



# LET21004

## RF POWER TRANSISTORS

### *Ldmos Enhanced Technology in Plastic Package*

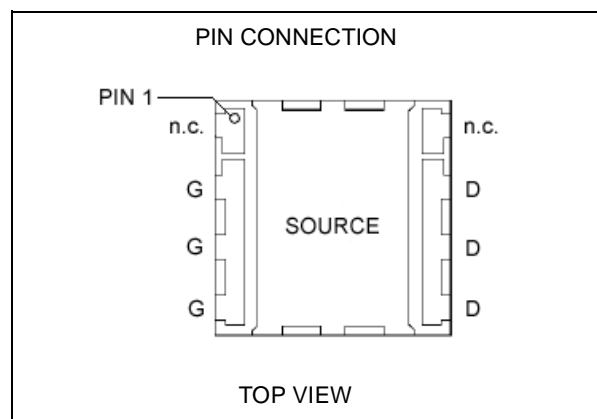
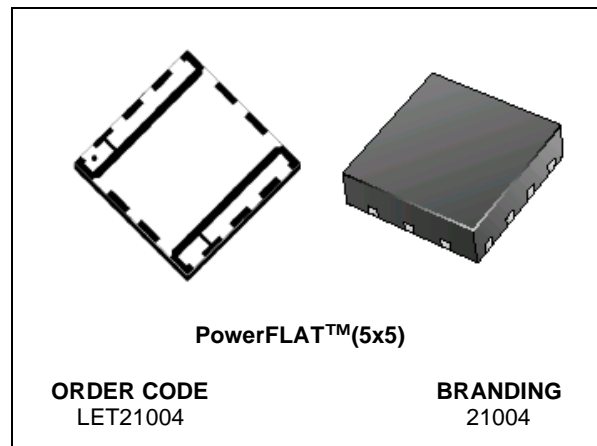
TARGET DATA

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

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- $P_{OUT} = 4\text{ W}$  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 SMD plastic package, PowerFLAT™. LET21004's superior linearity performance makes it an ideal solution for base station applications.



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

Symbol	Parameter	Value	Unit
$V_{(BR)DSS}$	Drain-Source Voltage	65	V
$V_{GS}$	Gate-Source Voltage	-0.5 to +15	V
$I_D$	Drain Current	1	A
$P_{DISS}$	Power Dissipation (@ $T_c = 70\text{ }^{\circ}\text{C}$ )	TBD	W
$T_j$	Max. Operating Junction Temperature	150	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature	-65 to +150	$^{\circ}\text{C}$

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

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

**STATIC**

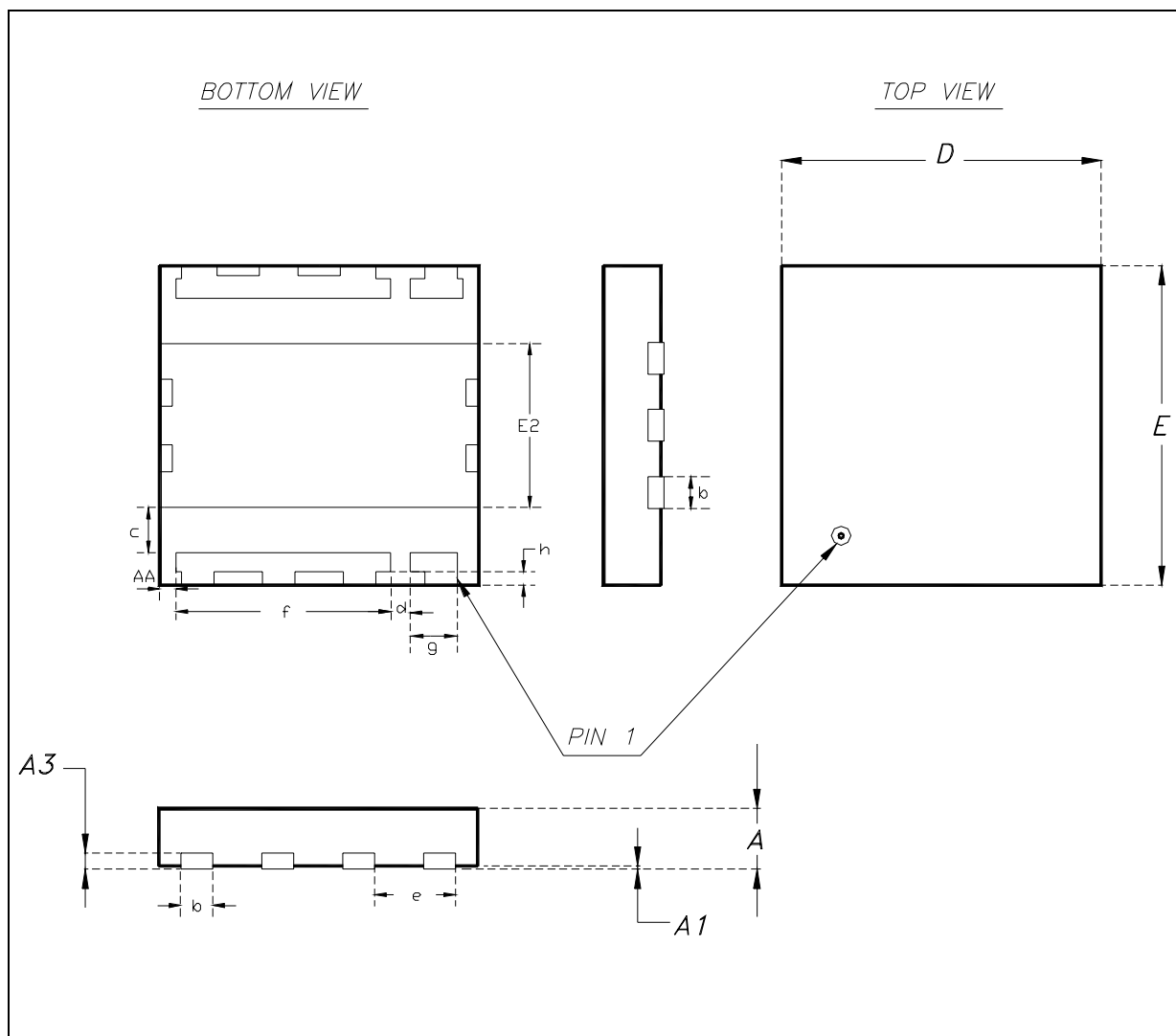
Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}$	$I_{DS} = 1\text{ mA}$	65			V
$I_{DSS}$	$V_{GS} = 0\text{ V}$	$V_{DS} = 26\text{ V}$			1	$\mu\text{A}$
$I_{GSS}$	$V_{GS} = 5\text{ V}$	$V_{DS} = 0\text{ V}$			1	$\mu\text{A}$
$V_{GS(Q)}$	$V_{DS} = 28\text{ V}$	$I_D = \text{TBD}$	2.5		5.0	V
$V_{DS(ON)}$	$V_{GS} = 10\text{ V}$	$I_D = 0.3\text{ A}$		TBD	0.3	V
$G_{FS}$	$V_{DS} = 10\text{ V}$	$I_D = 0.3\text{ A}$		TBD		mho
$C_{ISS}$	$V_{GS} = 0\text{ V}$	$V_{DS} = 26\text{ V}$		TBD		pF
$C_{OSS}$	$V_{GS} = 0\text{ V}$	$V_{DS} = 26\text{ V}$		TBD		pF
$C_{RSS}$	$V_{GS} = 0\text{ V}$	$V_{DS} = 26\text{ V}$		TBD		pF

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
<b>DYNAMIC</b> ( $f = 2170\text{ MHz}$ )						
$P_{out}^{(1)}$	$V_{DD} = 26\text{ V}$	$I_{DQ} = \text{TBD}$	4	5		W
$\eta_D^{(1)}$	$V_{DD} = 26\text{ V}$	$I_{DQ} = \text{TBD}$	45	50		%
Load mismatch	$V_{DD} = 26\text{ V}$	$I_{DQ} = \text{TBD}$			10:1	VSWR
<b>DYNAMIC</b> ( $f = 2110 - 2170\text{ MHz}$ )						
$P_{out}^{(1)}$	$V_{DD} = 26\text{ V}$	$I_{DQ} = \text{TBD}$	3	4		W
$\eta_D^{(1)}$	$V_{DD} = 26\text{ V}$	$I_{DQ} = \text{TBD}$	40	45		%
$G_P$	$V_{DD} = 26\text{ V}$	$I_{DQ} = \text{TBD}$	11	13		dB
$P_{OUT(W-CDMA)}$	ACPR: -45dBc			1		W
$\eta_{D(W-CDMA)}$	ACPR: -45dBc			25		%

(1) 1 dB Compression point

**PowerFLAT™ MECHANICAL DATA**

DIM.	mm			Inch		
	MIN.	TYP.	MAX	MIN.	TYP.	MAX
A		0.90	1.00		0.035	0.039
A1		0.02	0.05		0.001	0.002
A3		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
c	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
e		1.27			0.050	
f		3.37			0.132	
g		0.74			0.03	
h		0.21			0.008	



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