T_C = +25^\circ\text{C}$	Operating Junction and Storage Temperature Range	-55 $^\circ\text{C}$ to +150 $^\circ\text{C}$	
SD1137BD	.25A	.46A	Lead Temperature (1/16" from mounting surface		
TN0106N3 } TN0110N3 }	.23A	.42A	for 30 sec)	+ 250 $^\circ\text{C}$	

PIN CONFIGURATION



**PACKAGE DIMENSIONS
(TO-92) TO-226AA**
(See Package 5)

CHIP CONFIGURATION



Dimensions: .054 x .051 x .020 in.
Drain is backside contact.



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

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#	PARAMETER	SD1137			TN0106			TN0110			UNIT	CONDITIONS	
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX			
1	BV_{DSS} Drain-Source Breakdown Voltage	60	90		60	90		100	115		V	$I_D = 1.0\text{mA}, V_{GS} = 0$	
2	I_{DSS} Drain-Source Off Leakage Current			100							μA	$V_{DS} = 48\text{V}$ $V_{GS} = 0$ $T_A = +125^\circ\text{C}$	
3							500						
4									500				
5			.01	1.0									$V_{GS} = 0$
6						.01	10						
7								.01	10				
8													
8	I_{GBS} Gate-Body Leakage Current			± 1.0			± 1.0		± 1.0		μA	$V_{DS} = 0$ $V_{GB} = \pm 30\text{V}$	
9				1.0			10		10		nA		$V_{GB} = \pm 20\text{V}$
10	$V_{GS(th)}$ Gate-Source Threshold Voltage	0.5		1.5	0.5		1.5	0.5	1.5		V	$V_{DS} = V_{GS}, I_D = 1.0\text{mA}$	
11	$r_{DS(on)}$ Drain-Source On Resistance			4.5			4.5			4.5	ohms	$V_{GS} = 5\text{V}, I_D = .25\text{A}$ $V_{GS} = 10\text{V}$ $I_D = 1.0\text{A}$ $I_D = 0.5\text{A}$	
12				2.5									
13							3.0			3.0			
14	$I_{D(on)}$ On Drain Current				.75			.75			A	$V_{GS} = 5\text{V}$ $V_{GS} = 10\text{V}$ $V_{DS} = 25\text{V}$	
15			2.0		2.0			2.0					
16	g_{fs} Common-Source Forward Transcond.	300	500								mmhos	$V_{DS} = 25\text{V}$ $V_{GS} = 20\text{V}$ $I_D = 0.5\text{A}$ $f = 1\text{KHz}$	
17					225	500		225	500				
18	V_{SD} Source-Drain Forward Voltage			1.5							V	$V_{GS} = 0$ $I_{SD} = 0.8\text{A}$ $I_{SP} = 0.5\text{A}$	
19							1.5		1.5				
20	C_{iss} Common-Source Input Capacitance			60			60		60		pF	$V_{DS} = 25\text{V}$ $V_{GS} = 0$ $f = 1\text{MHz}$	
21	C_{oss} Common-Source Output Capacitance		11	35		11	35		11	35			
22	C_{rss} Common-Source Reverse Transfer Capacitance		1.5	8.0		1.5	8.0		1.5	8.0			
23	t_{on} Turn ON Time		8.0	10		8.0	10		8.0	10	nS	$V_{DD} = 25\text{V}, V_{G(on)} = 10\text{V}$ $R_G = 51\Omega, R_L = 25\Omega$	
24	t_{off} Turn OFF Time		8.0	12		8.0	12		8.0	12			

NOTE 1: Pulse Test, 80 μ Sec, 1% Duty Cycle