



## DB-960-60W

60W / 26V / 925-960 MHz PA using 1x PD57070S

The *LdmosST* FAMILY

PRELIMINARY DATA

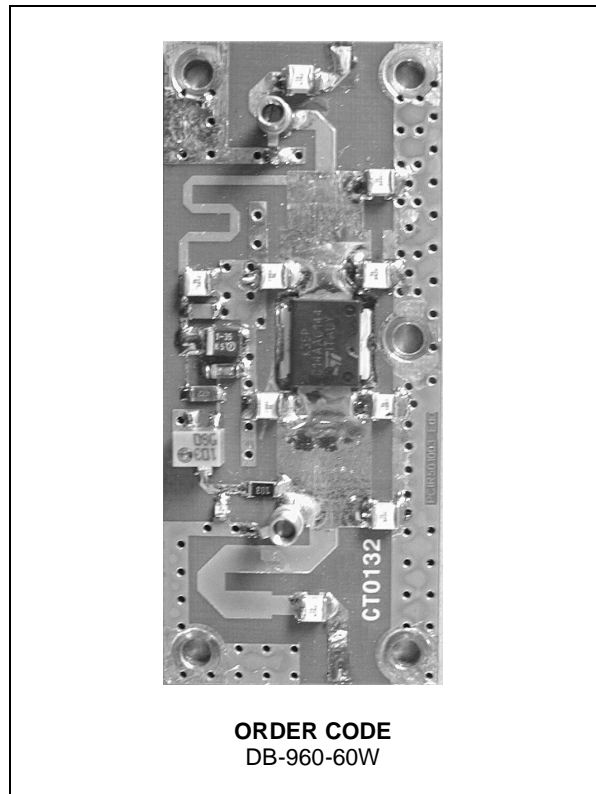
### N-CHANNEL ENHANCEMENT-MODE LATERAL MOSFETs

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- $P_{OUT} = 60$  W min. with 13 dB gain over 925 - 960 MHz
- 10:1 LOAD VSWR CAPABILITY
- BeO FREE AMPLIFIER.

### DESCRIPTION

The DB-960-60W is a common source N-Channel enhancement-mode lateral Field-Effect RF power amplifier designed for GSM / GPRS / EDGE base station applications.

The DB-960-60W is designed in cooperation with Européenne de Télécommunications S.A ([www.etsa.fr](http://www.etsa.fr)), for high gain and broadband performance operating in common source mode at 26 V, capable of withstanding load mismatch up to 10:1 all phases and with harmonics lower than 30 dBc.



ORDER CODE  
DB-960-60W

MECHANICAL SPECIFICATION

L=60 mm W=30 mm H=10 mm

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

Symbol	Parameter	Value	Unit
$V_{DD}$	Supply voltage	32	V
$I_D$	Drain Current	8	A
$P_{DISS}$	Power Dissipation	95	W
$T_{CASE}$	Operating Case Temperature	-20 to +85	$^{\circ}C$
$P_{amb}$	Max. Ambient Temperature	+55	$^{\circ}C$

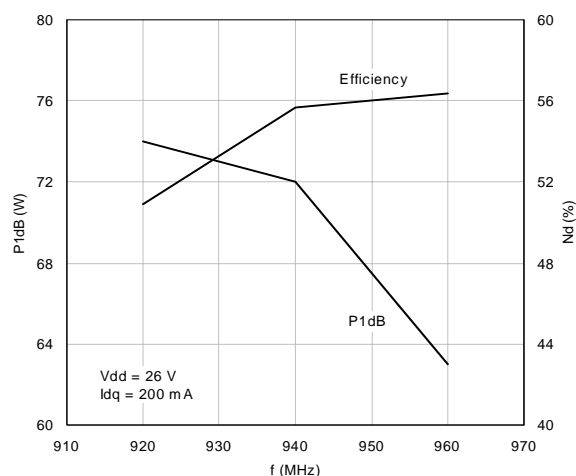
## DB-960-60W

### ELECTRICAL SPECIFICATION ( $T_{amb} = +25\text{ }^{\circ}\text{C}$ , $V_{dd} = 26\text{ V}$ , $I_{dq} = 200\text{ mA}$ )

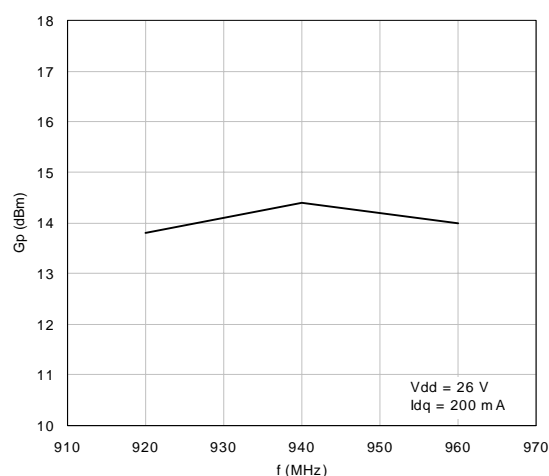
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
FREQ.	Frequency Range	925		960	MHz
Gain	$P_{OUT} = 60\text{ W}$	13	14		dB
$P_{1dB}$	Over frequency range: 925 - 960 MHz	60	65		W
Flatness	Over frequency range and @ $P_{OUT} = 60\text{ W}$			+/- 0.5	dB
Flatness	$P_{OUT}$ from 0.1 W to 60 W			1	dB
ND at $P_{1dB}$	$P_{1dB}$	45	52		%
IRTL	Input return Loss $P_{OUT}$ from 0.1 W to 60 W		-15	-10	dB
Harmonic	$P_{OUT} = 60\text{ W}$			-30	dBc
VSWR	Load Mismatch all phases @ $P_{OUT} = 60\text{ W}$	10:1			
Spurious	10:1 VSWR all phases and $P_{OUT}$ from 0.1 to 60 W			-76	dBc
IMD <sub>3</sub>	$P_{OUT} = 60\text{ WPEP}$			-25	dBc

### TYPICAL PERFORMANCE

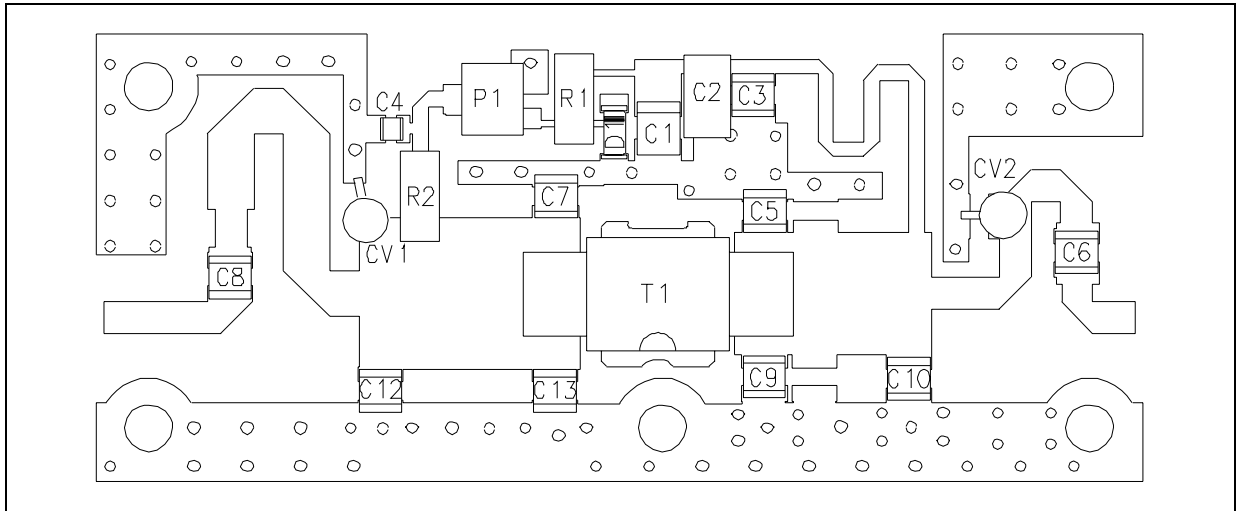
P1dB and Efficiency Vs Frequency



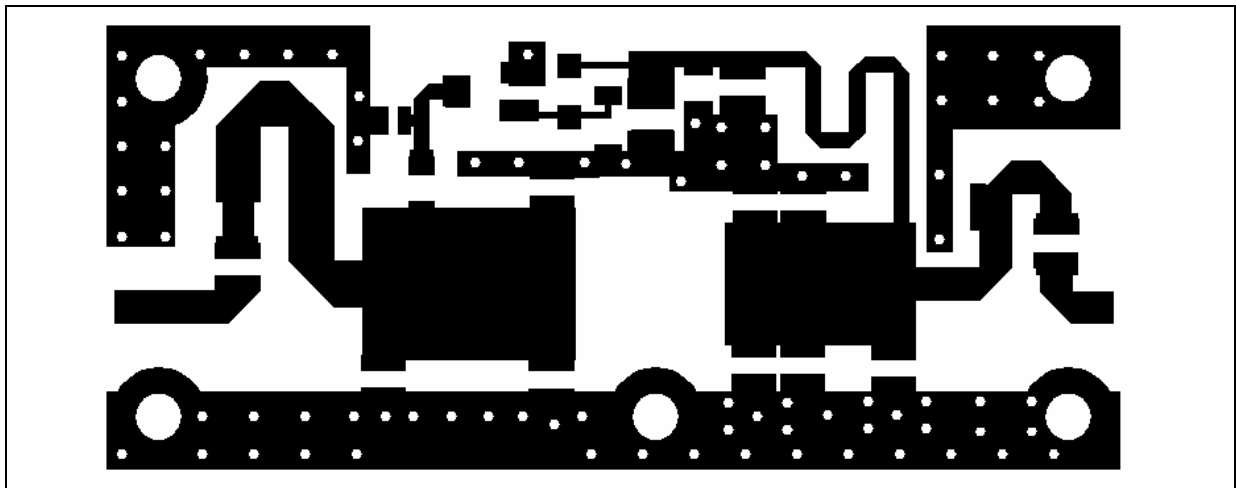
Power Gain Vs Frequency ( $P_{OUT} = 60\text{ W}$ )



## TEST FIXTURE COMPONENT LAYOUT



## TEST CIRCUIT PHOTOMASTER



## TEST CIRCUIT COMPONENT PART LIST

Ref.	Value	Ref. Manufacturer	Manufacturer
1	RF Power Amplifier Circuit	PCIR501003	ETSA
CV1, CV2	Trim capacitor HQ 0.6-4.5pF 500V	AT27273	TECK
C4	Chip Capacitor HQ 0603 100pF TA 5% 50V	500-CHA-101-JVLE	TEKELEC
C10, C12	Chip Capacitor HQ 3.3pF TB +/- 0,25pF 500V	501-CHB-3R3-CVLE	TEKELEC
C9	Chip Capacitor HQ 8,2pF TB +/- 0,25pF 500V	501-CHB-8R2-CVLE	TEKELEC
C5, C7, C13	Chip Capacitor HQ 10pF TB 5% 500V	501-CHB-100-JVLE	TEKELEC
C6, C8	Chip Capacitor HQ 47pF TB 5% 500V	501-CHB-470-JVLE	TEKELEC
C3	Chip Capacitor HQ 100pF TB 5% 500V	501-CHB-101-JVLE	TEKELEC
C2	Capacitor 1206 100nF 63V X7R 10%	VJ1206Y104KXAT/630	VISHAY
C1	Capacitor CMS tantale 1µF 20% 35V	293D105X9035B	Vishay-Sprague
R1	Resistor CMS 4,7K 1206 1/4W 5%	27597	BOURNS
R2	Resistor CMS 10K 1206 1/4W 5%	27605	BOURNS
P1	Trim resistor CMS cermet 3224W 10K	3224W-103	BOURNS
D1	Zener Diode 5.1V 500mW SOD80	BZV55C5V1	OMNITECH
T1	RF LDMOS Transistor 28V 70W 13dB GSM	PD57070S	STMicroélectronics

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