

LPB8233DT0AG

P-Channel 20-V (D-S) MOSFET

1. FEATURES

- Low RDS(on) trench technology
- Low thermal impedance.
- Fast switching speed.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.



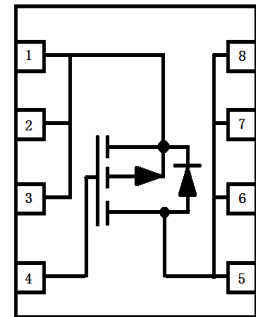
DFN3333-8A

2. APPLICATIONS

- Load Switches
- DC/DC Conversion
- Motor Drives

3. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	Shipping
LPB8233DT0AG	N2A	2000/Tape&Reel



4. MAXIMUM RATINGS(Ta = 25°C unless otherwise stated)

Parameter		Symbol	Limits	Unit
Drain-to-Source Voltage		VDS	-20	V
Gate-to-Source Voltage		VGS	± 10	V
Continuous Drain Current(Note 1)	TA =25°C	ID	-18	A
	TA =70°C		-14	
Continuous Drain Current(Note 3)	TA =25°C		-7	
	TA =70°C		-5	
Pulsed Drain Current (Note 2)		IDM	-70	
Pulsed Drain Current (Note 3)			-28	
Avalanche Current		IAS	43	A
Avalanche Energy L=0.1mH		EAS	93	mJ
Power Dissipation(Note 1)	TA =25°C	PD	2.5	W
	TA =70°C		2	
Power Dissipation(Note 3)	TA =25°C		0.7	
	TA =70°C		0.4	
Operating Junction and Storage Temperature Range		TJ,TSTG	-55 ~+150	°C

5. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Maximum Junction-to-Ambient(Note 1)	RθJA	50	°C/W
Maximum Junction-to-Ambient(Note 3)	RθJA	174	
Maximum Junction-to-Case	RθJC	2.7	

- 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 minimum recommended pad size.

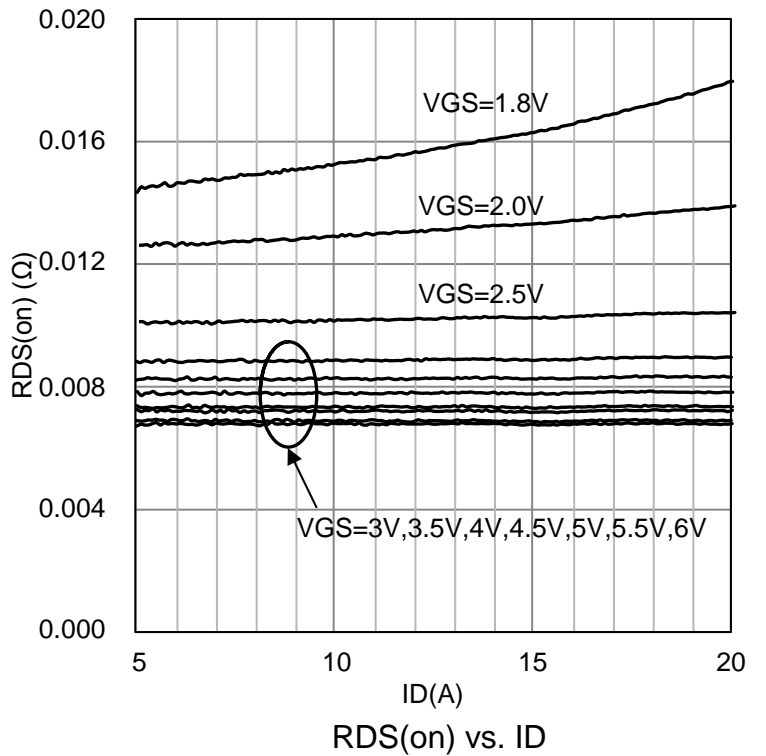
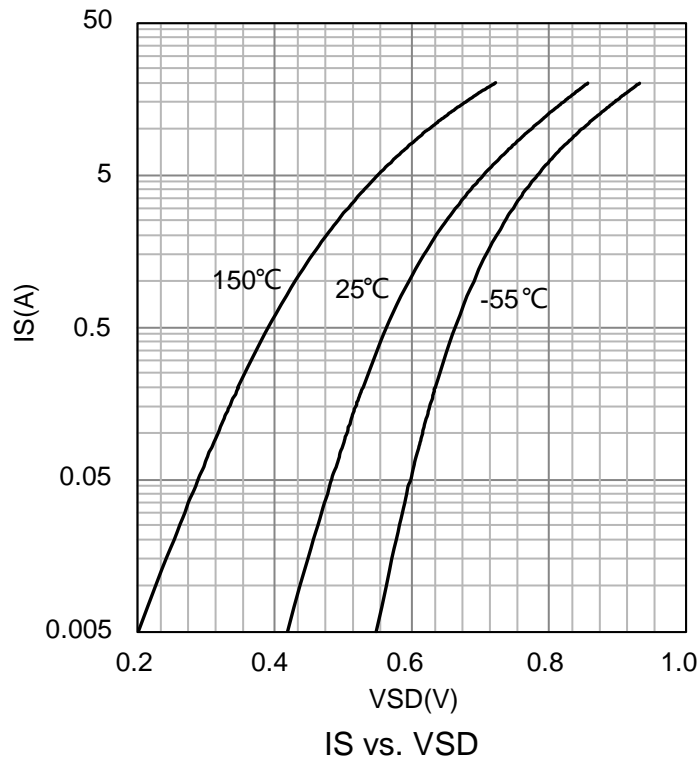
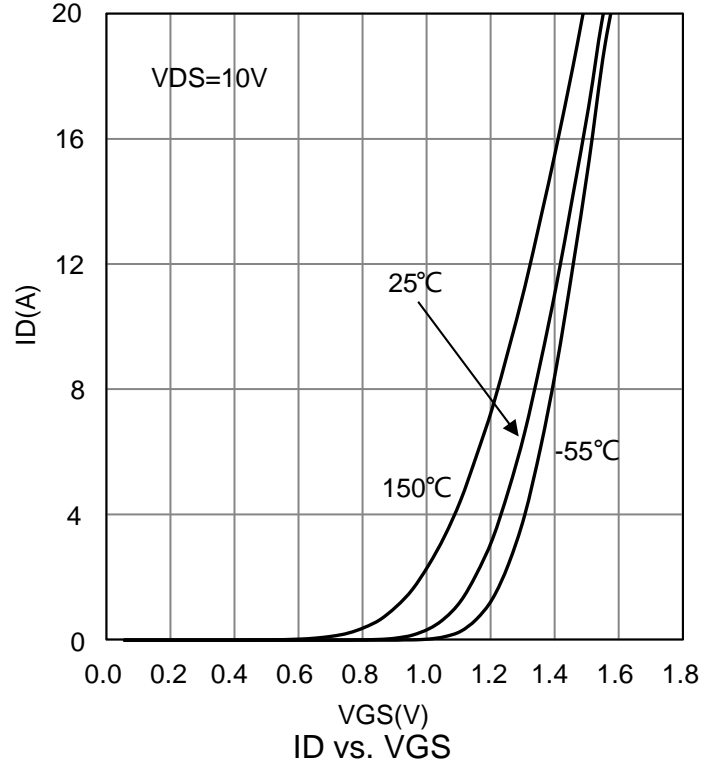
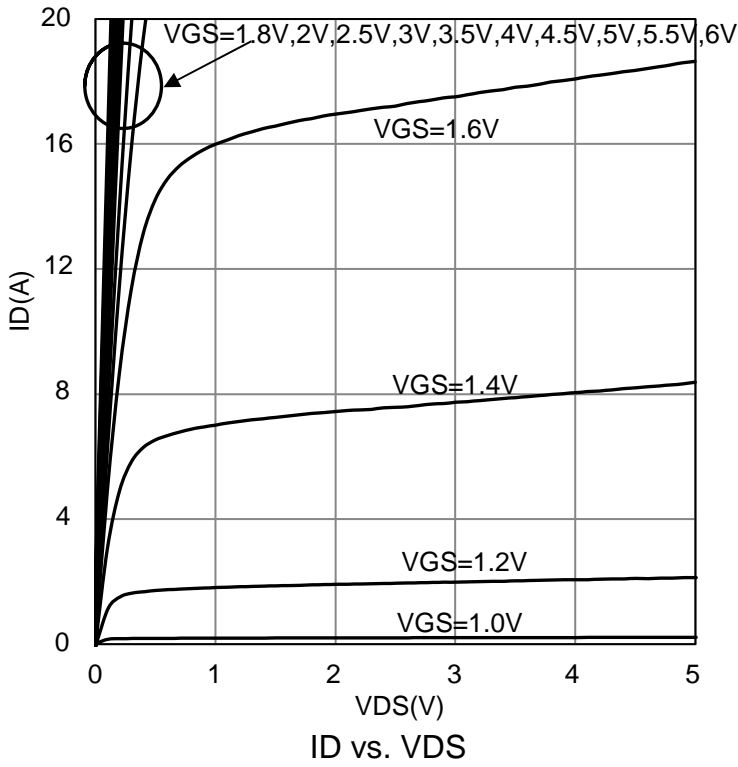
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain-Source Breakdown Voltage (VGS = 0 V, ID = -250 μ A)	V(BR)DSS	-20	-	-	V
Gate-Source Threshold Voltage (VDS = VGS, ID = -250 μ A)	VGS(TH)	-0.5	-0.7	-1.3	V
Gate-Body leakage current (VDS = 0 V, VGS = \pm 10V)	IGSS	-	-	\pm 100	nA
Zero Gate Voltage Drain Current (VDS = -16 V, VGS = 0 V) (VDS = -16 V, VGS = 0 V, TJ = 55°C)	IDSS	-	-	-1 -10	μ A
Drain-to-Source On-Resistance(Note 4) (VGS = -4.5 V, ID = -14 A) (VGS = -2.5 V, ID = -11 A)	RDS(ON)	-	7.5 10	9.5 13.8	m Ω
Diode Forward Voltage(Note 4) (IS = -2.5 A, VGS = 0 V)	VSD	-	-0.69	-1.2	V
Dynamic(Note 5)					
Total Gate Charge	(VDS = -10 V, VGS = -4.5 V, ID = -14.6 A)	Qg	-	61	-
Gate to Source Charge		Qgs	-	11.4	-
Gate to Drain Charge		Qgd	-	14.7	-
Turn-on Delay Time	(VDS=-10 V, RL=0.7 Ω , ID=- 14.6A, VGEN=- 4.5 V, RGEN=6 Ω)	td(ON)	-	29	-
Rise Time		tr	-	180	-
Turn-Off Delay Time		td(OFF)	-	415	-
Fall Time		tf	-	270	-
Input Capacitance	(VDS=-15 V, VGS=0 V, f=1MHz)	Ciss	-	5147	-
Output Capacitance		Coss	-	661	-
Reverse Transfer Capacitance		Crss	-	616	-
Gate-Resistance (VDS = 0 V, VGS = 0 V, f = 1 MHz)	Rg	-	2.5	10	Ω
Source-Drain DIODE Ratings and Characteristics(Tc= 25° C)					
Continuous Current(Note 3)	IS	-	-	-20	A
Plused Current(Note 3)	ISM	-	-	-70	
Reverse Recovery Time (IF=IS, dIf/dt=100A/us)	trr	-	-	200	nS
Reverse Recovery Charge (IF=IS, dIf/dt=100A/us)	Qrr	-	-	96	nC

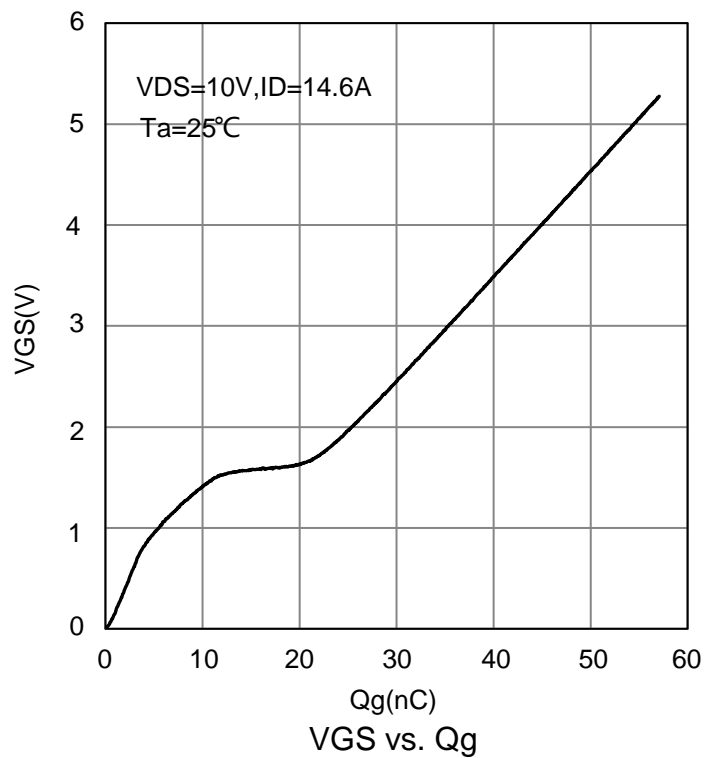
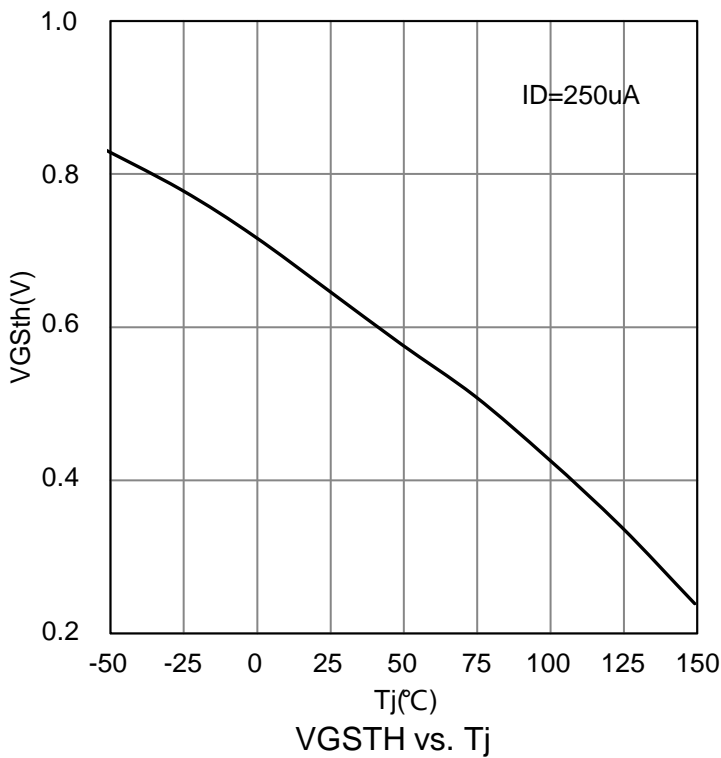
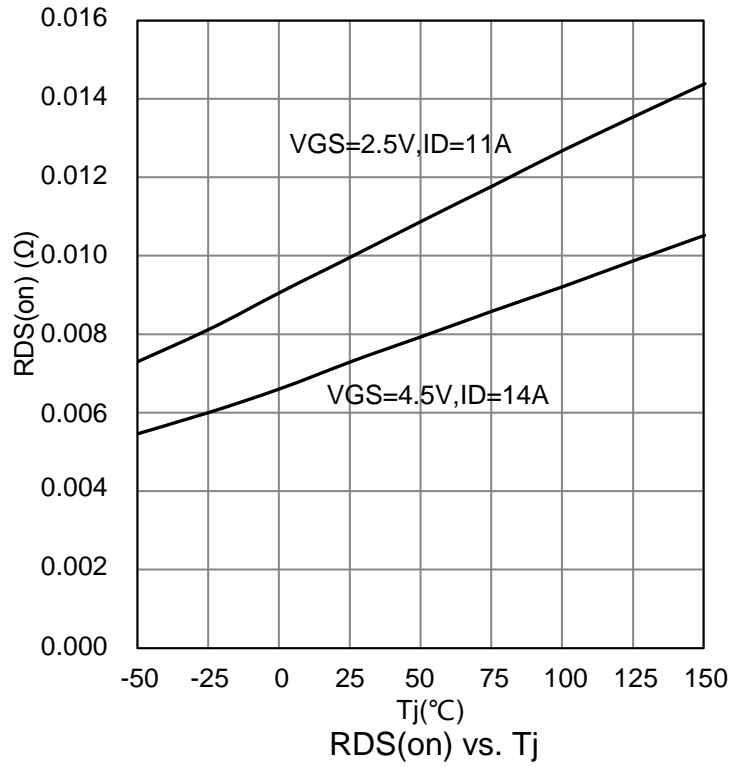
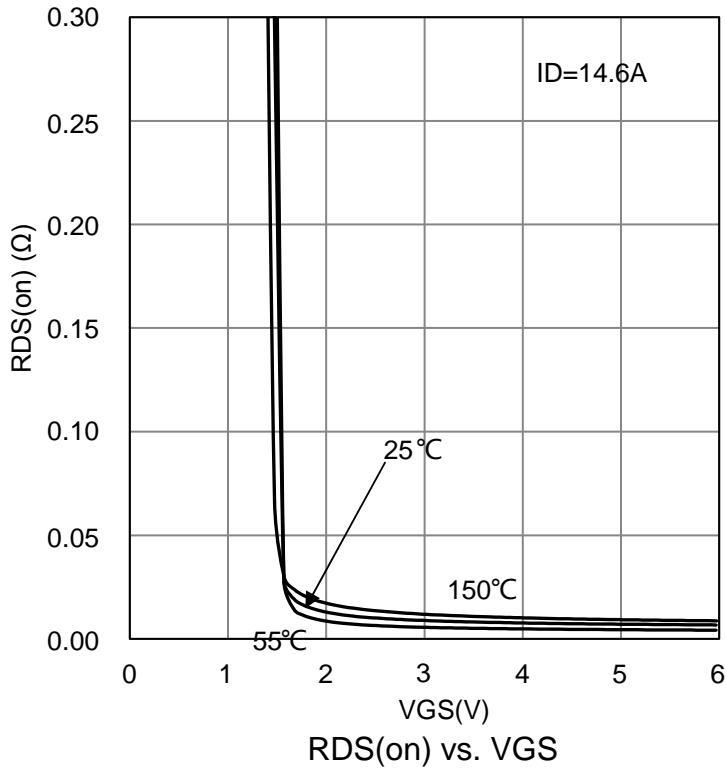
4.Pulse test: PW \leq 300us duty cycle \leq 2%.

5.Guaranteed by design, not subject to production testing.

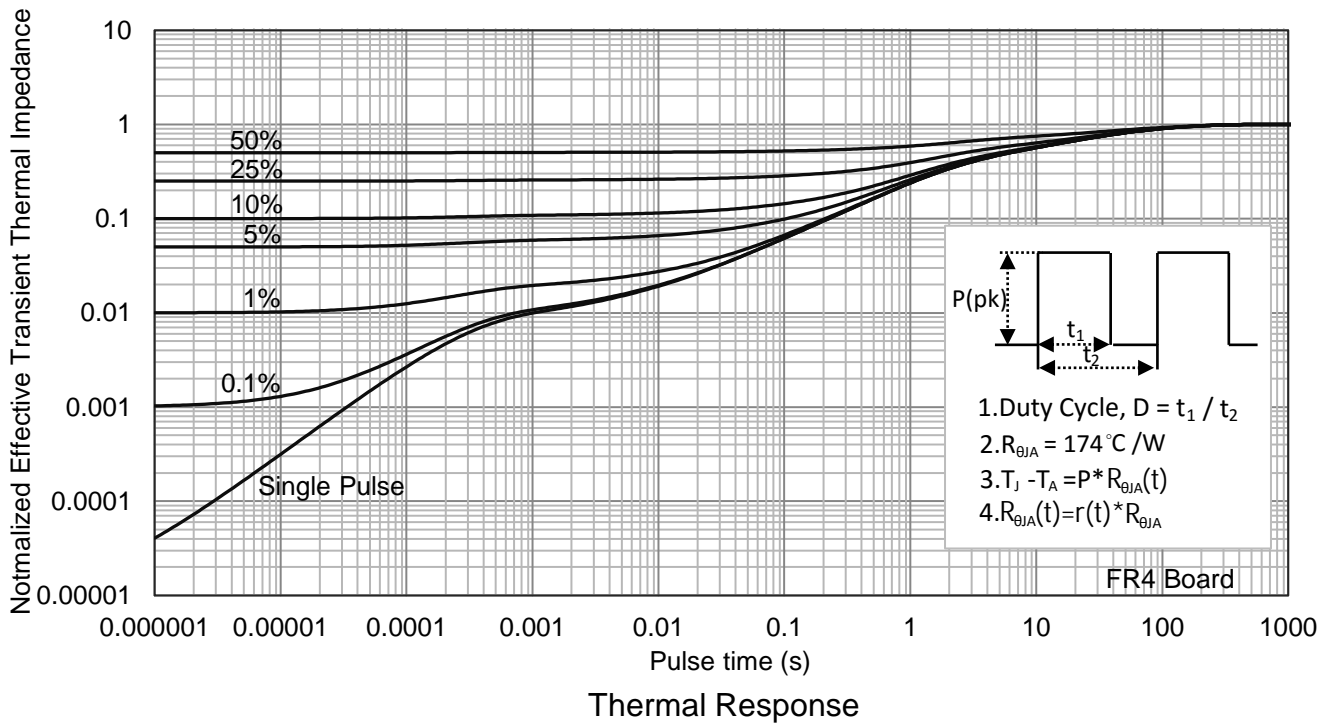
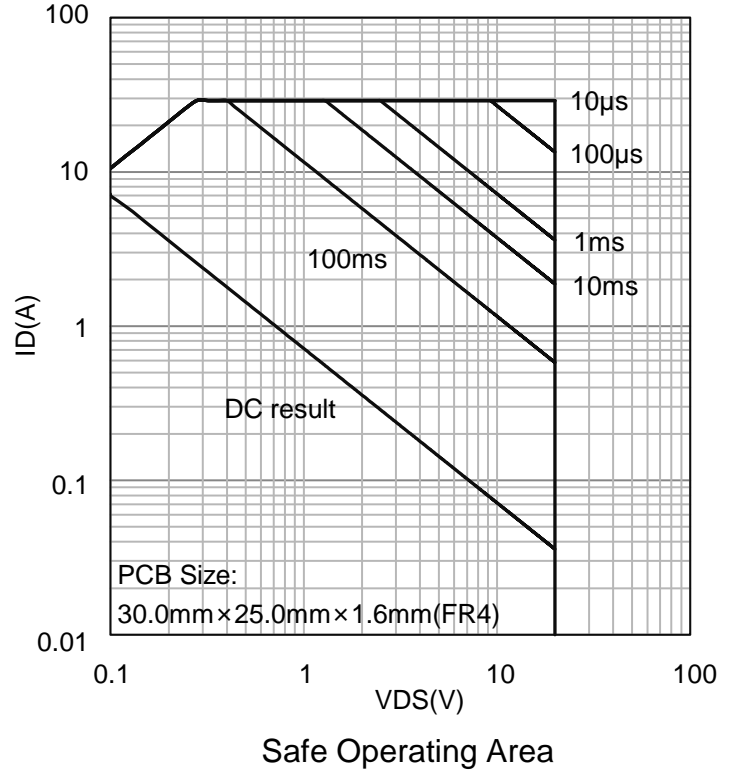
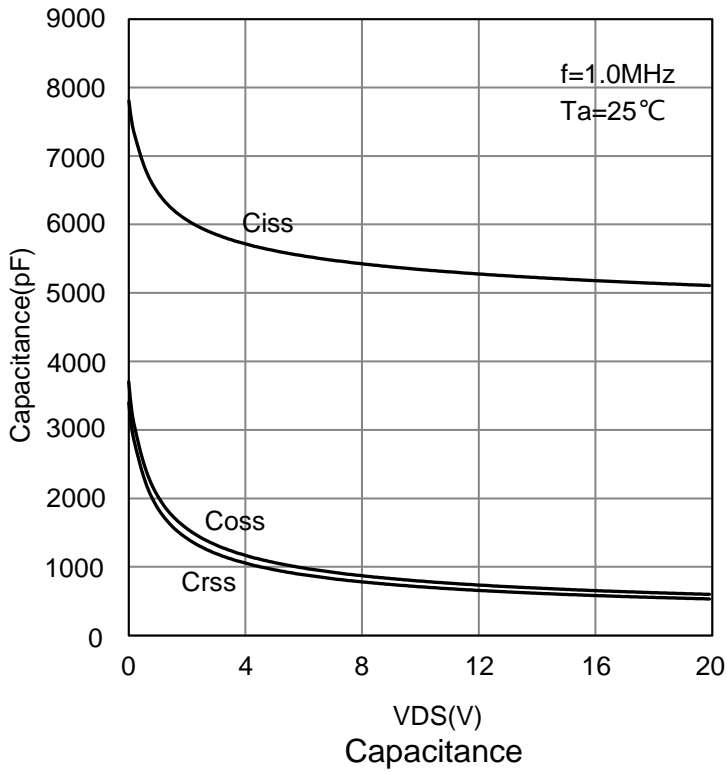
7. ELECTRICAL CHARACTERISTICS CURVES



7.ELECTRICAL CHARACTERISTICS CURVES(Con.)

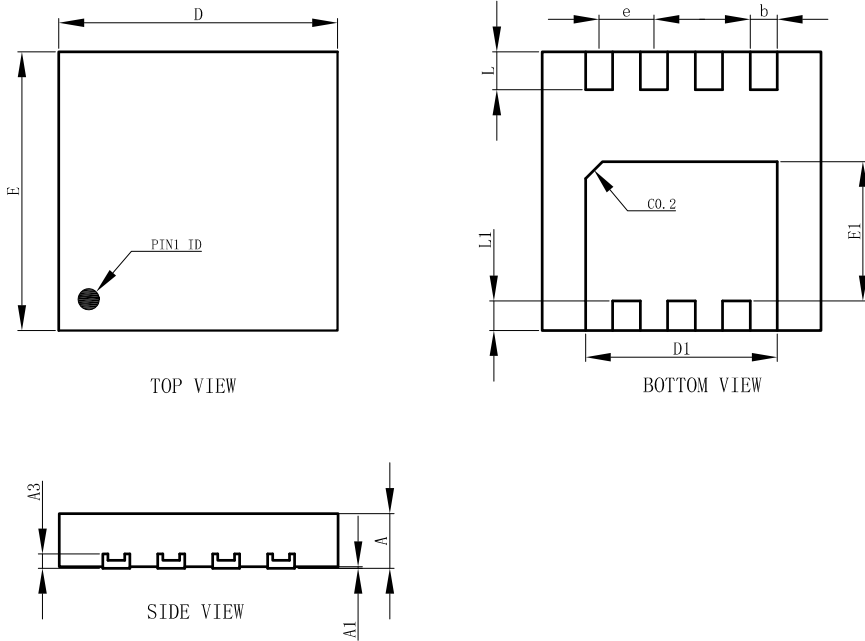


7.ELECTRICAL CHARACTERISTICS CURVES(Con.)



8. OUTLINE AND DIMENSIONS

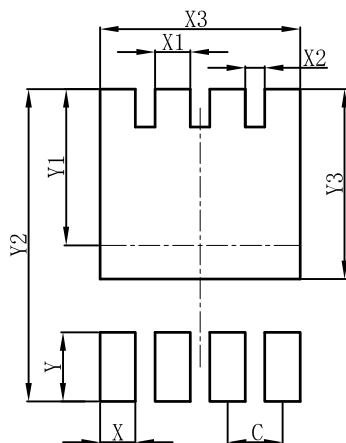
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DIM	MIN	NOR	MAX
A	0.60	0.65	0.70
A1	0.00	0.03	0.05
b	0.27	0.32	0.37
D	3.25	3.30	3.35
E	3.25	3.30	3.35
D1	2.22	2.27	2.32
E1	1.60	1.65	1.70
e	0.65BSC		
L	0.40	0.45	0.50
L1	0.30	0.35	0.40
A3	0.152REF.		
All Dimensions in mm			

9. SOLDERING FOOTPRINT

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DIM	(mm)
C	0.65
X	0.42
X1	0.42
X2	0.23
X3	2.37
Y	0.70
Y1	1.85
Y2	3.70
Y3	2.25

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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