



# SD3932

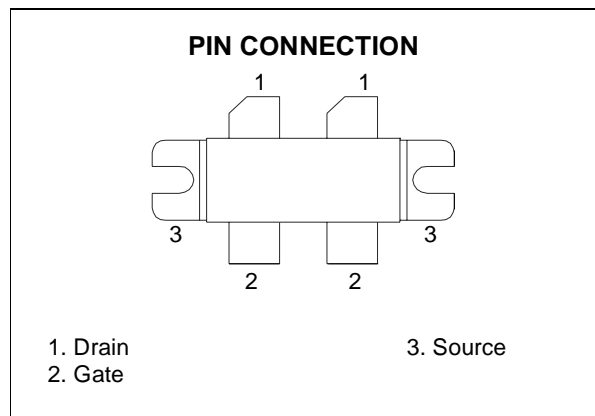
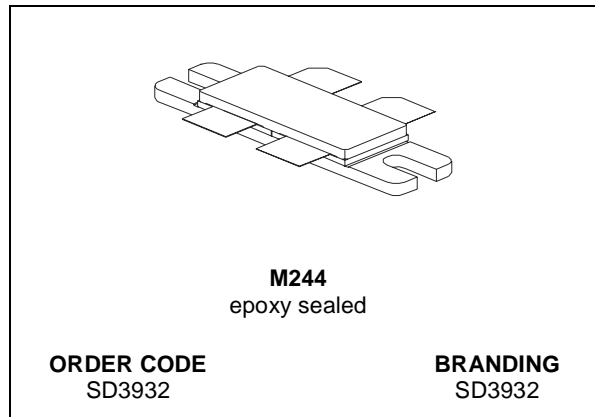
## RF POWER TRANSISTORS HF/VHF/UHF N-CHANNEL MOSFETs

### TARGET DATA

- GOLD METALLIZATION
- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- $P_{OUT} = 300 \text{ W MIN. WITH } 24 \text{ dB GAIN @ } 150 \text{ MHz}$

### DESCRIPTION

The SD3932 is a gold metallized N-Channel MOS field-effect RF power transistor. It is intended for use in 100 V dc large signal applications up to 150 MHz.



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

Symbol	Parameter	Value	Unit
$V_{(BR)DSS}$	Drain Source Voltage	250	V
$V_{DGR}$	Drain-Gate Voltage ( $R_{GS} = 1M\Omega$ )	250	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Drain Current	20	A
$P_{DISS}$	Power Dissipation	500	W
$T_j$	Max. Operating Junction Temperature	200	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature	-65 to +150	$^{\circ}\text{C}$

### THERMAL DATA

$R_{th(j-c)}$	Junction -Case Thermal Resistance	0.35	$^{\circ}\text{C/W}$
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ELECTRICAL SPECIFICATION ( $T_{CASE} = 25\text{ }^{\circ}\text{C}$ )

## STATIC (per section)

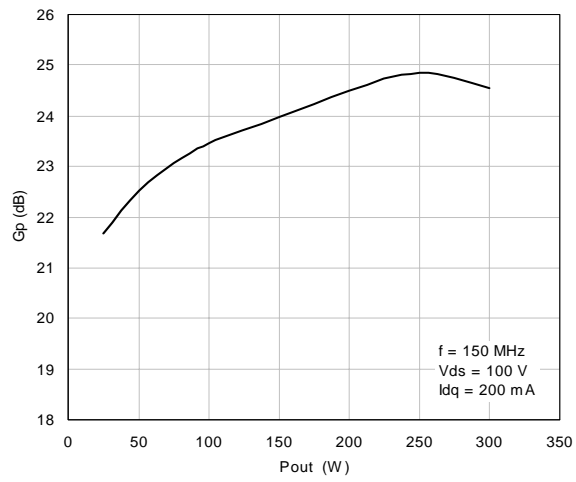
Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}$	$I_{DS} = 100\text{ mA}$		250			V
$I_{DSS}$	$V_{GS} = 0\text{ V}$	$V_{DS} = 100\text{ V}$				5	mA
$I_{GSS}$	$V_{GS} = 20\text{ V}$	$V_{DS} = 0\text{ V}$				5	$\mu\text{A}$
$V_{GS(Q)}$	$V_{DS} = 10\text{ V}$	$I_D = 250\text{ mA}$		1.5		4.0	V
$V_{DS(ON)}$	$V_{GS} = 10\text{ V}$	$I_D = 5\text{ A}$				5	V
$G_{FS}$	$V_{DS} = 10\text{ V}$	$I_D = 2.5\text{ A}$		3			mho
$C_{ISS}$	$V_{GS} = 0\text{ V}$	$V_{DS} = 100\text{ V}$	$f = 1\text{ MHz}$		649		pF
$C_{OSS}$	$V_{GS} = 0\text{ V}$	$V_{DS} = 100\text{ V}$	$f = 1\text{ MHz}$		134		pF
$C_{RSS}$	$V_{GS} = 0\text{ V}$	$V_{DS} = 100\text{ V}$	$f = 1\text{ MHz}$		6		pF

## DYNAMIC

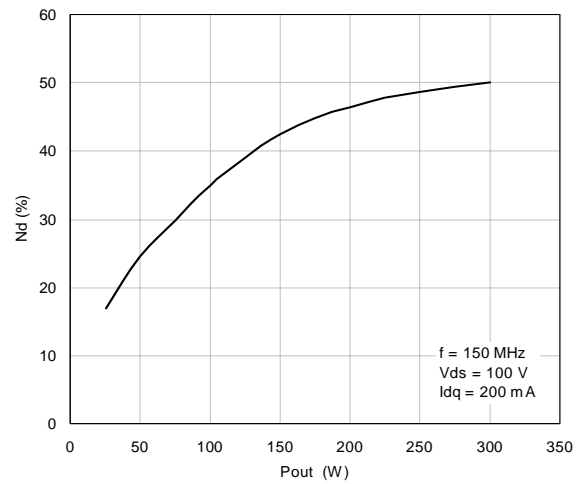
Symbol	Test Conditions				Min.	Typ.	Max.	Unit
$P_{OUT}$	$V_{DD} = 100\text{ V}$	$I_{DQ} = 200\text{ mA}$		$f = 150\text{ MHz}$	300			W
$G_{PS}$	$V_{DD} = 100\text{ V}$	$I_{DQ} = 200\text{ mA}$	$P_{OUT} = 300\text{ W}$	$f = 150\text{ MHz}$		24		dB
$\eta_D$	$V_{DD} = 100\text{ V}$	$I_{DQ} = 200\text{ mA}$	$P_{OUT} = 300\text{ W}$	$f = 150\text{ MHz}$		50		%
Load Mismatch	$V_{DD} = 100\text{ V}$	$I_{DQ} = 200\text{ mA}$	$P_{OUT} = 300\text{ W}$	$f = 150\text{ MHz}$ All Phase Angles	10:1			VSWR

## TYPICAL PERFORMANCE

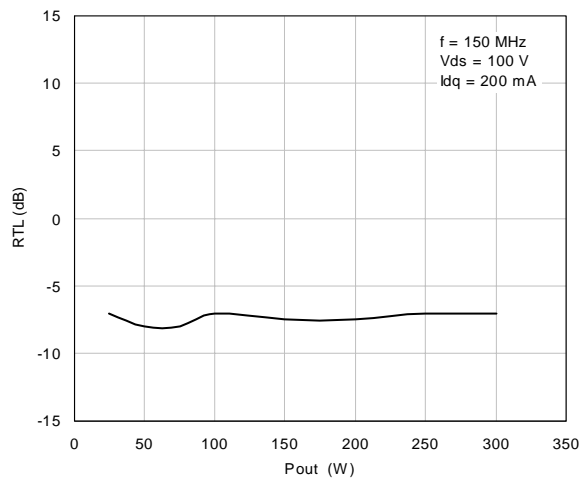
Power Gain Vs Output Power



Efficiency Vs Output Power

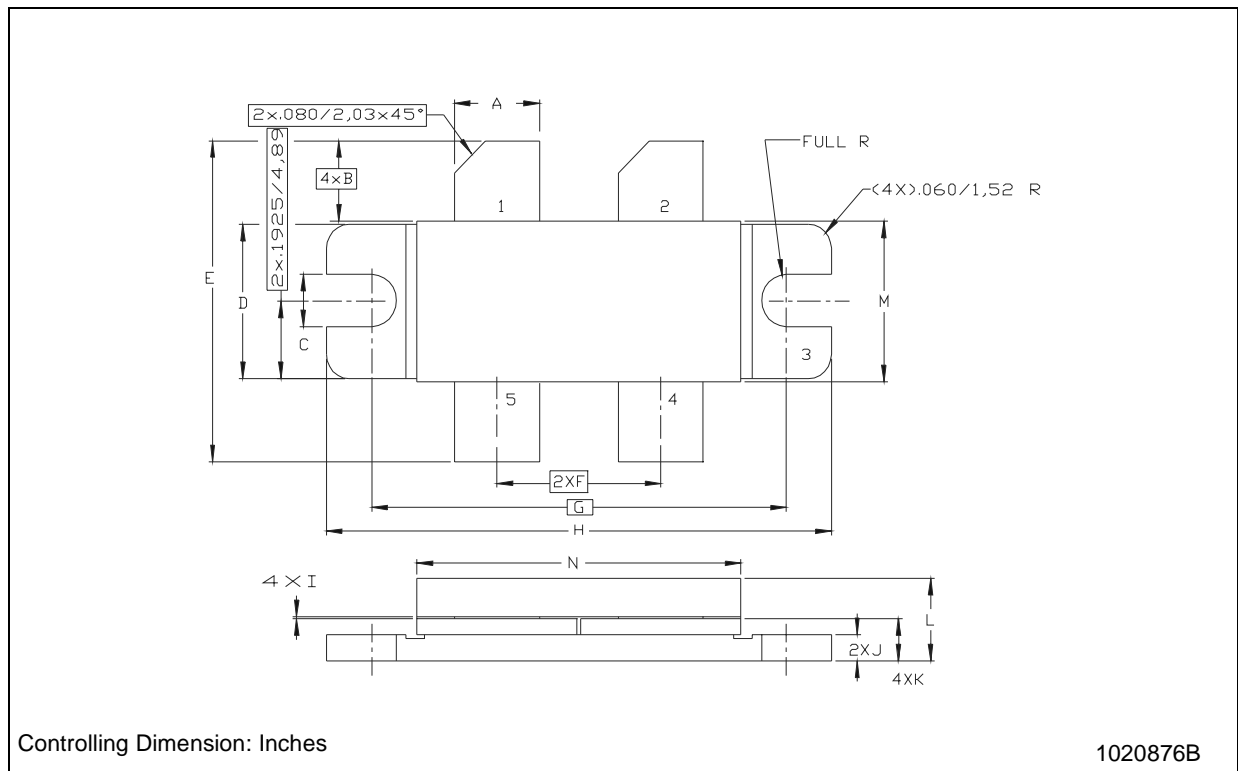


Input Return Loss Vs Output Power



M244 (.400 x .860 4/L BAL N/HERM W/FLG) MECHANICAL DATA

DIM.	mm			Inch		
	MIN.	TYP.	MAX	MIN.	TYP.	MAX
A	5.59		5.84	0.220		0.230
B		5.08			0.200	
C	3.02		3.28	0.119		0.129
D	9.65		9.91	0.380		0.390
E	19.81		20.82	0.780		0.820
F	10.92		11.18	0.430		0.440
G		27.94			1.100	
H	33.91		34.16	1.335		1.345
I	0.10		0.15	0.004		0.006
J	1.52		1.78	0.060		0.070
K	2.59		2.84	0.102		0.112
L	4.83		5.84	0.190		0.230
M	10.03		10.34	0.395		0.407
N	21.59		22.10	0.850		0.870



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