TOPAZ SEMICONDUCTOR

SD1137, TN0106 TN0110

T-29-25

N-CHANNEL ENHANCEMENT-MODE D-MOS POWER FETs

ORDERING INFORMATION

TO-226AA (TO-92) Plastic Package	SD1137BD	TN0106N3	TN0110N3
Sorted Chips in Waffle 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°C unless otherwise specified)

Drain-Source Voltage
SD1137, TN0106 ..... +60V
TN0110 ..... +100V
SD1137, TN0106 ..... +60V
TN0110 ..... +100V
Gate-Source Voltage ..... ±30V
Continuous Drain Current

	T_A = +25°C	T_C = +25°C
SD1137BD	.25A	.46A
TN0106N3 }	.23A	.42A
TN0110N3 }		

Peak Pulsed Drain Current ..... +2.0A
Continuous Device Dissipation

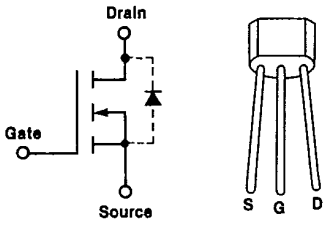
	T_A = +25°C	T_C = +25°C
TO-92 (N3 & BD) pkg	0.30W	1.0W

Linear Derating Factor

	T_A = +25°C	T_C = +25°C
TO-92 (N3 & BD) pkg	3.0mW/°C	10mW/°C

Operating Junction and Storage Temperature Range -55°C to +150°C
Lead Temperature (1/16" from mounting surface for 30 sec) ..... +250°C

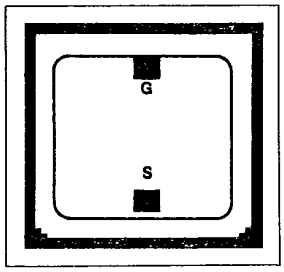
PIN CONFIGURATION



PACKAGE DIMENSIONS (TO-92) TO-226AA

(See Package 5)

CHIP CONFIGURATION



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

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

#	PARAMETER	SD1137 MIN	SD1137 TYP	SD1137 MAX	TN0106 MIN	TN0106 TYP	TN0106 MAX	TN0110 MIN	TN0110 TYP	TN0110 MAX	UNIT	CONDITIONS		
1	BV_{DSS} Drain-Source Breakdown Voltage	60	90		60	90		100	115		V	I_D = 1.0mA, V_{GS} = 0		
2	I_{DSS} Drain-Source Off Leakage Current			100							μA	V_{DS} = 48V	T_A = +125°C	
3							500					V_{DS} = 48V	V_{GS} = 0	
4										500		V_{DS} = 80V		
5			.01	1.0								V_{DS} = 60V		
6						.01	10					V_{DS} = 60V	V_{GS} = 0	
7									.01	10		V_{DS} = 100V		
8	I_{GBS} Gate-Body Leakage Current			±1.0			±1.0			±1.0	μA	V_{GB} = ±30V	V_{DS} = 0	
9				1.0			10			10	nA	V_{GB} = ±20V		
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 = 1.0mA		
11	$r_{DS(on)}$ Drain-Source On Resistance			4.5			4.5			4.5	ohms	V_{GS} = 5V, I_D = .25A		(Note 1)
12				2.5								V_{GS} = 10V	I_D = 1.0A	
13							3.0			3.0			I_D = 0.5A	
14	$I_{D(on)}$ On Drain Current				.75			.75			A	V_{GS} = 5V	V_{DS} = 25V	
15		2.0			2.0			2.0				V_{GS} = 10V		
16	g_{fs} Common-Source Forward Transcond.	300	500								mmhos	V_{DS} = 25V	I_D = 0.5A	
17					225	500		225	500			V_{DS} = 20V	f = 1KHz	
18	V_{SD} Source-Drain Forward Voltage			1.5							V	I_{SD} = 0.8A	V_{GS} = 0	
19							1.5			1.5		I_{SD} = 0.5A		
20	c_{iss} Common-Source Input Capacitance			60			60			60	pF	V_{DS} = 25V V_{GS} = 0 f = 1MHz		
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} = 25V, $V_{G(on)}$ = 10V		
24	t_{off} Turn OFF Time		8.0	12		8.0	12		8.0	12		R_G = 51Ω, R_L = 25Ω		

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