



# LET19060C

## RF POWER TRANSISTORS

### *Ldmos Enhanced Technology*

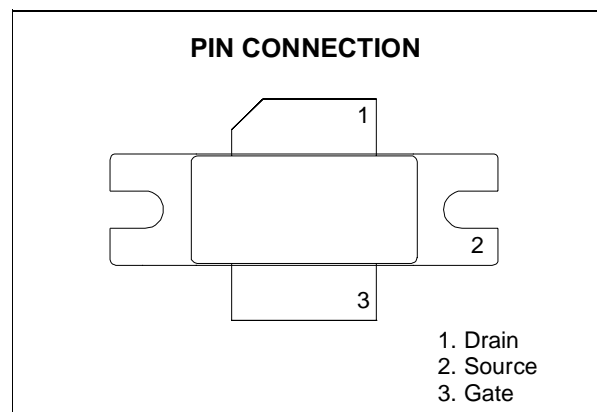
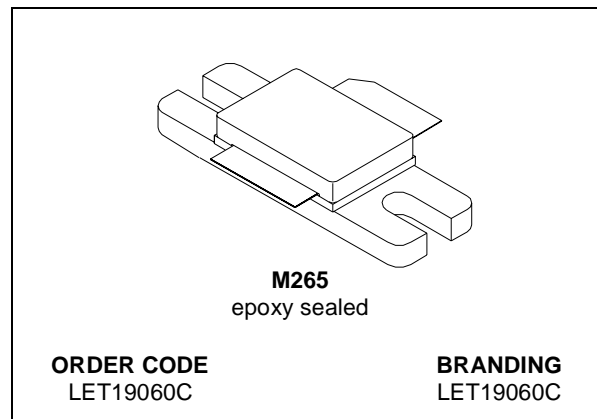
#### TARGET DATA

#### N-CHANNEL ENHANCEMENT-MODE LATERAL MOSFETs

- IS-97 CDMA PERFORMANCES  
 $P_{OUT} = 7.5 \text{ W}$   
EFF. = 18 %
- EDGE PERFORMANCES  
 $P_{OUT} = 30 \text{ W}$   
EFF. = 25 %
- GSM PERFORMANCES  
 $P_{OUT} = 65 \text{ W}$   
EFF. = 45 %
- EXCELLENT THERMAL STABILITY
- BeO FREE PACKAGE
- INTERNAL INPUT/OUTPUT MATCHING
- ESD PROTECTION

#### DESCRIPTION

The LET19060C 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 LET19060C is designed for high gain and broadband performance operating in common source mode at 26 V. Its internal matching makes it ideal for base station applications requiring high linearity.



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

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	7	A
$P_{DISS}$	Power Dissipation (@ $T_c = 70^{\circ}\text{C}$ )	130	W
$T_j$	Max. Operating Junction Temperature	200	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature	-65 to +150	$^{\circ}\text{C}$

#### THERMAL DATA

$R_{th(j-c)}$	Junction -Case Thermal Resistance	1.0	$^{\circ}\text{C/W}$
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**LET19060C****ELECTRICAL SPECIFICATION** ( $T_{CASE} = 25^{\circ}C$ )**STATIC** (Per Section)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}$ $I_D = 10\text{ }\mu\text{A}$	65			V
$I_{DSS}$	$V_{GS} = 0\text{ V}$ $V_{DS} = 26\text{ V}$			6	$\mu\text{A}$
$I_{GSS}$	$V_{GS} = 5\text{ V}$ $V_{DS} = 0\text{ V}$			1	$\mu\text{A}$
$V_{GS(Q)}$	$V_{DS} = 26\text{ V}$ $I_D = \text{TBD}$	2.5		4.5	V
$V_{DS(ON)}$	$V_{GS} = 10\text{ V}$ $I_D = 2\text{ A}$		0.27		V
$G_{FS}$	$V_{DS} = 10\text{ V}$ $I_D = 2\text{ A}$		4.7		mho
$C_{ISS}^*$	$V_{GS} = 0\text{ V}$ $V_{DS} = 26\text{ V}$ $f = 1\text{ MHz}$		TBD		pF
$C_{OSS}^*$	$V_{GS} = 0\text{ V}$ $V_{DS} = 26\text{ V}$ $f = 1\text{ MHz}$		TBD		pF
$C_{RSS}$	$V_{GS} = 0\text{ V}$ $V_{DS} = 26\text{ V}$ $f = 1\text{ MHz}$		TBD		pF

\* Includes Internal Matching

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
<b>DYNAMIC</b> ( $f = 2000\text{ MHz}$ )					
$P_{1dB}$	$V_{DD} = 26\text{ V}$ $I_{DQ} = \text{TBD}$	70	75		W
$\eta_D^{(1)}$	$V_{DD} = 26\text{ V}$ $I_{DQ} = \text{TBD}$	45	50		%
Load mismatch	$V_{DD} = 26\text{ V}$ $I_{DQ} = \text{TBD}$ $P_{OUT} = 60\text{ W}$ ALL PHASE ANGLES			10:1	VSWR
<b>DYNAMIC</b> ( $f = 1930 - 1990\text{ MHz}$ )					
$P_{1dB}$	$V_{DD} = 26\text{ V}$ $I_{DQ} = \text{TBD}$	60	65		W
$G_P$	$V_{DD} = 26\text{ V}$ $I_{DQ} = \text{TBD}$ $P_{OUT} = 60\text{ W}$	11	13		dB
$\eta_D^{(1)}$	$V_{DD} = 26\text{ V}$ $I_{DQ} = \text{TBD}$	40	45		%
$P_{OUT(CDMA)}^{(2)}$	885 KHz < -47 dBc 1.25 MHz < -55 dBc 2.25 MHz < -55 dBc		7.5		W
$\eta_{D(CDMA)}^{(2)}$	885 KHz < -47 dBc 1.25 MHz < -55 dBc 2.25 MHz < -55 dBc		18		%
<b>DYNAMIC</b> ( $f = 1805 - 1880\text{ MHz}$ )					
$P_{1dB}$	$V_{DD} = 26\text{ V}$ $I_{DQ} = \text{TBD}$	60	65		W
$G_P$	$V_{DD} = 26\text{ V}$ $I_{DQ} = \text{TBD}$ $P_{OUT} = 60\text{ W}$	11	13		dB
$\eta_D^{(1)}$	$V_{DD} = 26\text{ V}$ $I_{DQ} = \text{TBD}$	45			%
$P_{OUT(EDGE)}$	400 KHz < -60 dBc 600 KHz < -70 dBc $EVM < 3\%$		30		W
$\eta_{D(EDGE)}$	400 KHz < -60 dBc 600 KHz < -70 dBc $EVM < 3\%$		25		%

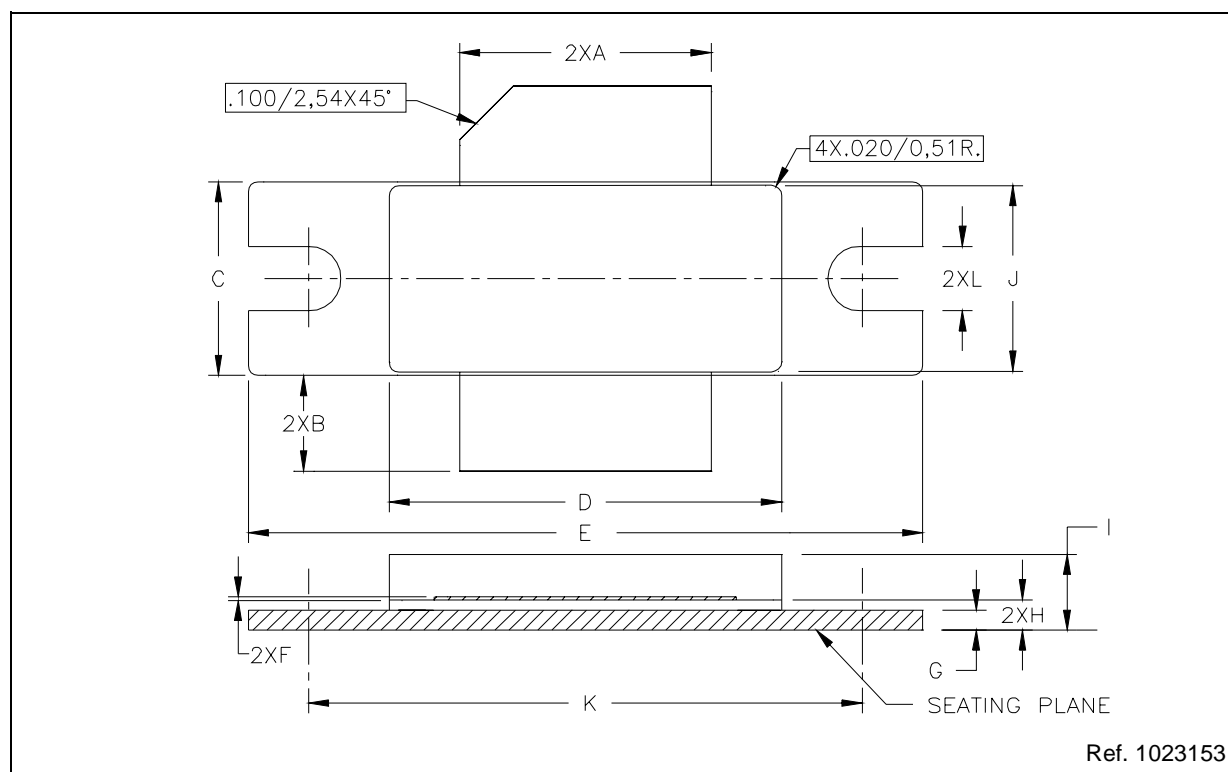
(1) 1 dB Compression point (2) IS-97 CDMA Pilot, Sync, Paging, Traffic, Codes 8 Thru 13

**ESD PROTECTION CHARACTERISTICS**

Test Conditions	Class
Human Body Model	2
Machine Model	M3

**M265 (.370 x .780 WIDE 2/L N/HERM W/FLG) MECHANICAL DATA**

DIM.	mm			Inch		
	MIN.	TYP.	MAX	MIN.	TYP.	MAX
A	12.57		12.83	.495		.505
B	4.32		5.33	.170		.210
C	9.65		9.91	.380		.390
D	19.61		20.02	.772		.788
E	33.91		34.16	1.335		1.345
F	0.08		0.15	.003		.006
G	0.89		1.14	.035		.045
H	1.45		1.70	.057		.067
I	3.18		4.32	.125		.170
J	9.27		9.53	.365		.375
K	27.69		28.19	1.090		1.110
L	3.00		3.51	.118		.138



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