

30V P-Channel Enhancement-Mode MOSFET

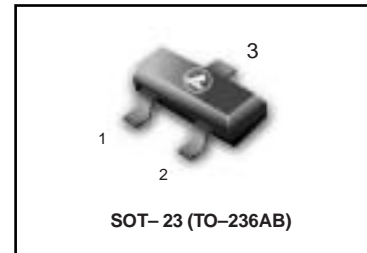
$V_{DS} = -30V$

$R_{DS(ON)}, V_{GS} @ -10V, I_{ds} @ -4.2A = 60m\Omega$

$R_{DS(ON)}, V_{GS} @ -4.5V, I_{ds} @ -4.0A = 75m\Omega$

$R_{DS(ON)}, V_{GS} @ -2.5V, I_{ds} @ -1.0A = 120m\Omega$

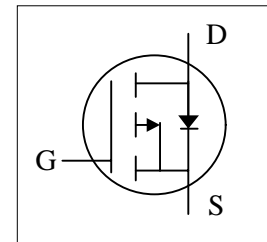
LP2305LT1G



FEATURES

Advanced trench process technology

High Density Cell Design For Ultra Low On-Resistance



DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LP2305LT1G	P05	3000/Tape&Reel

MAXIMUM RATINGS AND THERMAL CHARACTERISTICS ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 12	
Continuous Drain Current	I_D	-4.2	A
Pulsed Drain Current ¹⁾	I_{DM}	-30	
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	$^\circ C$

Note: 1. Repetitive Rating: Pulse width limited by the maximum junction temperature

ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static ²⁾						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -4.2A$		53.0	60.0	m Ω
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -4A$		64.0	75.0	
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = -2.5V, I_D = -1A$		86.0	120.0	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.7		-1.3	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$			-1	μA
Gate Body Leakage	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$			± 100	nA
Forward Transconductance	g_{fs}	$V_{DS} = -5V, I_D = -5A$	7	11		S
Source-Drain Diode						
Max. Diode Forward Current	I_S				-2.2	A
Diode Forward Voltage	V_{SD}	$I_S = -1.0A, V_{GS} = 0V$			-1	V

Note: 1. Pulse test: pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

2. Static parameters are based on package level with recommended wire-bonding

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TYPICAL ELECTRICAL CHARACTERISTICS

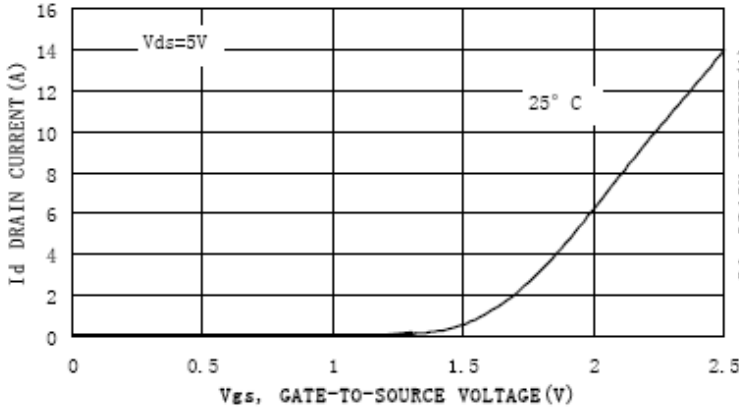


Figure 1. Transfer Characteristics

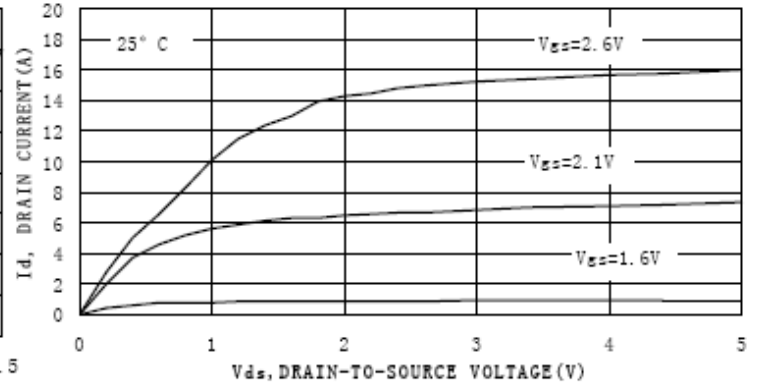


Figure 2. On-Region Characteristics

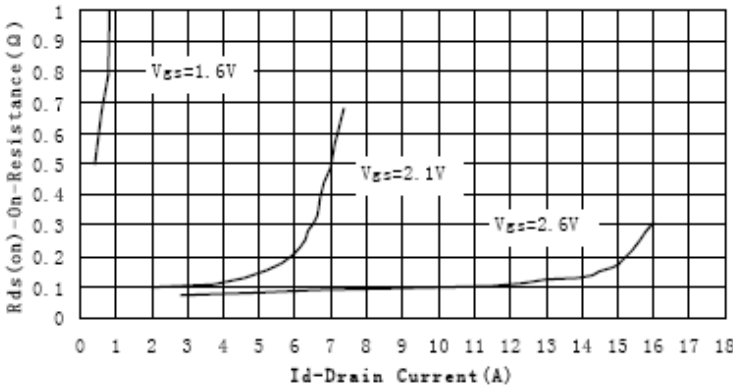


Figure 3. On-Resistance versus Drain Current

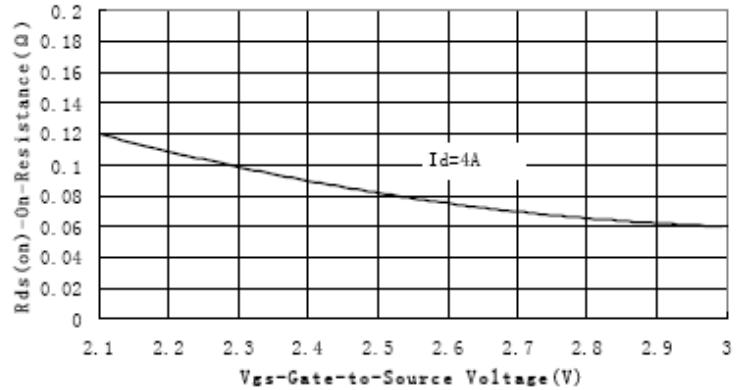


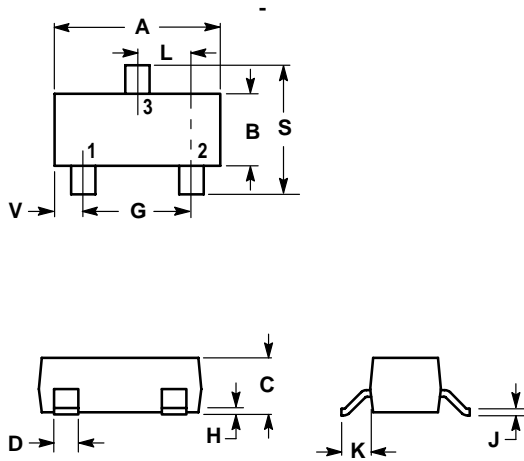
Figure 4. On-Resistance vs. Gate-to-Source Voltage

LP2305LT1G

SOT-23

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

