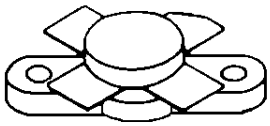
SGS-THOMSON MICROELECTRONICS

SD2904

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

PRELIMINARY DATA

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



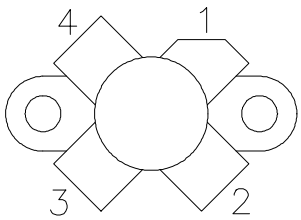
.380 4LFL (M113)

ORDER CODE	BRANDING
SD2904	SD2904

DESCRIPTION

The SD2904 is a gold metallized N-channel MOS field effect RF power transistor. The SD2904 is intended for use in 28V DC large signal applications up to 400 MHz.

PIN CONNECTION



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

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

Symbol	Parameter	Value	Unit
V_{DSS}	Drain-Source Voltage	65	V
V_{DGR}	Drain-Gate Voltage (R_{GS} = 1.0 MΩ)	65	V
V_{GS}	Gate-Source Voltage	+/- 20	V
I_D	Drain Current	5.0	A
P_{DISS}	Power Dissipation ($T_{heatsink} \leq 25°C$)	85.4	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	1.75	°C/W
$R_{TH(c-s)}$	Case-Heatsink Thermal Resistance	0.30	°C/W

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

STATIC

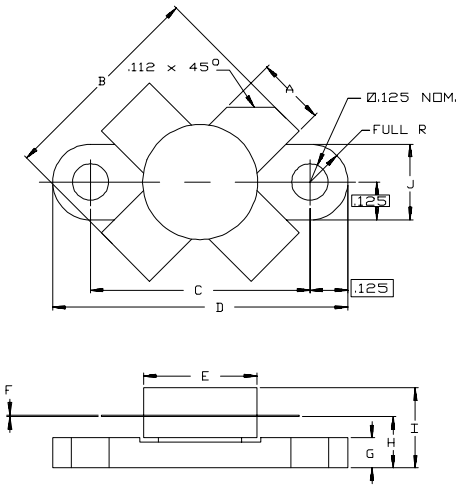
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$V_{(BR)DSS}$	V_{GS} = 0V	I_{DS} = 30mA		65	—	—	V
I_{DSS}	V_{GS} = 0V	V_{DS} = 28V		—	—	3	mA
I_{GSS}	V_{GS} = 20V	V_{DS} = 0V		—	—	2	µA
G_{FS}	V_{DS} = 10V	I_D = 3A		1.2	—	—	mho
C_{ISS}	V_{GS} = 0V	V_{DS} = 28V	F = 1MHz	—	—	60	pF
C_{OSS}	V_{GS} = 0V	V_{DS} = 28V	F = 1MHz	—	—	54	pF
C_{RSS}	V_{GS} = 0V	V_{DS} = 28V	F = 1MHz	—	—	9.6	pF
$V_{DS(ON)}$	V_{GS} = 10V	I_D = 3A		—	—	1.6	V
$V_{GS(TH)}$	V_{DS} = 10V	I_D = 60mA		1.0	4.2	6.0	V

DYNAMIC

Symbol	Test Conditions					Value			Unit
						Min.	Typ.	Max.	
P_L	f = 400MHz	V_{DD} = 28V		I_{DQ} =	50mA	30	—	—	W
G_{PS}	f = 400MHz	V_{DD} = 28V	Pout = 30 W	I_{DQ} =	50mA	10	11	—	dB
η_D	f = 400MHz	V_{DD} = 28V	Pout = 30 W	I_{DQ} =	50mA	45	50	—	%

PACKAGE MECHANICAL DATA

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



SGS-THOMSON MICROELECTRONICS		
	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