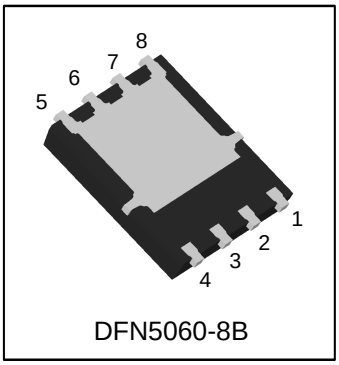
LN7617DT1WG

100V N-Channel POWER MOSFET



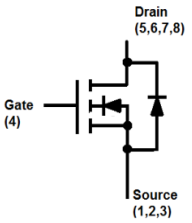
DFN5060-8B

1. FEATURES

- High Speed Power Switching
- We declare that the material of product compliance with RoHS requirements and Halogen Free.

2. APPLICATIONS

- Power Tools
- UPS
- Motor Control



3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
LN7617DT1WG	LN7617	3000/Tape&Reel

4. MAXIMUM RATINGS(Ta = 25ºC)

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		VDS	100	V
Gate-to-Source Voltage		VGS	±20	V
Continuous Drain Current	TC=25℃	ID	43	A
	TC=100℃		35	
	TA=25℃		11	
	TA=100℃		8.5	
Pulsed Drain Current(Note 2)		IDM	172	A
Avalanche Current		IAS	19	A
Avalanche energy L=0.1mH		EAS	18.05	mJ
Power Dissipation	TC=25℃	PD	41	W
	TA=25℃		2.5	
Operating Junction and Storage Temperature Range		Tj/Tstg	-55~+150	℃

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Junction-to-Ambient(Note 1)	RθJA	50	℃/W
Maximum Junction-to-Ambient(Note 3)	RθJA	115	
Maximum Junction-to-Case	RθJC	3	

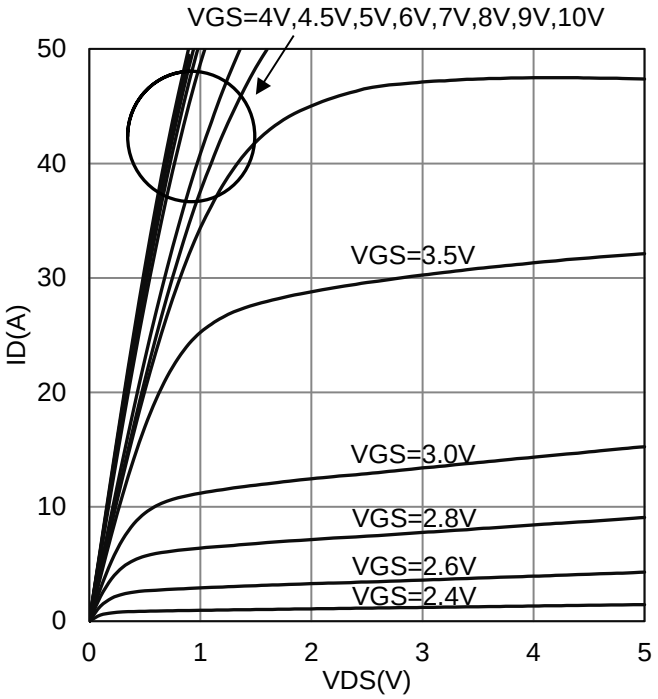
1.Surface mounted on "1.5 x 1.5" FR4 board using 1 sq in pad, 2 oz Cu
2.Pulse width limited by maximum junction temperature.
3.Surface mounted on FR4 board using the recommended pad size.

6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

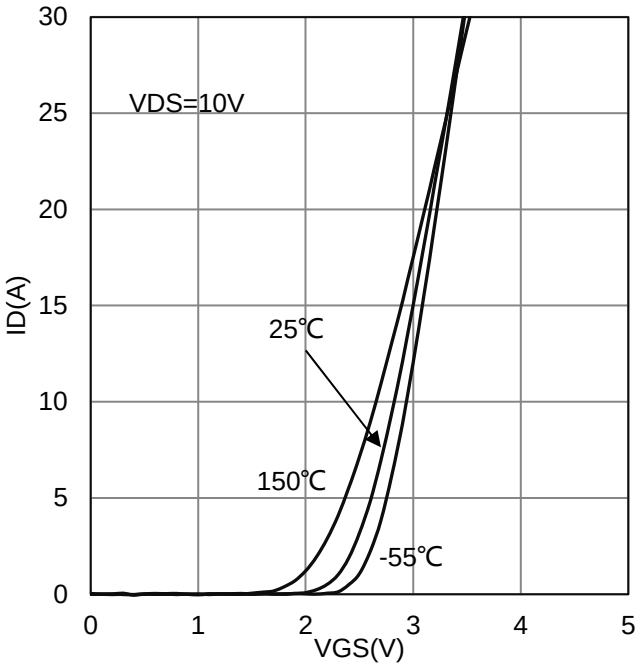
Characteristic		Symbol	Min.	Typ.	Max.	Unit
STATIC						
Drain-Source Breakdown Voltage (VGS = 0 V, ID = 250 μA)		BVDSS	100	-	-	V
Gate-Source Threshold Voltage (VDS = VGS , ID = 250 μA)		VGS(th)	1.4	2	2.4	V
Gate-Body leakage current (VDS = 0 V, VGS = ±20 V)		IGSS	-	-	±100	nA
Drain-Source Leakage Current (VDS = 100 V, VGS = 0 V)		IDSS	-	-	1	μA
Drain-to-Source On-Resistance(Note 4) (VGS = 10 V, ID =6 A) (VGS = 4.5 V, ID =6 A)		RDS(ON)	 - -	 14 22	 17 26	mΩ
Diode Forward Voltage (IS = 15 A, VGS = 0 V)		VSD	-	0.9	1.2	V
DYNAMIC						
Total Gate Charge	(VDS = 50 V , VGS = 10 V , ID = 15 A)	Qg(10V)	-	16	-	nC
Total Gate Charge		Qg(4.5V)	-	9	-	
Gate to Source Charge		Qgs	-	3	-	
Gate to Drain Charge		Qgd	-	3	-	
Input Capacitance	(VGS = 0 V, VDS = 50 V, f = 1MHz)	Ciss	-	875	-	pF
Output Capacitance		Coss	-	158	-	
Reverse Transfer Capacitance		Crss	-	2.7	-	
Turn-on Delay Time	(VDD = 50 V , VGS =10 V,RG = 10 Ω,ID = 11 A)	td(on)	-	8.2	-	nS
Rise Time		tr	-	11	-	
Turn-Off Delay Time		td(off)	-	37	-	
Fall Time		tf	-	18.2	-	

4.Pulse test; pulse width≤300μs, duty cycle≤ 2%

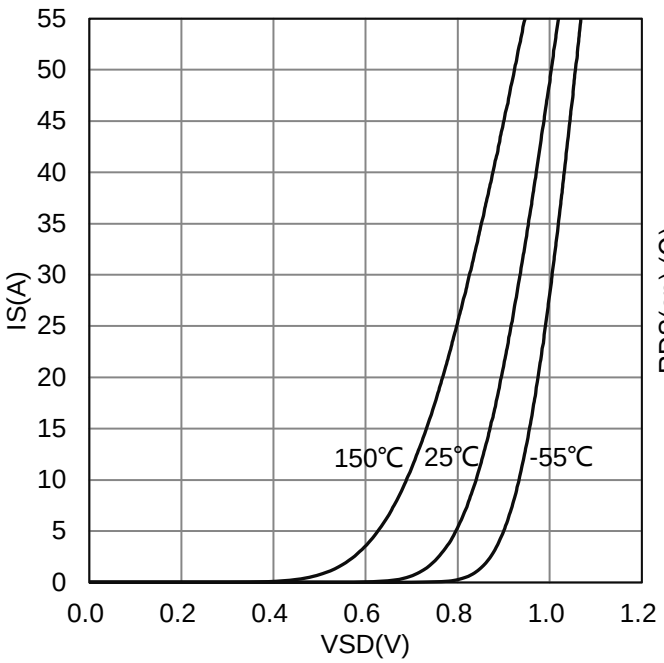
7. ELECTRICAL CHARACTERISTICS CURVES



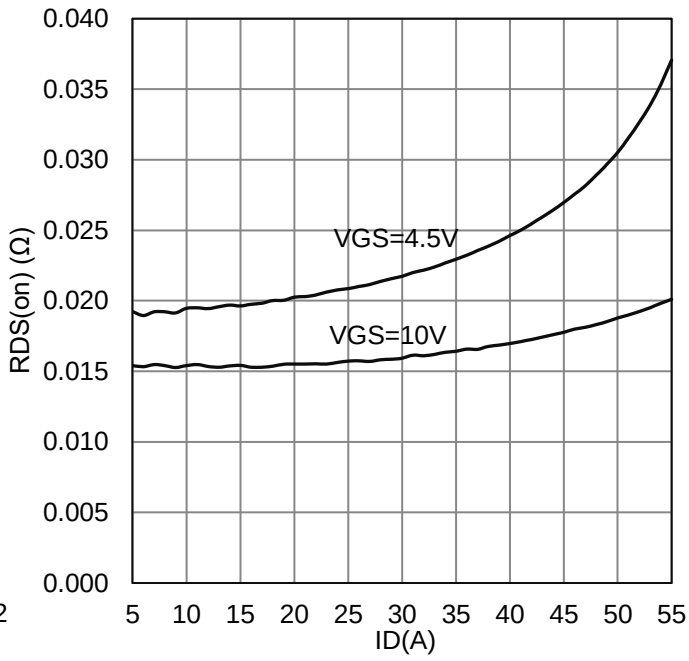
ID vs. VDS



ID vs. VGS

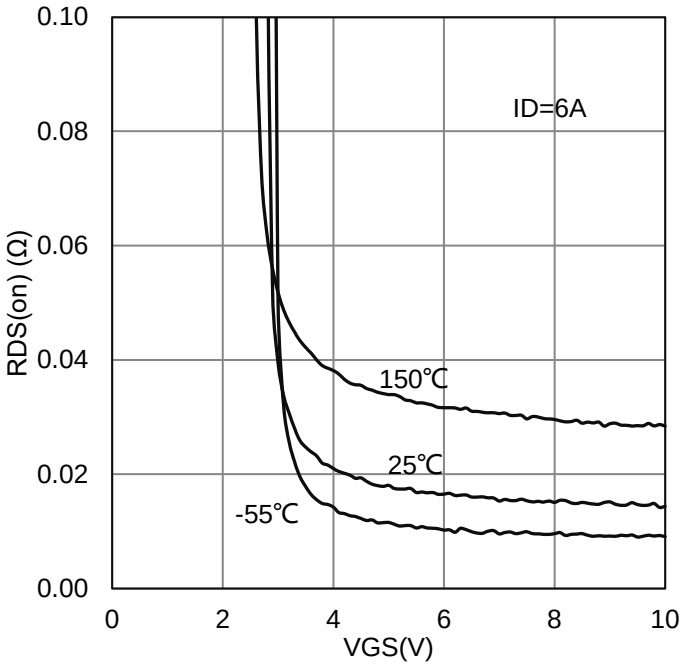


IS vs. VSD

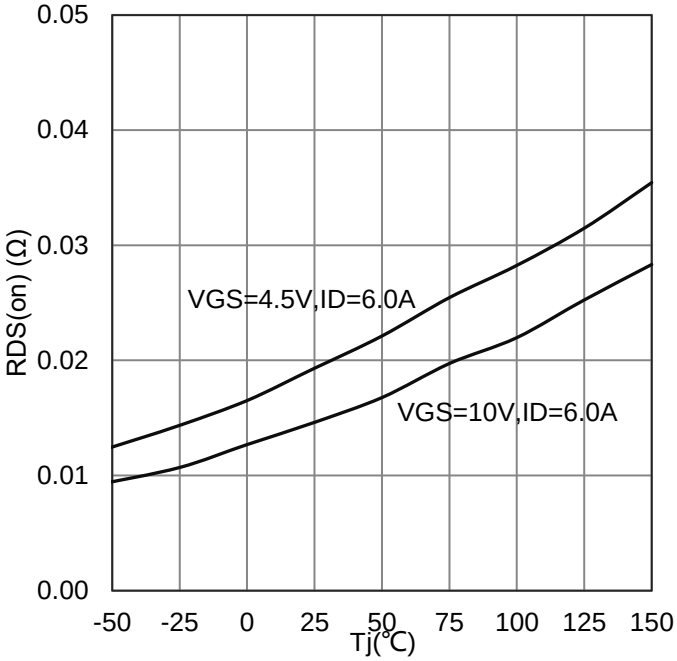


RDS(on) vs. ID

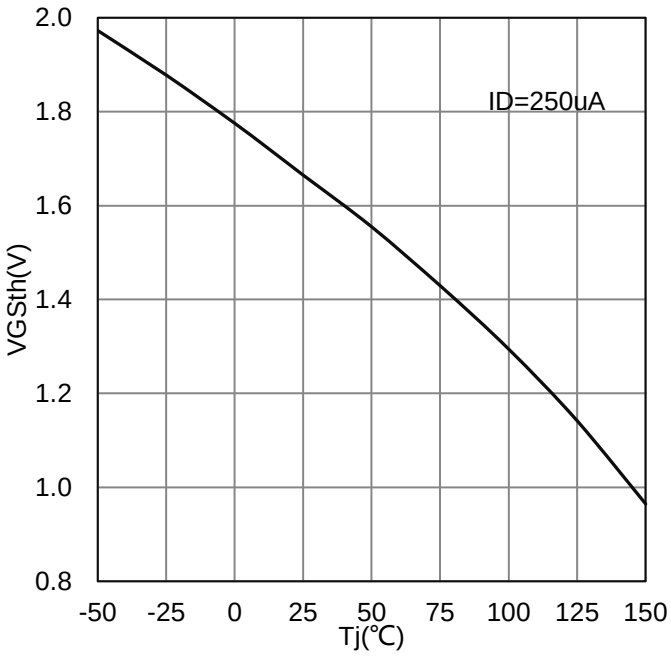
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



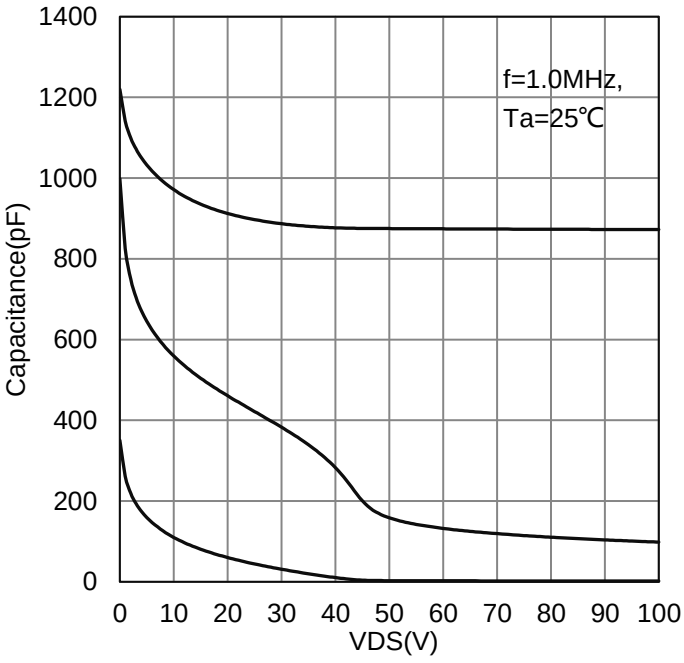
RDS(on) vs. VGS



RDS(on) vs. Tj

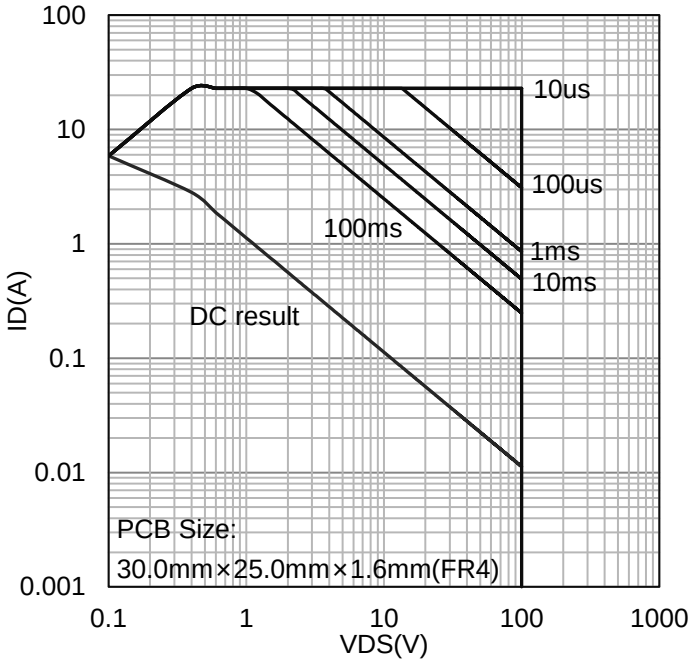


VGSth vs. Tj

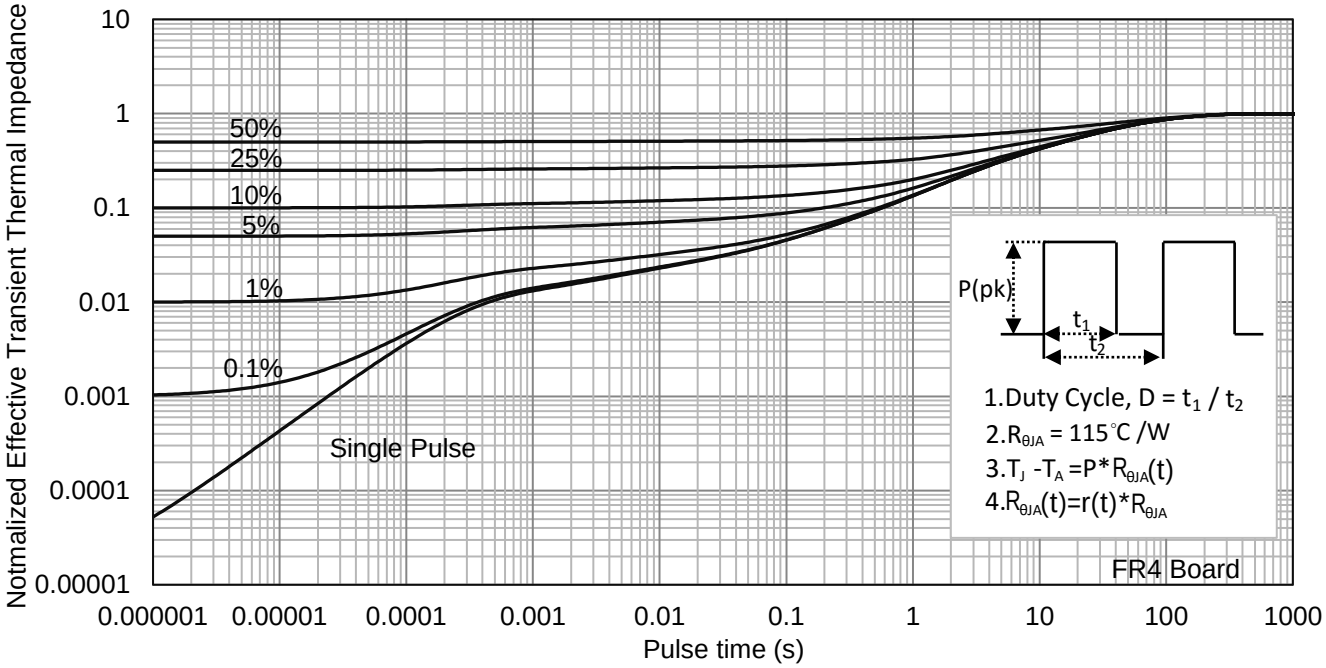


Capacitance

7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



Safe Operating Area



Thermal Response

8.OUTLINE AND DIMENSIONS

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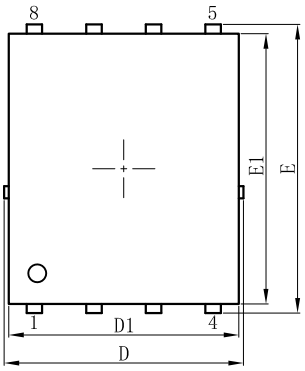
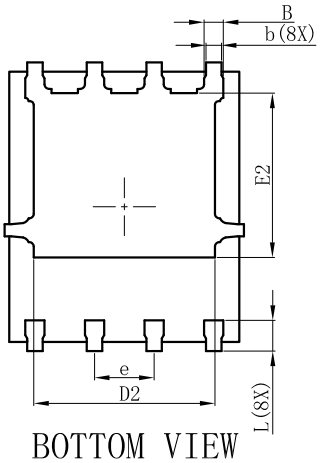


TOP VIEW



BOTTOM VIEW

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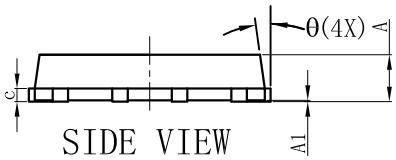
DIM	MIN	NOR	MAX
A	0.90	1.00	1.10
A1	0.00	0.02	0.05
E	6.00	6.15	6.30
E1	5.66	5.76	5.86
E2	3.40	3.50	3.60
D	4.95	5.10	5.25
D1	4.80	4.90	5.00
D2	3.76	3.86	3.96
b	0.30	0.35	0.40
B	0.36	0.41	0.46
L	0.56	0.66	0.76
e	1.27BSC		
c	0.254REF.		
θ	0°	-	12°
All Dimensions in mm			

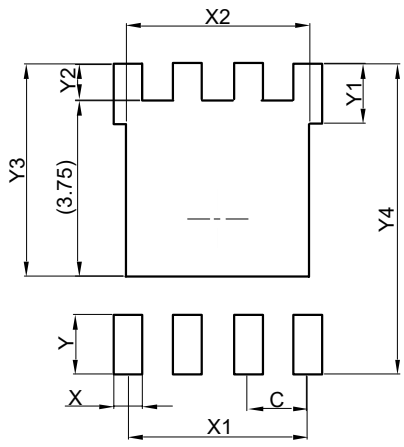


SIDE VIEW

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
4. Protrusion or Gate Burrs shall not exceed 0.05mm per side.
5. Off-center Max0.038mm; Mismatch Max 0.038mm.

9.SOLDERING FOOTPRINT



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DIM	(mm)
C	1.27
X	0.61
X1	3.81
X2	3.91
Y	1.27
Y1	1.27
Y2	0.77
Y3	4.52
Y4	6.61

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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