SGS-THOMSON MICROELECTRONICS

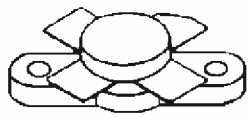
TSD2902

RF & MICROWAVE TRANSISTORS HF/VHF/UHF N-CHANNEL MOSFETS

PRODUCT DEVELOPMENT DATA SHEET

This data sheet contains the design criteria and target specifications for a product which is currently under development by SGS-THOMSON. The design criteria and specifications of this item could change prior to introduction and SGS-THOMSON assumes no liability for use of information contained herein.

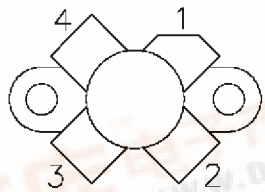
- 2 - 500 MHz
- 15 WATTS
- 28 VOLTS
- 14 dB MIN. AT 400 MHz
- CLASS A OR AB



.380 4LFL (M113)

ORDER CODE	BRANDING
TSD2902	TSD2902

PIN CONNECTION



1. Drain
2. Source
3. Gate
4. Source

DESCRIPTION

The TSD2902 is a gold metallized N-channel MOS field effect RF power transistor. The TSD2902 is intended for use in 28V DC large signal applications up to 400 MHz.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
$V_{(BR)DSS}$	Drain-Source Voltage	60	V
V_{DGR}	Drain-Gate Voltage	60	V
V_{GS}	Gate-Source Voltage	+/- 20	V
I_D	Drain Current	3.9	A
P_{DISS}	Power Dissipation	55.0	W
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	- 65 to +150	°C

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	3.2	°C/W

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

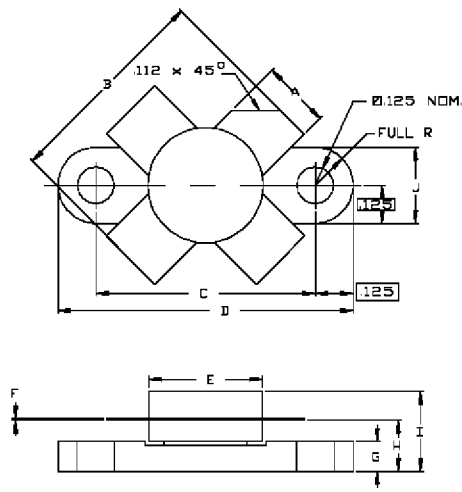
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$V_{(BR)DSS}$	V_{GS} = 0V	I_{DS} = 5MA		60	—	—	V
I_{DSS}	V_{GS} = 0V	V_{DS} = 28V		—	—	1	mA
I_{GSS}	V_{GS} = 20V	V_{DS} = 0V		—	—	1	µA
G_{FS}	V_{DS} = 10V	I_D = 1.25A		0.5	—	—	mho
C_{ISS}	V_{GS} = 0V	V_{DS} = 28V	F = 1MHz	—	20	—	pF
C_{OSS}	V_{GS} = 0V	V_{DS} = 28V	F = 1MHz	—	13	—	pF
C_{RSS}	V_{GS} = 0V	V_{DS} = 28V	F = 1MHz	—	3	—	pF
$V_{GS(TH)}$	V_{DS} = 10V	I_D = 25mA		1.0	4.5	6.0	V

DYNAMIC

Symbol	Test Conditions				Value			Unit
					Min.	Typ.	Max.	
P_L	f = 400MHz	V_{DD} = 28V		I_{DQ} = 50 mA	15	—	—	W
G_{PS}	f = 400MHz	V_{DD} = 28V	P_{OUT} = 30W	I_{DQ} = 50 mA	14	15	—	dB
η_D	f = 400MHz	V_{DD} = 28V	P_{OUT} = 30 W	I_{DQ} = 50 mA	—	50	—	%

PACKAGE MECHANICAL DATA

Ref.: Dwg. No. 12-0113
UDCS No. 1010936



SGS-THOMSON MICRODELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.220/5,59	.230/5,84
B	.785/19,94	
C	.720/18,29	.730/18,54
D	.970/24,64	.980/24,89
E		.385/9,78
F	.004/0,10	.006/0,15
G	.085/2,16	.105/2,67
H	.160/4,06	.180/4,57
I		.280/7,11
J	.240/6,10	.255/6,48