LET21004

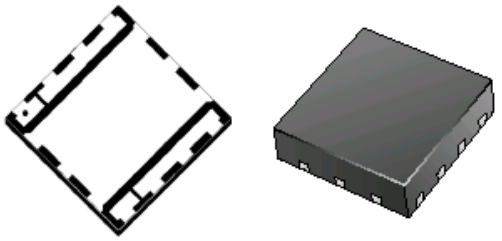
RF POWER TRANSISTORS

Ldmos Enhanced Technology in Plastic Package

TARGET DATA

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

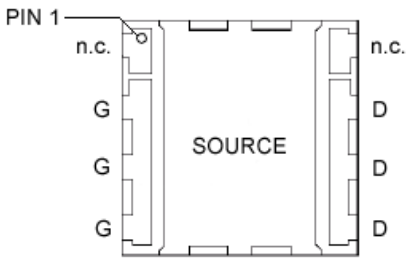
- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION
- P_{OUT} = 4 W with 11 dB gain @ 2170 MHz / 26 V
- NEW LEADLESS PLASTIC PACKAGE
- ESD PROTECTION



PowerFLAT™(5x5)

ORDER CODE	BRANDING
LET21004	21004

PIN CONNECTION



TOP VIEW

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 °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 (@ Tc = 70 °C)	TBD	W
Tj	Max. Operating Junction Temperature	150	°C
T_{STG}	Storage Temperature	-65 to +150	°C

THERMAL DATA (T_{CASE} = 70 °C)

$R_{th(j-c)}$	Junction -Case Thermal Resistance	TBD	°C/W

ELECTRICAL SPECIFICATION (T_{CASE} = 25 °C)

STATIC

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

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
DYNAMIC (*f = 2170 MHz*)					
P_{out}(1)	V_{DD} = 26 V I_{DQ} = TBD	4	5		W
η_D(1)	V_{DD} = 26 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_{out}(1)	V_{DD} = 26 V I_{DQ} = TBD	3	4		W
η_D(1)	V_{DD} = 26 V I_{DQ} = TBD	40	45		%
G_P	V_{DD} = 26 V I_{DQ} = TBD P_{OUT} = 4 W	11	13		dB
$P_{OUT(W\text{-}CDMA)}$	ACPR: -45dBc		1		W
$\eta_{D(W\text{-}CDMA)}$	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