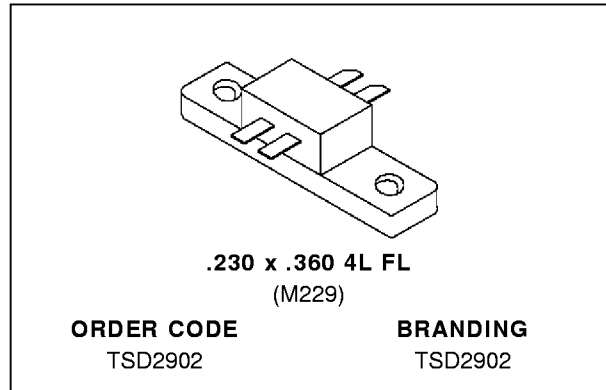


## RF & MICROWAVE TRANSISTORS HF/VHF/UHF N-CHANNEL MOSFETS

### PRODUCT DEVELOPMENT DATA SHEET

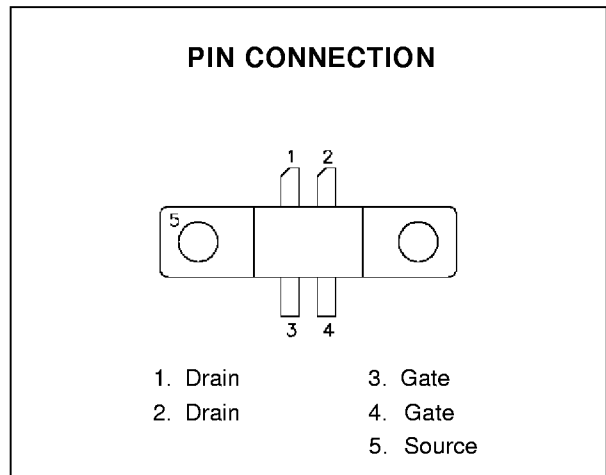
This data sheet contains the design criteria and target specifications for a product which is currently under development by SGS-THOMSON. The design criteria and specifications of this item could change prior to introduction and SGS-THOMSON assumes no liability for use of information contained herein.

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



### DESCRIPTION

The TSD2903 is a gold metallized N-channel MOS field effect RF power transistor. The TSD2903 is intended for use in 28V DC large signal applications up to 400 MHz.



### ABSOLUTE MAXIMUM RATINGS ( $T_{case} = 25^{\circ}C$ )

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	$^{\circ}C$
$T_{STG}$	Storage Temperature	- 65 to +150	$^{\circ}C$

### THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.6	$^{\circ}C/W$
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**ELECTRICAL SPECIFICATIONS** ( $T_{case} = 25^{\circ}C$ )

**STATIC**

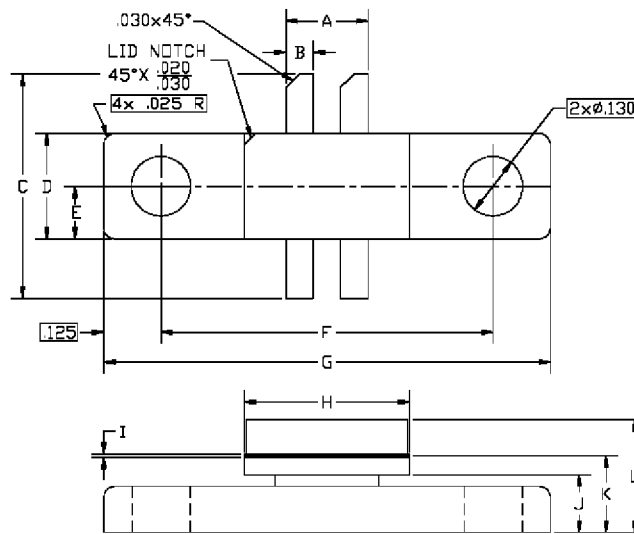
Symbol	Test Conditions		Value			Unit	
			Min.	Typ.	Max.		
$V_{(BR)DSS}$	$V_{GS} = 0V$	$I_{DS} = 5mA$	60	—	—	V	
$I_{DSS}$	$V_{GS} = 0V$	$V_{DS} = 28V$	—	—	1	mA	
$I_{GSS}$	$V_{GS} = 20V$	$V_{DS} = 0V$	—	—	1	$\mu A$	
$G_{FS}$	$V_{DS} = 10V$	$I_D = 1.25A$	0.5	—	—	mho	
$C_{ISS}$	$V_{GS} = 0V$	$V_{DS} = 28V$	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	$V_{DD} = 28V$	$I_{DQ} = 2x25mA$	30	—	—	W	
$G_{PS}$	f = 400MHz	$V_{DD} = 28V$	$P_{OUT} = 30W$	$I_{DQ} = 2x25mA$	14	15	—	dB
$\eta_D$	f = 400MHz	$V_{DD} = 28V$	$P_{OUT} = 30W$	$I_{DQ} = 25x2mA$	—	50	—	%

**PACKAGE MECHANICAL DATA**

Ref.: Dwg. No. 12-0229  
UDCS No. 1008194 rev B



SGS-THOMSON MICROELECTRONICS		CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		
A	.175/4.45	.185/4.70	K	.160/4.06
B	.055/1.40	.065/1.65	L	.230/5.84
C	.470/11.94	.510/12.95		
D	.225/5.72	.235/5.97		
E		.115/2.92		
F	.720/18.29	.730/18.54		
G	.970/24.64	.980/24.89		
H	.355/9.02	.365/9.27		
I	.004/0.10	.006/0.15		
J	.120/3.05	.130/3.30		

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