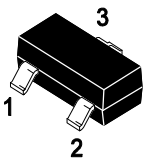
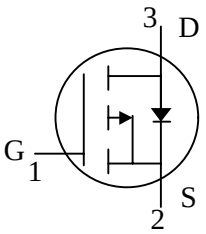
LP2305DSLT1G

12V P-Channel Enhancement-Mode MOSFET



SOT23(TO-236AB)



1. FEATURES

- VDS = -12V
- RDS(ON), Vgs@-4.5V, Ids@-3.5A ≤ 68mΩ
- RDS(ON), Vgs@-2.5V, Ids@-3A ≤ 81mΩ
- RDS(ON), Vgs@-1.8V, Ids@-2.0A ≤ 118mΩ
- Advanced trench process technology
- High Density Cell Design For Ultra Low On-Resistance
- Fully Characterized Avalanche Voltage and Current
- Improved Shoot-Through FOM
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. APPLICATIONS

- Simple Drive Requirement
- Small Package Outline
- Surface Mount Device

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LP2305DSLT1G	P5S	3000/Tape&Reel
LP2305DSLT3G	P5S	10000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	-12	V
Gate–to–Source Voltage – Continuous	VGS	±8	V
Drain Current – Continuous TA = 25°C – Pulsed (Note 1)	 ID IDM	 -4 -12	A
Total Device Dissipation FR–5 Board	PD	1100	mW
Junction and Storage temperature	TJ,Tstg	−55~+150	°C

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Thermal Resistance,Junction–to–Ambient	RΘJA	110	ºC/W

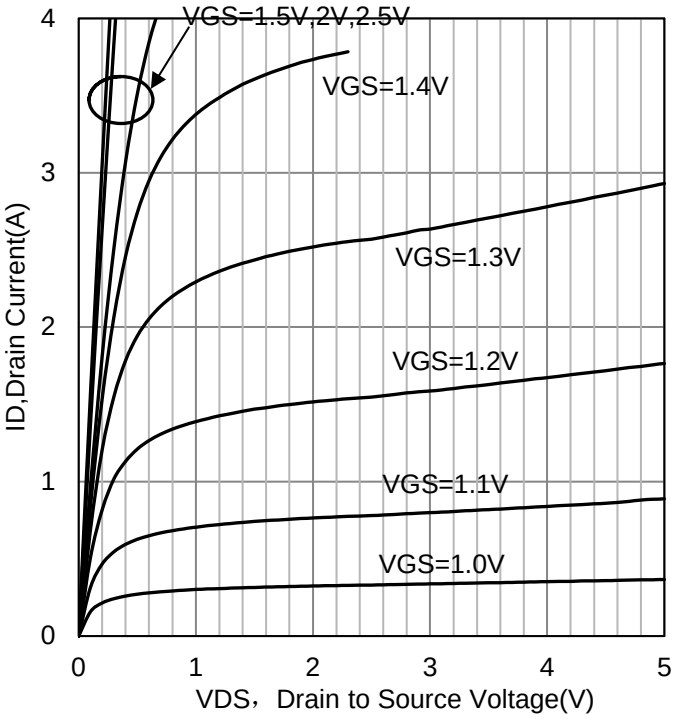
1.Repetitive Rating: Pulse width limited by the maximum junction temperature.

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

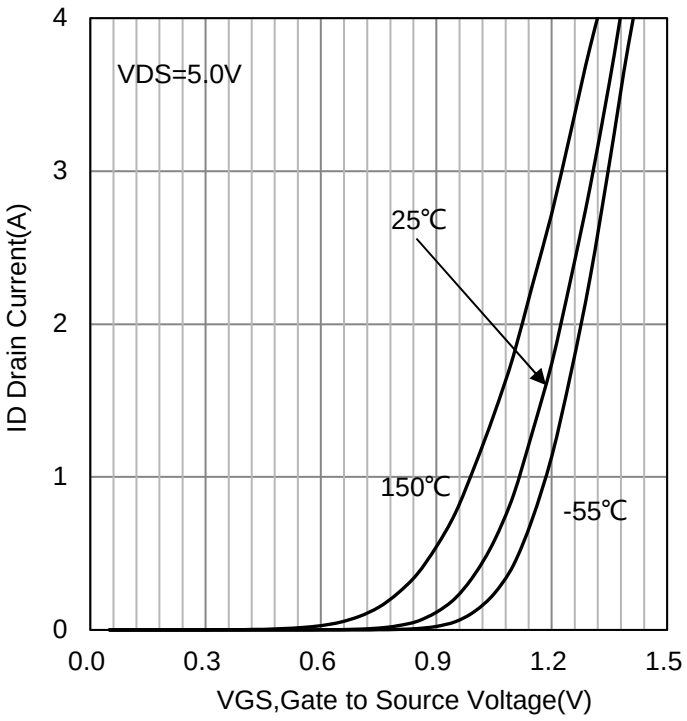
Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain–Source Breakdown Voltage (VGS = 0, ID = -250μA)		VBRDSS	-12	-	-	V
Static Drain–Source On–State Resistance (VGS = -4.5 V, ID = -3.5 A) (VGS = -2.5 V, ID = -3 A) (VGS = -1.8 V, ID = -2 A)		RDS(on)	- - -	47 55 67	68 81 118	mΩ
Zero Gate Voltage Drain Current (VGS = 0, VDS = -6.4 V)		IDSS	-	-	1	μA
Gate–Body Leakage Current (VGS = ± 8V, VDS = 0V)		IGSS	-	-	±100	nA
Gate Threshold Voltage (VDS = VGS, ID = -250μA)		VGS(th)	-0.4	-	-0.9	V
Diode Forward Voltage (IS= -1.6A, VGS = 0V)		VSD	-	-	-1.2	V
Dynamic						
Input Capacitance (VGS = 0 V, f = 1.0MHz,VDS= -4 V)		Ciss	-	664	-	pF
Output Capacitance (VGS = 0 V, f = 1.0MHz,VDS= -4 V)		Coss	-	88	-	pF
Reverse Transfer Capacitance (VGS = 0 V, f = 1.0MHz,VDS= -4 V)		Crss	-	72	-	pF
Gate-Resistance (VGS = 0 V, VDS=0V,f=1MHz)		Rg	-	4.7	-	Ω
Turn-On Delay Time	(VDD = -4V, RL= 4Ω ID = -1A, VGEN = -4.5V RG = 6.2Ω)	td(on)	-	4.23	-	ns
Rise Time		tr	-	11.7	-	
Turn-Off Delay Time		td(off)	-	25.4	-	
Fall Time		tf	-	14.2	-	

2.Pulse Test: Pulse Width ≤300 μs, Duty Cycle ≤2.0%.

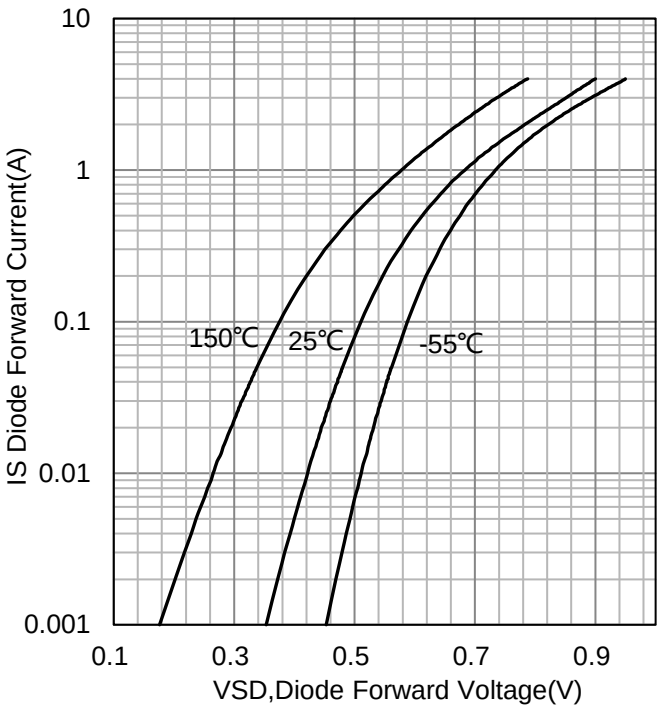
7. ELECTRICAL CHARACTERISTICS CURVES



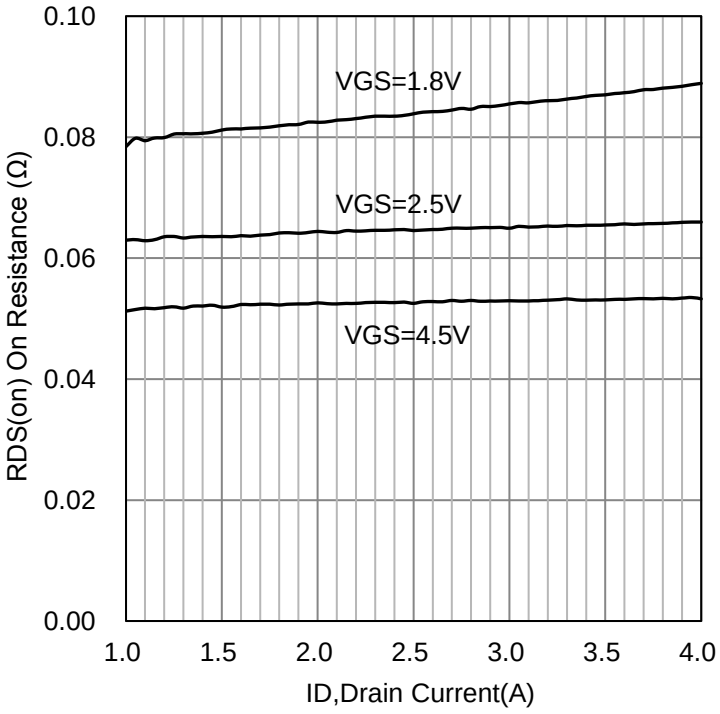
ID vs. VDS



ID vs. VGS

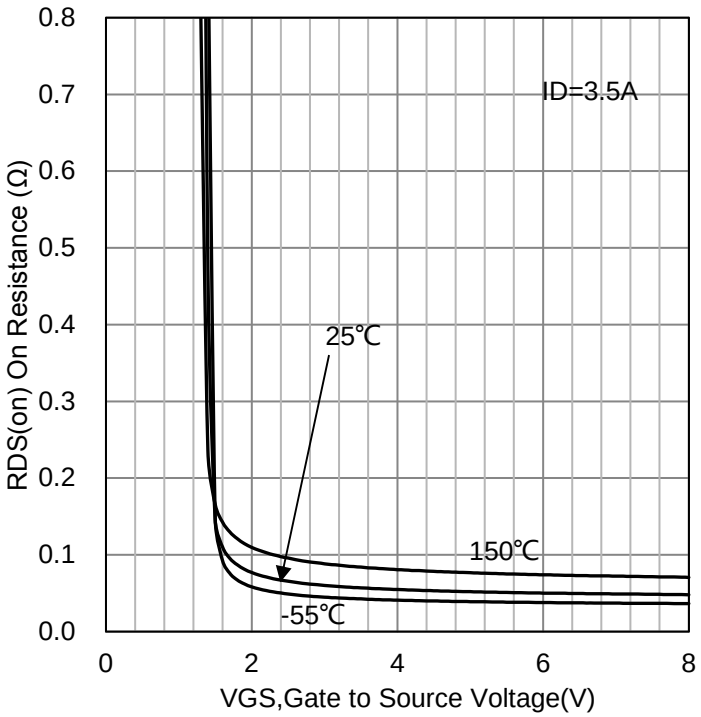


IS vs. VSD

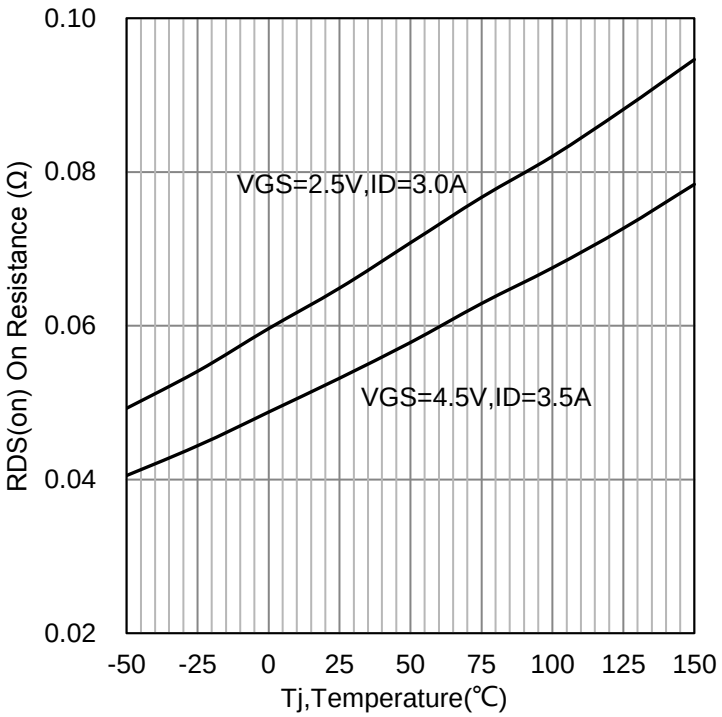


RDS(on) vs. ID

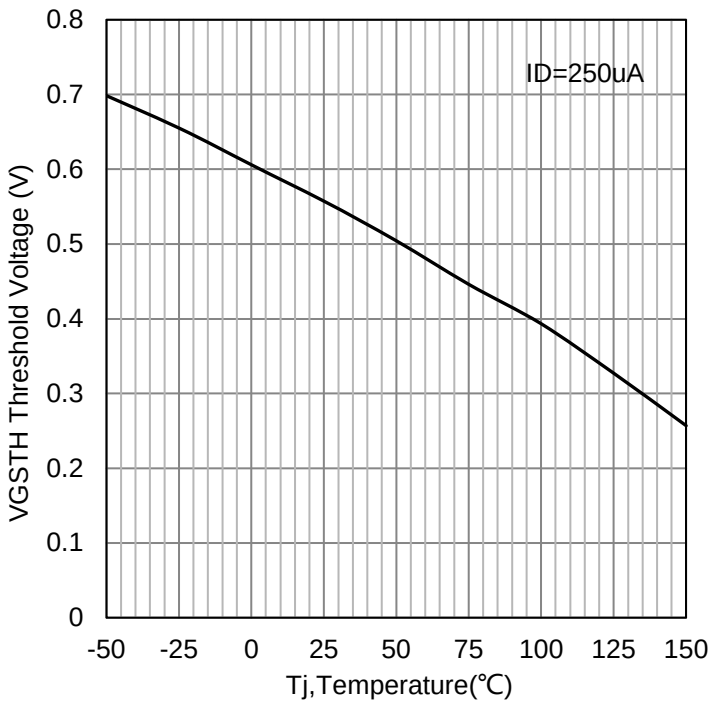
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



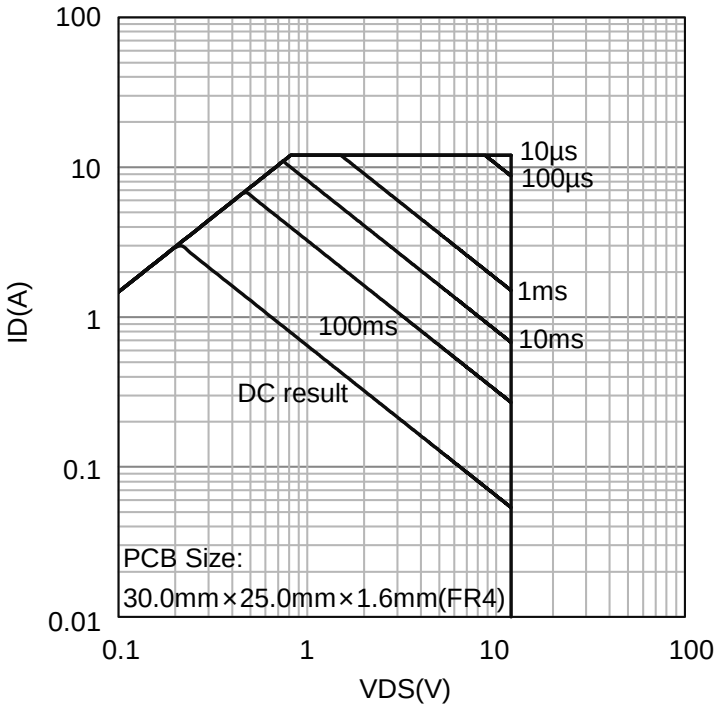
RDS(on) vs. VGS



RDS(on) vs. Tj

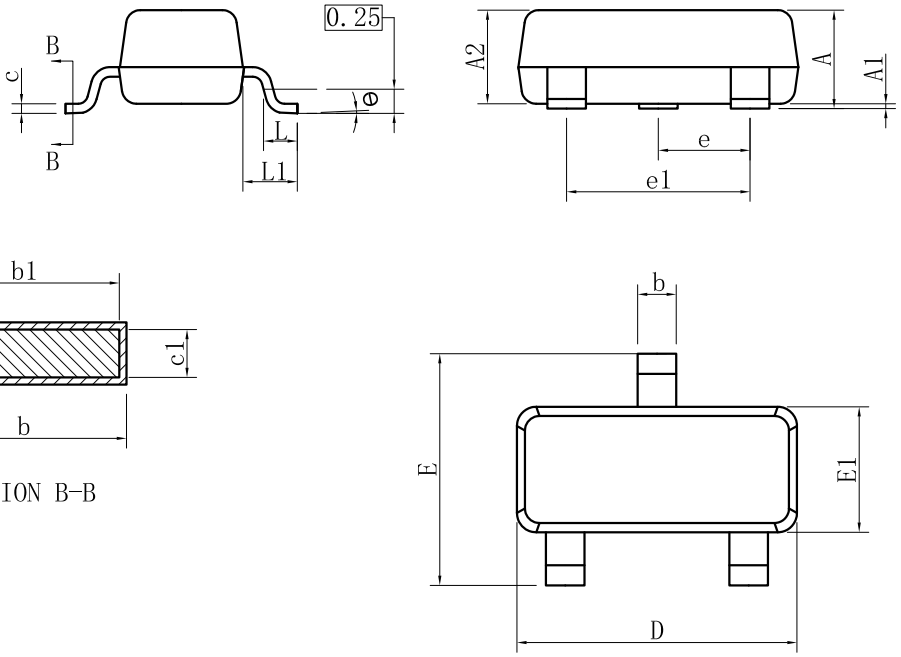


VGSTH vs. Tj



Safe Operating Area

8.OUTLINE AND DIMENSIONS

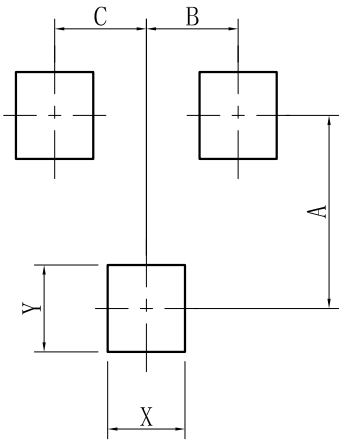


SOT23			
DIM	MIN	NOR	MAX
A	0.89	-	1.12
A1	0.01	-	0.10
A2	0.88	0.95	1.02
b	0.30	-	0.50
b1	0.30	0.40	0.45
c	0.08	-	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	-	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	-	8°
All Dimensions in mm			

GENERAL NOTES

1. Top package surface finish Ra0.4±0.2um
2. Bottom package surface finish Ra0.7±0.2um
3. Side package surface finish Ra0.4±0.2um

9.SOLDERING FOOTPRINT



SOT23	
DIM	(mm)
X	0.80
Y	0.90
A	2.00
B	0.95
C	0.95

DISCLAIMER

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.

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