



LET9085

RF POWER TRANSISTORS *Ldmos Enhanced Technology*

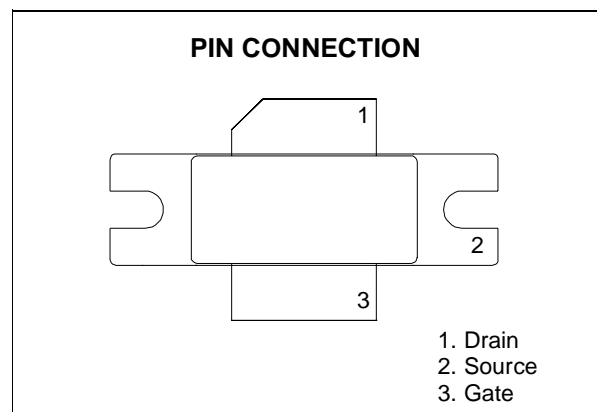
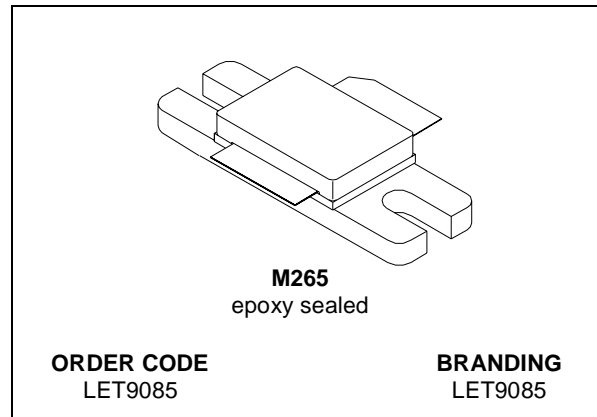
TARGET DATA

N-CHANNEL ENHANCEMENT-MODE LATERAL MOSFETs

- IS-95 CDMA PERFORMANCES
 $P_{OUT} = 20\text{ W}$
EFF. = 28 %
- EDGE PERFORMANCES
 $P_{OUT} = 35\text{ W}$
EFF. = 35 %
- GSM PERFORMANCES
 $P_{OUT} = 75\text{ W}$
EFF. = 55 %
- EXCELLENT THERMAL STABILITY
- BeO FREE PACKAGE
- INTERNAL INPUT MATCHING
- ESD PROTECTION

DESCRIPTION

The LET9085 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 LET9085 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 ($T_{CASE} = 25\text{ }^{\circ}\text{C}$)

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	12	A
P_{DISS}	Power Dissipation (@ $T_c = 70\text{ }^{\circ}\text{C}$)	186	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	0.7	$^{\circ}\text{C/W}$
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LET9085

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} = 26 V			1	μA
I _{DSS}	V _{GS} = 0 V V _{DS} = 65 V			10	μA
I _{GSS}	V _{GS} = 5 V V _{DS} = 0 V			1	μA
V _{GS(Q)}	V _{DS} = 26 V I _D = TBD		TBD		V
V _{DS(ON)}	V _{GS} = 10 V I _D = 2 A		0.19	0.4	V
G _{FS}	V _{DS} = 10 V I _D = 6 A		8		mho
C _{ISS} *	V _{GS} = 0 V V _{DS} = 28 V f = 1 MHz		TBD		pF
C _{OSS}	V _{GS} = 0 V V _{DS} = 28 V f = 1 MHz			75	pF
C _{RSS}	V _{GS} = 0 V V _{DS} = 28 V f = 1 MHz		2.9		pF

* Includes Internal Input Moscap.

DYNAMIC (f = 865 - 895 MHz)

Symbol	Test Conditions	Min.	Typ.	Max.	Unit
P _{1dB}	V _{DD} = 26 V I _{DQ} = TBD	90	105		W
η _D	V _{DD} = 26 V I _{DQ} = TBD P _{OUT} = 90 W	50	55		%
G _P	V _{DD} = 26 V I _{DQ} = TBD P _{OUT} = 90 W PEP	17			dB
IMD ₃	V _{DD} = 26 V I _{DQ} = TBD P _{OUT} = 90 W PEP		-31	-28	dBc
Load mismatch	V _{DD} = 26 V I _{DQ} = TBD P _{OUT} = 90 W ALL PHASE ANGLES			10:1	VSWR
P _{OUT(CDMA)} ⁽¹⁾	750 KHz ACPR: -45dBc 1.98 MHz ACPR: -60dBc		20		W
η _{D(CDMA)} ⁽¹⁾	750 KHz ACPR: -45dBc 1.98 MHz ACPR: -60dBc		28		%

(1) IS-95 CDMA Pilot, Sync, Paging, Traffic, Codes 8 Thru 13

DYNAMIC (f = 920 - 960 MHz)

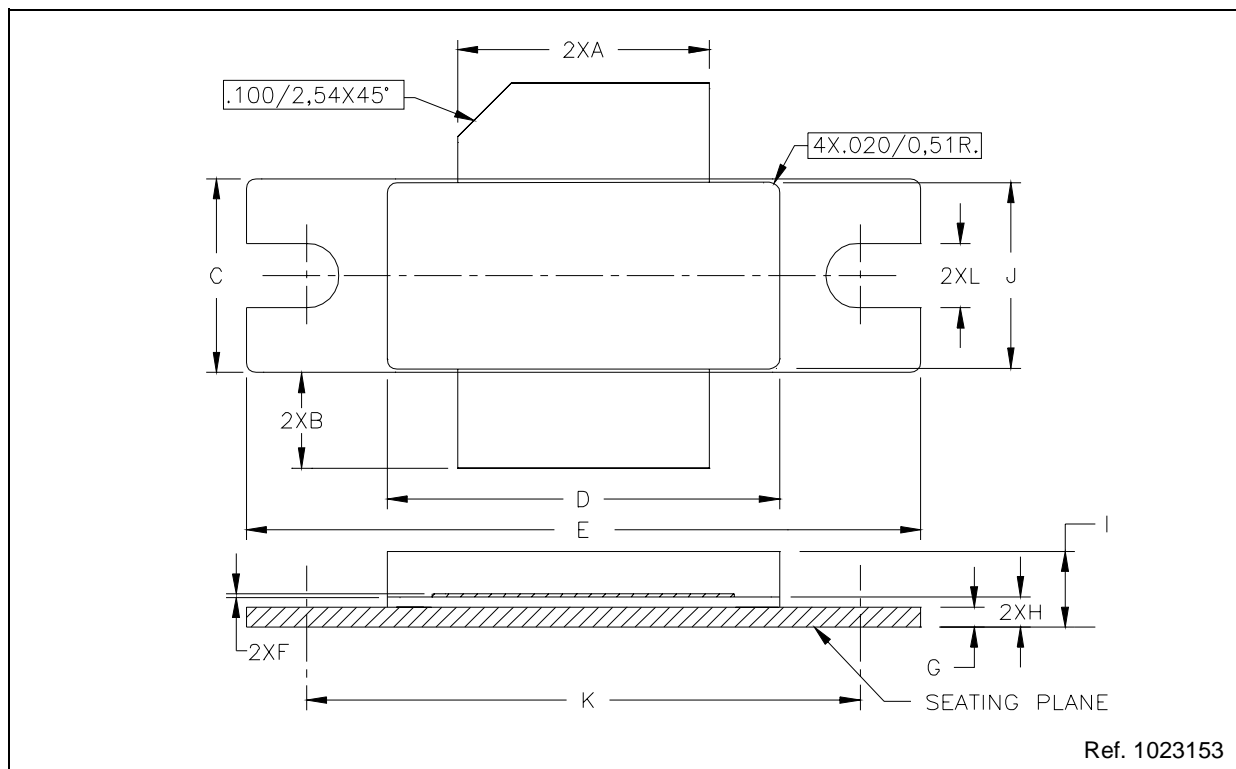
P _{1dB}	V _{DD} = 26 V I _{DQ} = TBD	70	75		W
G _P	V _{DD} = 26 V I _{DQ} = TBD P _{OUT} = 70 W	15	16		dB
η _D	V _{DD} = 26 V I _{DQ} = TBD P _{OUT} = 70 W	50	55		%
Load mismatch	V _{DD} = 26 V I _{DQ} = TBD P _{OUT} = 85 W ALL PHASE ANGLES			10:1	VSWR
P _{OUT(EDGE)}	400 KHz < -60 dBc 600 KHz < -70 dBc EVM < 3 %		35		W
η _{D(EDGE)}	400 KHz < -60 dBc 600 KHz < -70 dBc EVM < 3 %		35		%

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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