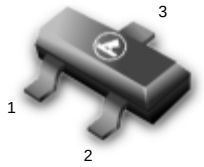
30V P-Channel Enhancement-Mode MOSFET

LP2305LT1G

●APPLICATIONS

1) Advanced trench process technology
2) High Density Cell Design For Ultra Low On-Resistance
3) We declare that the material of product are Halogen Free and compliance with RoHS requirements.



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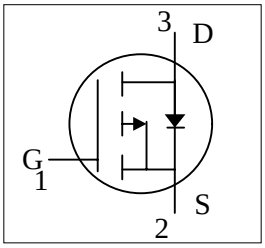

●FEATURES

1) V_{DS}= -30V
2) $R_{DS(ON)}$, Vgs@-10V, Ids@-4.2A = 70mΩ
3) $R_{DS(ON)}$, Vgs@-4.5V, Ids@-4.0A = 85 mΩ
4) $R_{DS(ON)}$, Vgs@-2.5V, Ids@-1.0A = 130mΩ

●DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LP2305LT1G	P05	3000/Tape&Reel
LP2305LT3G	P05	10000/Tape&Reel

●MAXIMUM RATINGS(Ta = 25℃)

Parameter	Symbol	Limits	Unit
Drain−to−Source Voltage	V_{DSS}	-30	V
Gate−to−Source Voltage	V_{GS}	±12	V
Continuous Drain Current	I_D	-4.2	A
Pulsed Drain Current(Note1)	I_{DM}	-30	A
Total Power Dissipation	P_D	1.4	W
Operating and Storage Temperature Range	T_J, Tstg	–55 to +150	°C
Thermal Resistance-Junction to Ambient(Note2)	$R_{\theta JA}$	140	°C/W

1. Repetitive Rating: Pulse width limited by the Maximum junction temperationr
2. 1-in^2 2oz Cu PCB board

LP2305LT1G

●ELECTRICAL CHARACTERISTICS (Ta= 25℃)

STATIC

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Drain−to−Source Breakdown Voltage	$V_{(BR)DSS}$	-30	–	–	V	V_{GS} = 0 V, I_D = -250 μA
Gate Threshold Voltage	$V_{GS(TH)}$	-0.7	–	-1.3	V	V_{GS} = V_{DS}, I_D =- 250 μA
Zero Gate Voltage Drain Current	I_{DSS}	–	–	-1	μA	V_{DS}=-24V, V_{GS}=0V
Gate−to−Source Leakage Current	I_{GSS}	–	–	±100	nA	V_{DS} = 0 V, V_{GS} = ±12 V
Drain−to−Source On Resistance(Note3)	$R_{DS(on)}$	–	53	70	mΩ	V_{GS} = -10V, I_D =-4.2 A
		–	64	85	mΩ	V_{GS} = -4.5 V, I_D =-4 A
		–	86	130	mΩ	V_{GS} = -2.5 V, I_D = -1 A
Forward Diode Voltage	V_{SD}		–	-1	V	V_{GS} = 0 V, I_{SD} = -1A
Forward Transconductance	g_{FS}	7	11	–	S	V_{DS} = -5.0 V, I_D = -5 A

DYNAMIC

Input Capacitance	Ciss	–	826.18	–	pF	V_{GS} = 0 V, f = 1.0 MHz, V_{DS}= -15 V
Output Capacitance	Coss	–	90.74	–		
Reverse Transfer Capacitance	Crss	–	53.18	–		
Total Gate Charge	Q_G	–	6.36	–	nC	V_{GS} =-15 V,V_{DS} = -4.5V I_D = -4A
Gate−to−Source Gate Charge	Q_{GS}	–	1.79	–		
Gate−to−Drain Charge	Q_{GD}	–	1.42	–		
Turn−On Delay Time	$t_{d(on)}$	–	11.36	–	ns	V_{DD} = -15V, R_L =3.6Ω I_D = −1A, V_{GEN} = -10V R_G = 6Ω
Rise Time	t_r	–	2.32	–		
Turn−Off Delay Time	$t_{d(off)}$	–	34.88	–		
Fall Time	t_f	–	3.52	–		

3. Pulse Test: Pulse width≤300μs, duty cycle ≤2%.

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ELECTRICAL CHARACTERISTIC CURVES

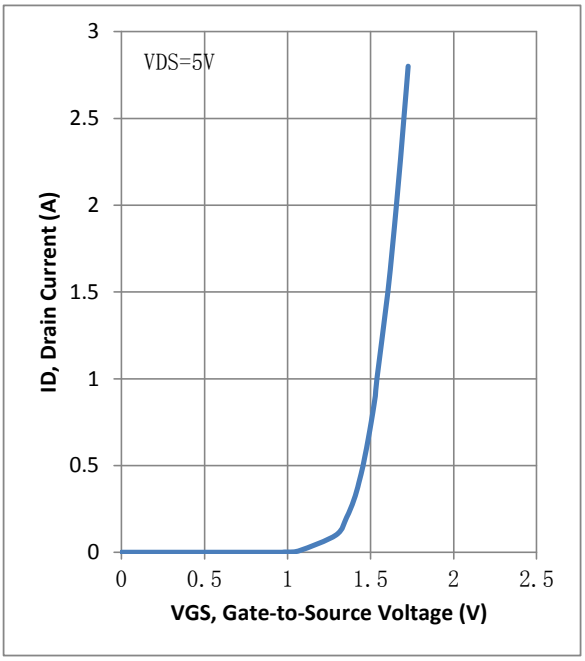

FIG. 1 Transfer Characteristics

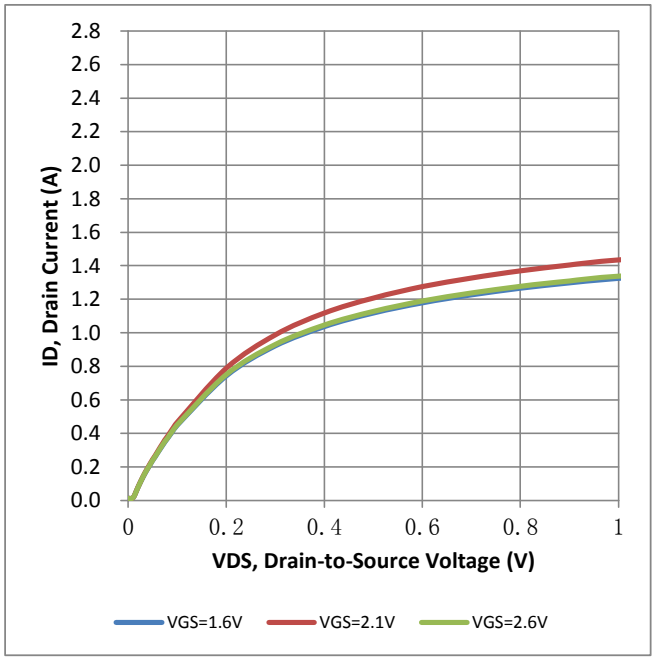

FIG. 2 On-Region Characteristics

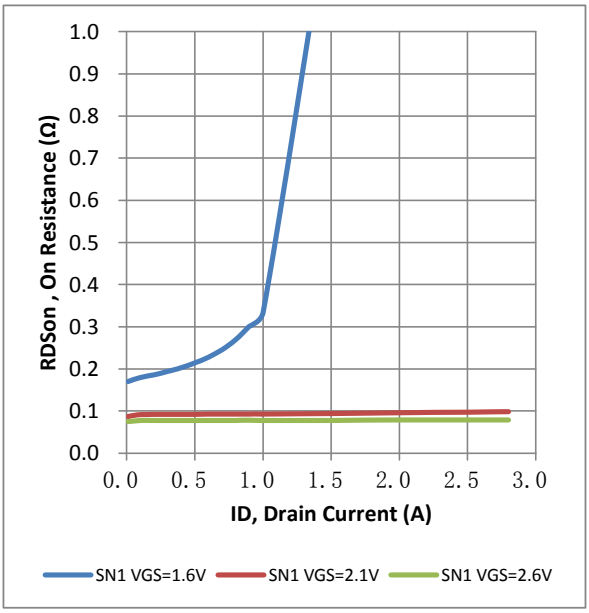

FIG. 3 On-Resistance Versus Drain Current

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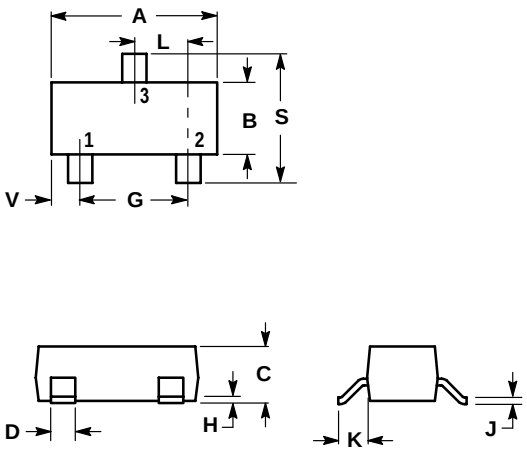

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60