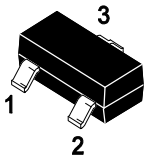
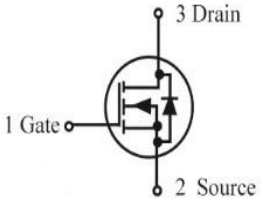
LN2296LT1G

100V N-Channel Power MOSFET



SOT23(TO-236)



1. FEATURES

- VDS =100V
- RDS(ON),VGS@10V ≤124mΩ
- RDS(ON),VGS@6V ≤150mΩ
- RDS(ON),VGS@4.5V ≤180mΩ
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. APPLICATIONS

- Load switch and Power tools

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LN2296LT1G	N96	3000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Drain–Source Voltage	VDSS	100	V
Gate–to–Source Voltage – Continuous	VGS	±20	V
Drain Current – Continuous TA = 25°C – Pulsed(Note 1)	 ID IDM	 2 8	 A

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Power Dissipation	PD	1.4	W
Thermal Resistance, Junction–to–Ambient(Note 2)	RΘJA	90	ºC/W
Junction and Storage temperature	TJ,Tstg	−55~+150	° C

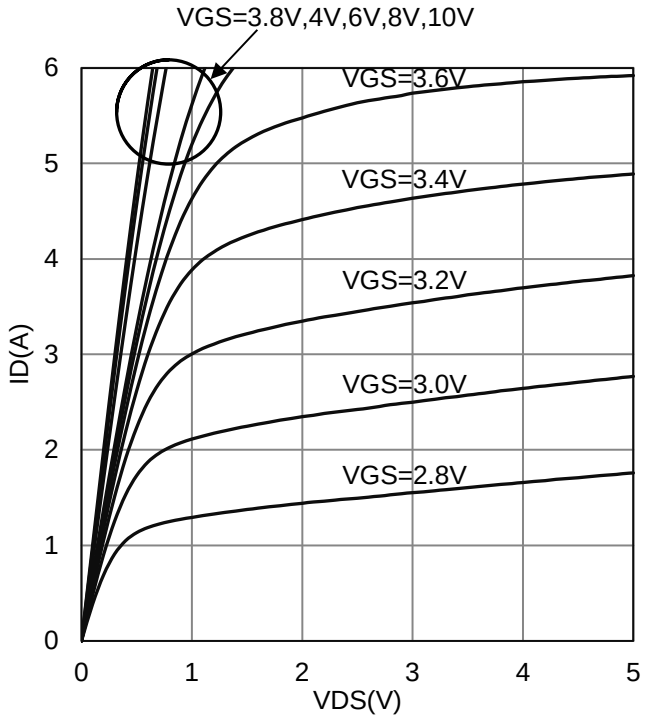
1. Repetitive Rating: Pulse width limited by the Maximum junction temperation.
2. 1-in² 2oz Cu PCB board.

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

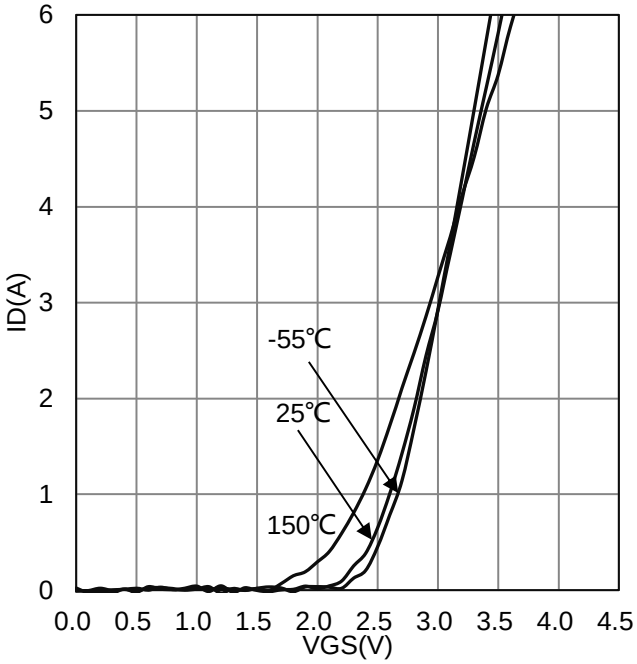
Characteristic		Symbol	Min.	Typ.	Max.	Unit
Static						
Drain–Source Breakdown Voltage (VGS = 0 V, ID = 250 μA)		VBRDSS	100	-	-	V
Gate-Source Threshold Voltage (VDS = VGS , ID =250 μA)		VGS(th)	1.3	1.8	2.5	V
Gate-Body Leakage Current (VDS = 0 V, VGS = ± 20 V)		IGSS	-	-	± 100	nA
Zero Gate Voltage Drain Current (VDS = 80 V, VGS = 0 V)		IDSS	-	-	1	uA
Drain-Source On-Resistance(Note 3) (VGS = 10 V, ID = 2 A) (VGS = 6 V, ID = 2 A) (VGS = 4.5 V, ID = 2 A)		RDS(ON)	- - -	86 103 125	124 150 180	mΩ
Diode Forward Voltage (IS = 1 A, VGS = 0 V)		VSD	-	0.7	1.3	V
Dynamic						
Total Gate Charge	(VDD = 50 V, ID = 2 A, VGS = 10 V)	Qg	-	4.2	-	nC
Gate-Source Charge		Qgs	-	1	-	
Gate-Drain Charge		Qgd	-	1.4	-	
Input Capacitance	(VGS = 0 V, VDS = 50 V, f= 1MHz)	Ciss	-	154	-	pF
Output Capacitance		Coss	-	26.5	-	
Reverse Transfer Capacitance		Crss	-	0.8	-	
Turn-On Delay Time	(VDD = 50 V, ID = 2 A, VGS = 10 V, RG = 10 Ω)	td(on)	-	3.4	-	ns
Rise Time		tr	-	4	-	
Turn-Off Delay Time		td(off)	-	13	-	
Fall Time		tf	-	4.5	-	

3.Pulse test: PW ≤ 300us duty cycle ≤ 2%.

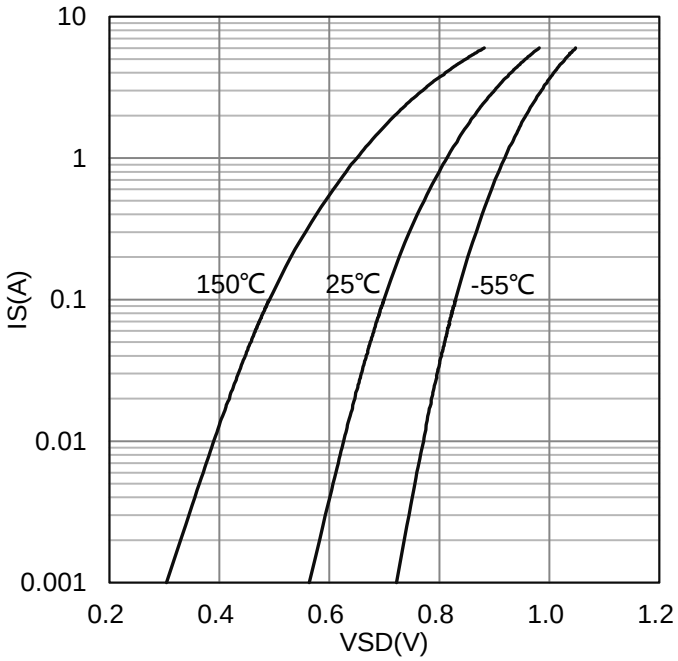
7. ELECTRICAL CHARACTERISTICS CURVES



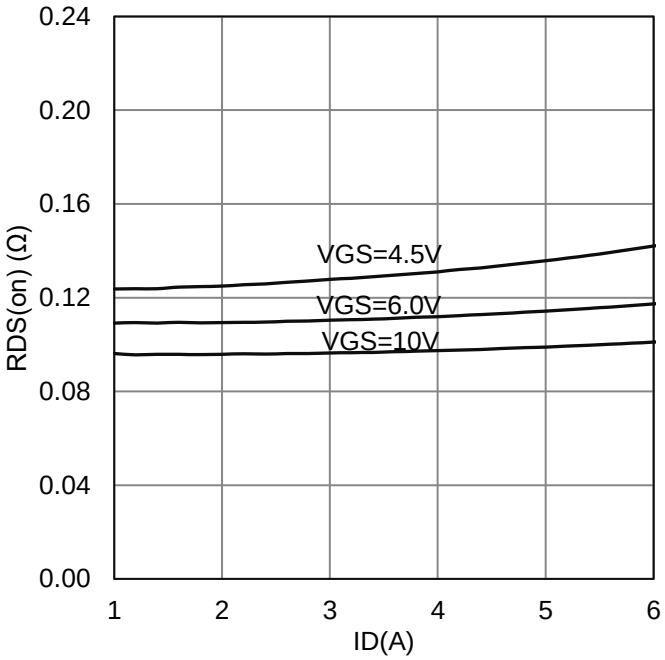
ID vs. VDS



ID vs. VGS

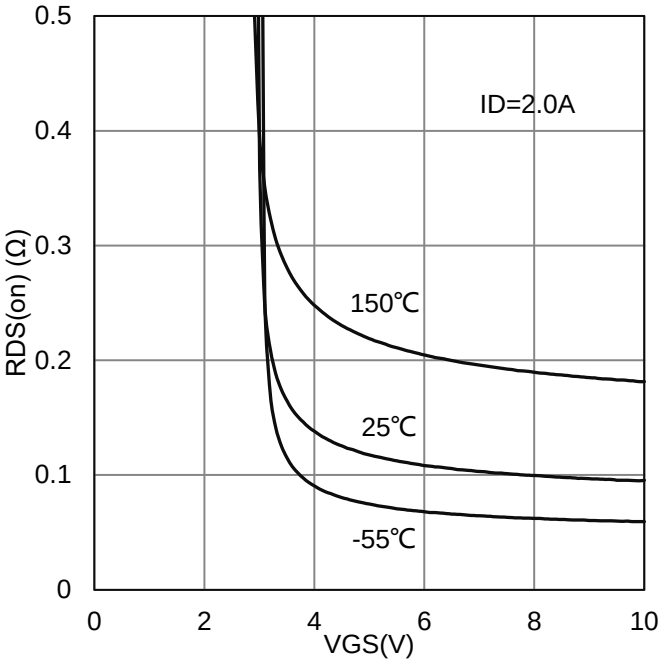


IS vs. VSD

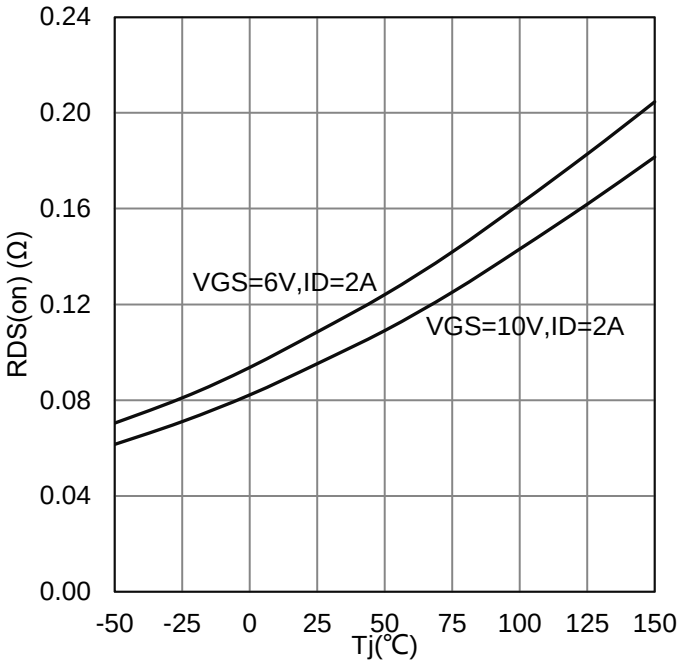


RDS(on) vs. ID

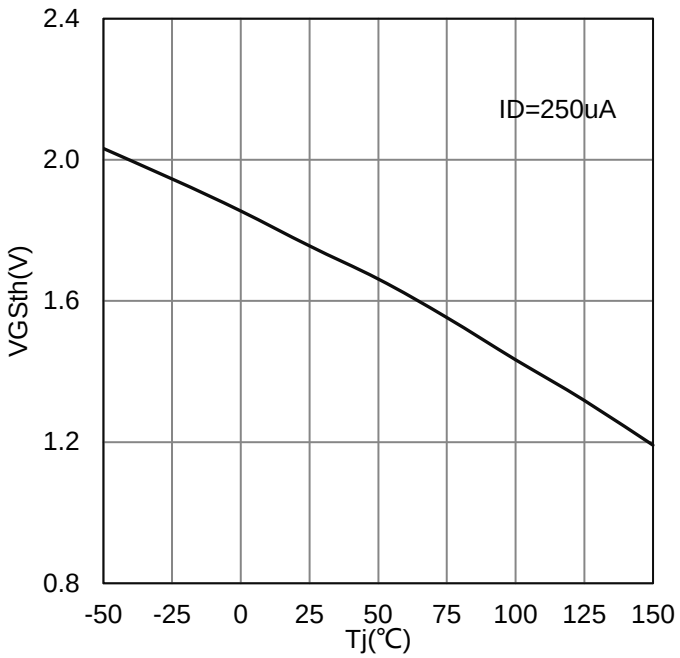
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



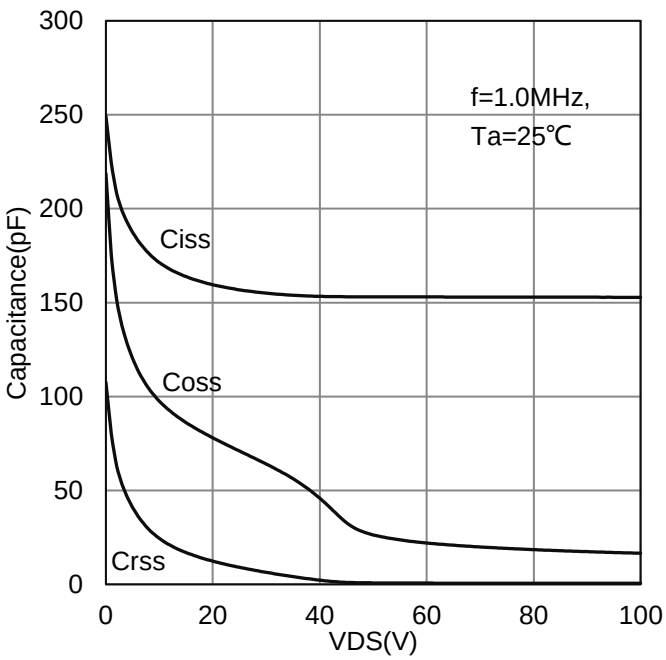
RDS(on) vs. VGS



RDS(on) vs. Tj

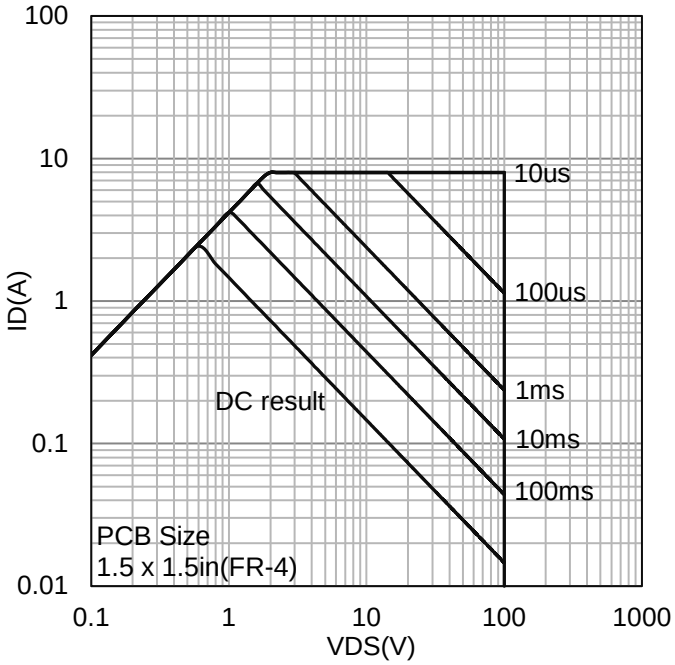


VGSth vs. Tj

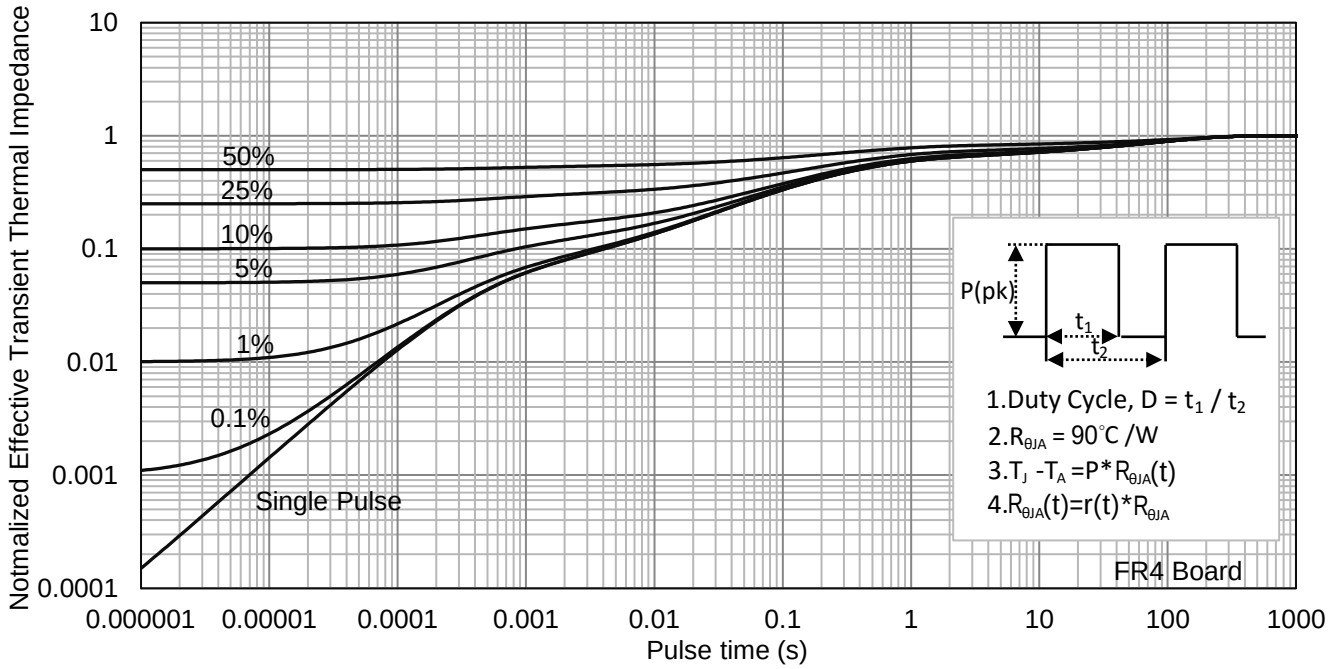


Capacitance

7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



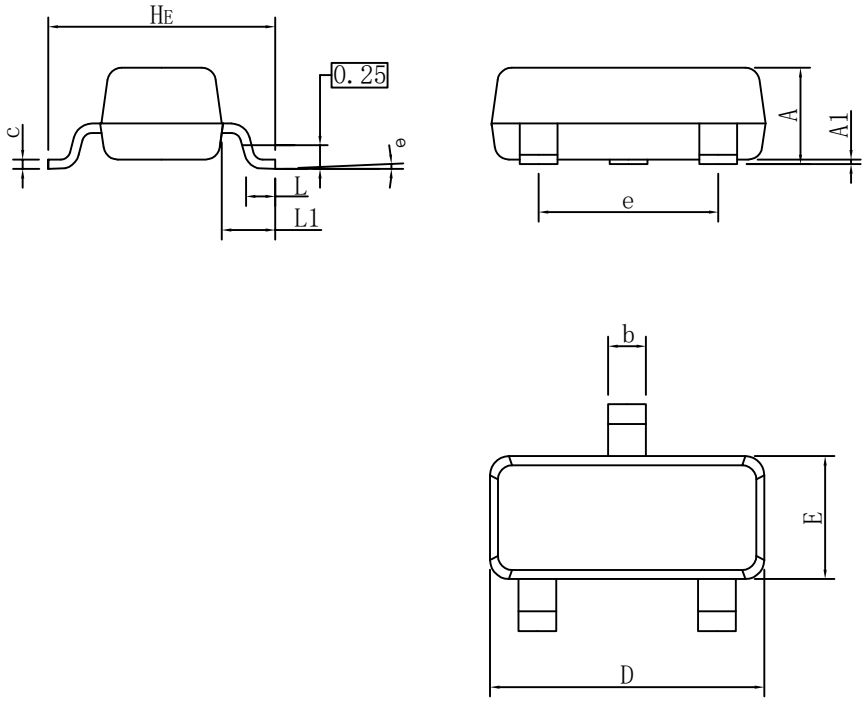
Safe Operating Area



Thermal Response

8.OUTLINE AND DIMENSIONS

SOT23E

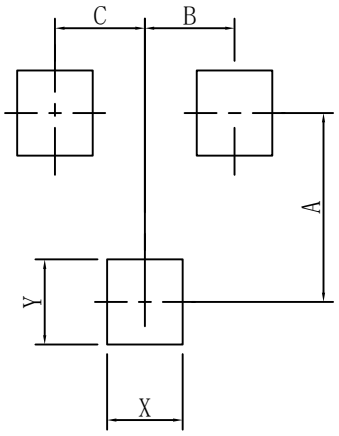


SOT23E			
DIM	MIN	NOR	MAX
A	0.90	1.00	1.10
A1	0.01	0.06	0.10
b	0.30	0.40	0.50
c	0.10	0.17	0.20
D	2.80	2.90	3.00
E	1.20	1.30	1.40
e	1.80	1.90	2.00
L	0.20	0.40	0.60
L1	0.60REF		
HE	2.20	2.40	2.60
θ	0°	-	10°
All Dimensions in mm			

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



SOT23E	
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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