LET8180

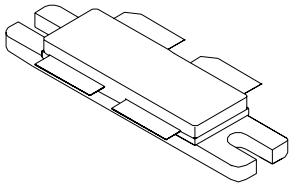
RF POWER TRANSISTORS

Ldmos Enhanced Technology

TARGET DATA

N-CHANNEL ENHANCEMENT-MODE LATERAL MOSFETs

- EXCELLENT THERMAL STABILITY
- COMMON SOURCE CONFIGURATION, PUSH-PULL
- P_{OUT} = 220 W with 17 dB TYP. gain @ 860 MHz
- BeO FREE PACKAGE
- INTERNAL INPUT MATCHING
- ESD PROTECTION



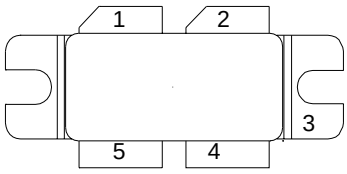
M252
epoxy sealed

ORDER CODE	BRANDING
LET8180	LET8180

DESCRIPTION

The LET8180 is a common source N-Channel enhancement-mode lateral Field-Effect RF power transistor designed for broadband commercial and industrial applications at frequencies up to 1.0 GHz. The LET8180 is designed for high gain and broadband performance operating in common source mode at 32 V. Its internal matching makes it ideal for base station applications requiring high linearity.

PIN CONNECTION



1. Drain
2. Drain
3. Source
4. Gate
5. Gate

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	18	A
P_{DISS}	Power Dissipation (@ Tc =+70 °C)	289	W
Tj	Max. Operating Junction Temperature	200	°C
T_{STG}	Storage Temperature	-65 to +150	°C

THERMAL DATA

$R_{th(j-c)}$	Junction -Case Thermal Resistance	0.45	°C/W

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

STATIC (Per Section)

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$V_{(BR)DSS}$	V_{GS} = 0 V	I_D = 10 µA		65			V
I_{DSS}	V_{GS} = 0 V	V_{DS} = 32 V				10	µA
I_{GSS}	V_{GS} = 5 V	V_{DS} = 0 V				1	µA
$V_{GS(Q)}$	V_{DS} = 32 V	I_D = TBD		2.5		4.5	V
$V_{DS(ON)}$	V_{GS} = 10 V	I_D = 3 A			0.28	0.45	V
G_{FS}	V_{DS} = 10 V	I_D = 3 A			2.6		mho
C_{ISS}*	V_{GS} = 0 V	V_{DS} = 32 V	f = 1 MHz		TBD		pF
C_{OSS}	V_{GS} = 0 V	V_{DS} = 32 V	f = 1 MHz			70	pF
C_{RSS}	V_{GS} = 0 V	V_{DS} = 32 V	f = 1 MHz		2.5		pF

* Includes Internal Input Moscap.

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
DYNAMIC (*f = 860 MHz*)					
P_{OUT}(1)	V_{DD} = 32 V I_{DQ} = TBD	200	220		W
η_D(1)	V_{DD} = 32 V I_{DQ} = TBD	50	60		%
G_P(2)	V_{DD} = 32 V I_{DQ} = TBD P_{OUT} = 200 W PEP	16	17		dB
IMD3(2)	V_{DD} = 32 V I_{DQ} = TBD P_{OUT} = 200 W PEP		-31		dBc
Load mismatch	V_{DD} = 32 V I_{DQ} = TBD P_{OUT} = 200 W ALL PHASE ANGLES	10:1			VSWR
DYNAMIC (*f = 470 - 860 MHz*)					
P_{OUT}(1)	V_{DD} = 32 V I_{DQ} = TBD	180			W
η_D(1)	V_{DD} = 32 V I_{DQ} = TBD	50			%
G_P(1)	V_{DD} = 32 V I_{DQ} = TBD	14.5			dB

(1) 1 dB Compression point

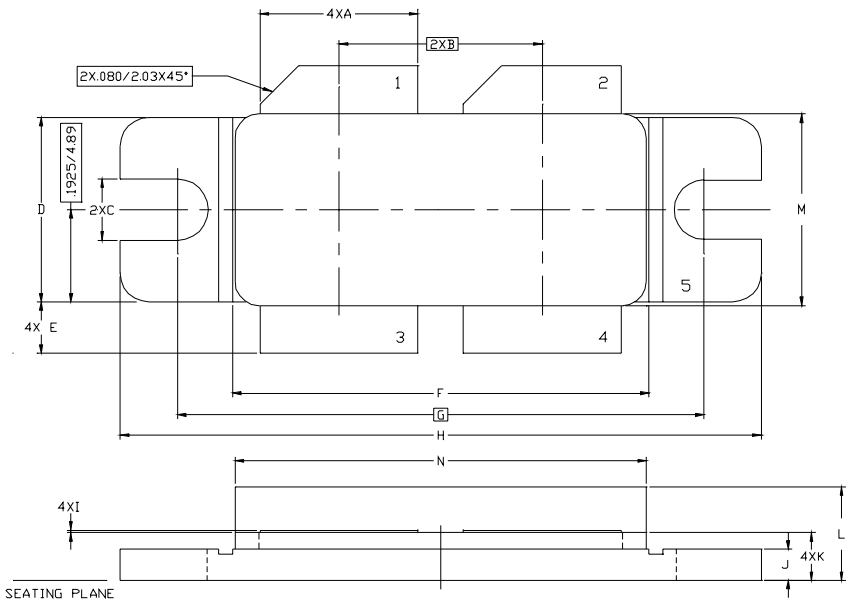
(2) f1 = 860 MHz, f2 = 860.1 MHz

ESD PROTECTION CHARACTERISTICS

Test Conditions	Class
Human Body Model	2
Machine Model	M3

M252 (.400 x .860 4L BAL N/HERM W/FLG) MECHANICAL DATA

DIM.	mm			Inch		
	MIN.	TYP.	MAX	MIN.	TYP.	MAX
A	8.13		8.64	.320		.340
B		10.80			.425	
C	3.00		3.30	.118		.130
D	9.65		9.91	.380		.390
E	2.16		2.92	.085		.115
F	21.97		22.23	.865		.875
G		27.94			1.100	
H	33.91		34.16	1.335		1.345
I	0.10		0.15	.004		.006
J	1.52		1.78	.060		.070
K	2.36		2.74	.093		.108
L	4.57		5.33	.180		.210
M	9.96		10.34	.392		.407
N	21.64		22.05	.852		.868



Controlling dimension: Inches

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