

# **LET21004**

## RF POWER TRANSISTORS

# Ldmos Enhanced Technology in Plastic Package

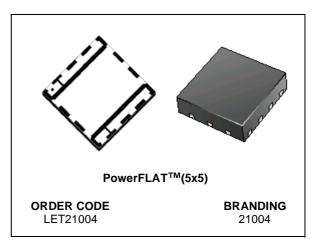
TARGET DATA

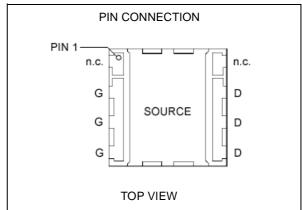
Designed for GSM / EDGE / IS-97 / WCDMA applications

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- P<sub>OUT</sub> = 4 W with 11 dB gain @ 2170 MHz / 26 V
- NEW LEADLESS PLASTIC PACKAGE
- ESD PROTECTION

#### **DESCRIPTION**

The LET21004 is a common source N-Channel, enhancement-mode lateral Field-Effect RF power transistor. It is designed for high gain, broad band commercial and industrial applications. It operates at 26 V in common source mode at frequencies up to 2.1 GHz. LET21004 boasts the excellent gain, linearity and reliability of ST's latest LDMOS technology mounted in the innovative leadless plastic package, PowerFLAT™. LET21004's superior linearity performance makes ideal solution for base station it an applications.





#### **ABSOLUTE MAXIMUM RATINGS** $(T_{CASE} = 25 \degree C)$

Symbol	Parameter	Value	Unit	
V <sub>(BR)DSS</sub>	Drain-Source Voltage	65	V	
V <sub>GS</sub>	Gate-Source Voltage	-0.5 to +15	V	
ID	Drain Current	1	Α	
P <sub>DISS</sub>	Power Dissipation (@ Tc = 70 °C)	TBD	W	
Tj	Max. Operating Junction Temperature 150		°C	
T <sub>STG</sub>	Storage Temperature	-65 to +150	°C	

#### **THERMAL DATA** $(T_{CASE} = 70 \, ^{\circ}C)$

	,	_	_
R <sub>th(j-c)</sub>	Junction -Case Thermal Resistance	TBD	°C/W

April, 15 2003

# **ELECTRICAL SPECIFICATION** (T<sub>CASE</sub> = 25 °C)

### **STATIC**

Symbol	Test Conditions				Тур.	Max.	Unit
V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0 V	$I_{DS} = 1 \text{ mA}$		65			V
I <sub>DSS</sub>	V <sub>GS</sub> = 0 V	V <sub>DS</sub> = 26 V				1	μΑ
I <sub>GSS</sub>	V <sub>GS</sub> = 5 V	V <sub>DS</sub> = 0 V				1	μΑ
V <sub>GS(Q)</sub>	V <sub>DS</sub> = 28 V	$I_D = TBD$		2.5		5.0	V
V <sub>DS(ON)</sub>	V <sub>GS</sub> = 10 V	I <sub>D</sub> = 0.3 A			TBD	0.3	V
G <sub>FS</sub>	V <sub>DS</sub> = 10 V	I <sub>D</sub> = 0.3 A			TBD		mho
C <sub>ISS</sub>	V <sub>GS</sub> = 0 V	V <sub>DS</sub> = 26 V	f = 1 MHz		TBD		pF
Coss	V <sub>GS</sub> = 0 V	V <sub>DS</sub> = 26 V	f = 1 MHz		TBD		pF
C <sub>RSS</sub>	V <sub>GS</sub> = 0 V	V <sub>DS</sub> = 26 V	f = 1 MHz		TBD		pF

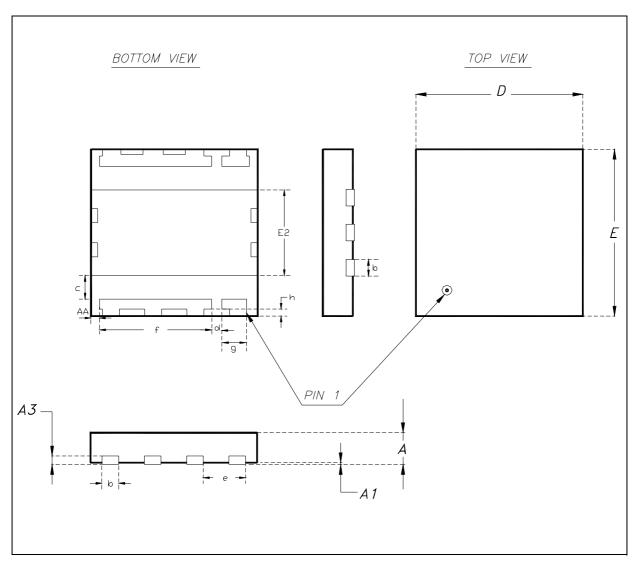
Symbol	Test Conditions	Min.	Тур.	Max.	Unit
DYNAMIC (f	= 2170 MHz)				
P <sub>out</sub> <sup>(1)</sup>	$V_{DD} = 26 \text{ V}$ $I_{DQ} = TBD$	4	5		W
η <sub>D</sub> <sup>(1)</sup>	$V_{DD} = 26 \text{ V}$ $I_{DQ} = TBD$	45	50		%
Load mismatch	$V_{DD}$ = 26 V $I_{DQ}$ = TBD $P_{OUT}$ = 4 W ALL PHASE ANGLES			10:1	VSWR
DYNAMIC (f	= 2110 - 2170 MHz)				
P <sub>out</sub> <sup>(1)</sup>	$V_{DD} = 26 \text{ V}$ $I_{DQ} = TBD$	3	4		W
η <sub>D</sub> <sup>(1)</sup>	$V_{DD} = 26 \text{ V}$ $I_{DQ} = TBD$	40	45		%
G <sub>P</sub>	V <sub>DD</sub> = 26 V I <sub>DQ</sub> = TBD P <sub>OUT</sub> = 4 W	11	13		dB
Pout(w-cdma)	ACPR: -45dBc		1		W
ηD(W-CDMA)	ACPR: -45dBc		25		%

<sup>(1) 1</sup> dB Compression point

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## **PowerFLAT™ MECHANICAL DATA**

DIM.	mm			Inch			
DINI.	MIN.	TYP.	MAX	MIN.	TYP.	MAX	
Α		0.90	1.00		0.035	0.039	
A1		0.02	0.05		0.001	0.002	
А3		0.24			0.009		
AA	0.15	0.25	0.35	0.006	0.01	0.014	
b	0.43	0.51	0.58	0.017	0.020	0.023	
С	0.64	0.71	0.79	0.025	0.028	0.031	
D		5.00			0.197		
d		0.30			0.011		
E		5.00			0.197		
E2	2.49	2.57	2.64	0.098	0.101	0.104	
е		1.27			0.050		
f		3.37			0.132		
g		0.74			0.03		
h		0.21			0.008		



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