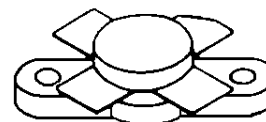


# RF & MICROWAVE TRANSISTORS HF/VHF/UHF N-CHANNEL MOSFETS

PRELIMINARY DATA

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

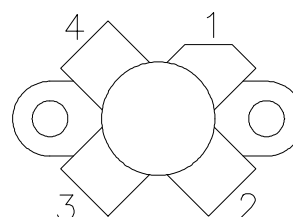

**.380 4LFL (M113)**
**ORDER CODE**  
SD2904

**BRANDING**  
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                      3. Gate  
2. Source                    4. Source

## ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>DSS</sub>	Drain-Source Voltage	65	V
V <sub>DGR</sub>	Drain-Gate Voltage (R <sub>GS</sub> = 1.0 MΩ)	65	V
V <sub>GS</sub>	Gate-Source Voltage	+/- 20	V
I <sub>D</sub>	Drain Current	5.0	A
P <sub>DISS</sub>	Power Dissipation (T <sub>heatsink</sub> ≤ 25°C )	85.4	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +150	°C

## THERMAL DATA

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	1.75	°C/W
R <sub>TH(c-s)</sub>	Case-Heatsink Thermal Resistance	0.30	°C/W

**ELECTRICAL SPECIFICATIONS** ( $T_{\text{case}} = 25^{\circ}\text{C}$ )**STATIC**

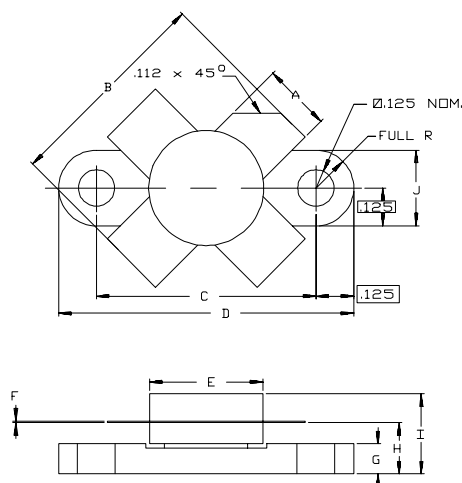
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$V_{(\text{BR})\text{DSS}}$	$V_{\text{GS}} = 0\text{V}$	$I_{\text{DS}} = 30\text{mA}$	65	—	—	V
$I_{\text{DSS}}$	$V_{\text{GS}} = 0\text{V}$	$V_{\text{DS}} = 28\text{V}$	—	—	3	mA
$I_{\text{GSS}}$	$V_{\text{GS}} = 20\text{V}$	$V_{\text{DS}} = 0\text{V}$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

**DYNAMIC**

Symbol	Test Conditions				Value			Unit
					Min.	Typ.	Max.	
P <sub>L</sub>	f = 400MHz	V <sub>DD</sub> = 28V		I <sub>DQ</sub> = 50mA	30	—	—	W
G <sub>PS</sub>	f = 400MHz	V <sub>DD</sub> = 28V	P <sub>out</sub> = 30 W	I <sub>DQ</sub> = 50mA	10	11	—	dB
η <sub>D</sub>	f = 400MHz	V <sub>DD</sub> = 28V	P <sub>out</sub> = 30 W	I <sub>DQ</sub> = 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

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