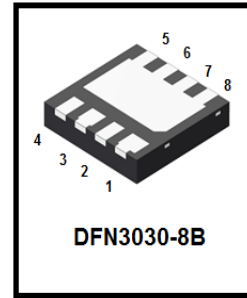


LP8233DT1AG

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.

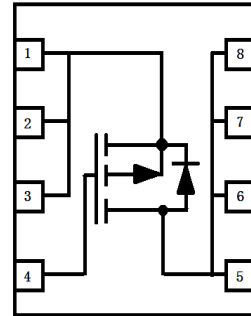


2. APPLICATIONS

- Load Switches
- DC/DC Conversion
- Motor Drives

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LP8233DT1AG	P33	3000/Tape&Reel



4. MAXIMUM RATINGS(Ta = 25°C)

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		VDS	-20	V
Gate-Source Voltage		VGS	±12	
Continuous Drain Current (Note1)	TA = 25°C	ID	-18	A
	TA = 70°C		-14	
Pulsed Drain Current (Note2)		IDM	-70	
Continuous Source Current (Diode Conduction) (Note1)		IS	-4.9	
Avalanche Current (VDS=20V,RL=25Ω,L = 0.1mH)		IAS	23.4	A
Avalanche Energy (VDS=20V,RL=25Ω, L = 0.1mH)		EAS	27.4	mJ
Power Dissipation (Note1)	TA = 25°C	PD	3.5	W
	TA = 70°C		2	
Operating Junction and Storage Temperature Range		TJ , Tstg	-55~+150	°C

5. THERMAL CHARACTERISTICS

Parameter		Symbol	Limits	Unit
Maximum Junction-to-Ambient (Note1)	t ≤ 10 sec	RθJA	35	°C/W
	Steady State		81	

- 1.Surface Mounted on 1" x 1" FR4 Board.
- 2.Pulse width limited by maximum junction temperature

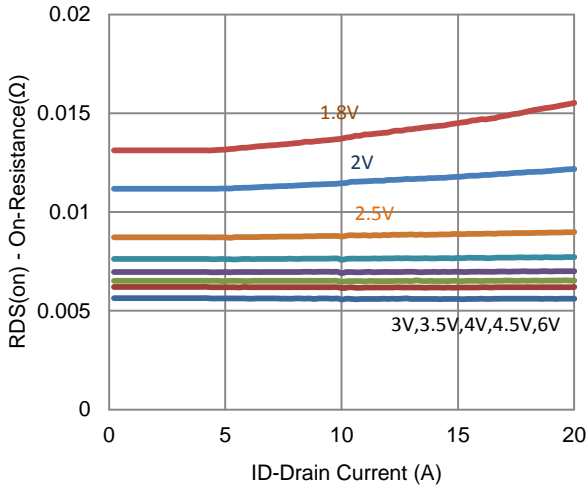
6. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

Characteristic	Symbol	Min.	Typ.	Max.	Unit	
Static						
Gate Threshold Voltage (VDS =VGS , ID =-250μA)	VGS(th)	-0.5	-0.7	-1.3	V	
Gate Leakage Current (VDS =0V, VGS =±12V)	IGSS	-	-	±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	μA	
On-State Drain Current (Note 3) (VDS = -5 V, VGS = -4.5 V)	ID(on)	-30	-	-	A	
Drain-Source On-Resistance(Note 3) (VGS = -4.5 V, ID = -14 A) (VGS = -2.5 V, ID = -11 A)	RDS(ON)	-	6.5 9.5	8.5 12	mΩ	
Forward Transconductance (Note 3) (VDS = -15 V, ID = -14.6 A)	gfs	-	15	-	S	
Diode Forward Voltage (Note 3) (IS = -2.5 A, VGS = 0 V)	VSD	-	-0.69	-	V	
Dynamic (Note 4)						
Total Gate Charge	(VDS = -10 V, VGS = -4.5 V, ID = -14.6 A)	Qg	-	64.8	-	nC
Gate-Source Charge		Qgs	-	10.5	-	
Gate-Drain Charge		Qgd	-	21	-	
Turn-On Delay Time	(VDS = -10 V, RL = 0.7 Ω, ID = -14.6 A, VGEN = -4.5 V, RGEN = 6 Ω)	td(on)	-	20	-	ns
Rise Time		tr	-	43	-	
Turn-Off Delay Time		td(off)	-	238	-	
Fall Time		tf	-	128	-	
Input Capacitance	(VDS = -15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	5310	-	pF
Output Capacitance		Coss	-	784	-	
Reverse Transfer Capacitance		Crss	-	804	-	
Gate-Resistance (VGS = 0 V, VDS=0V,f=1MHz)	Rg	-	2.7	-	Ω	

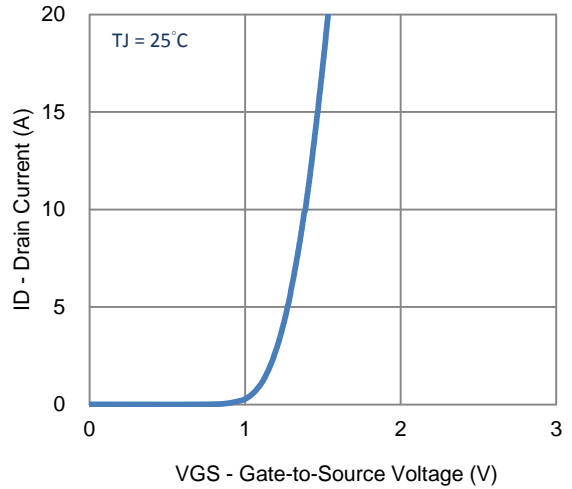
3.Pulse test: PW ≤ 300us duty cycle ≤ 2%.

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

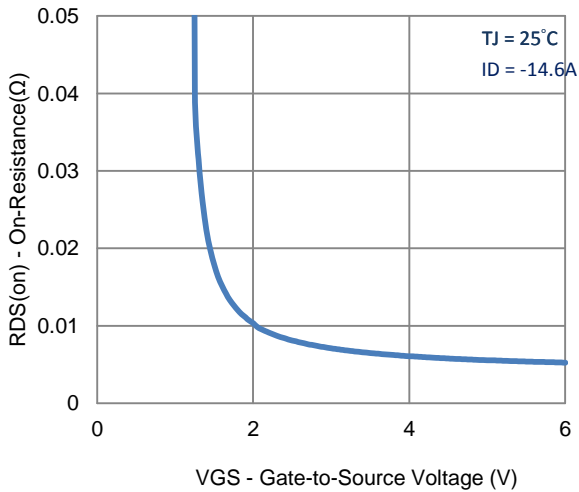
7. ELECTRICAL CHARACTERISTICS CURVES



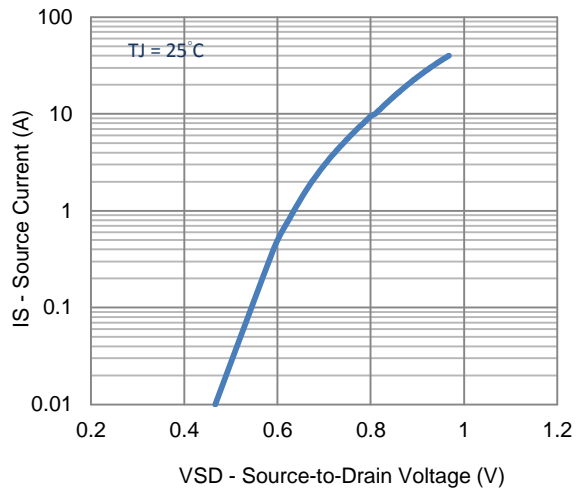
1. On-Resistance vs. Drain Current



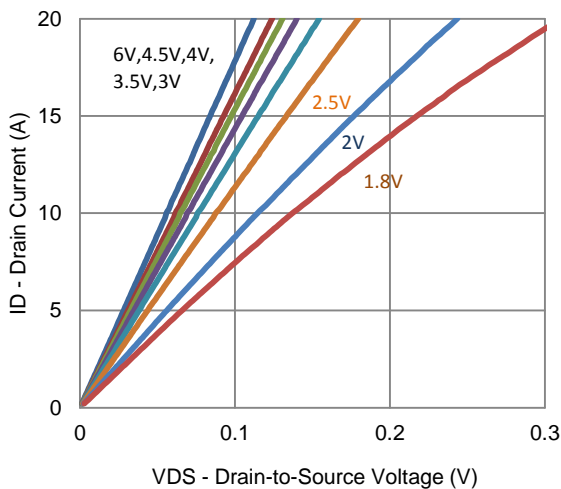
2. Transfer Characteristics



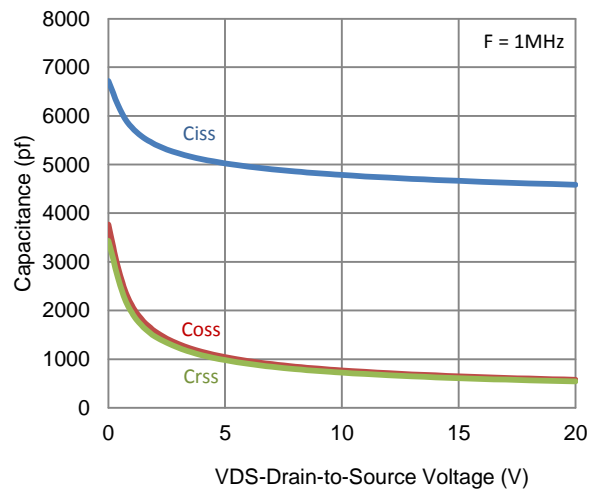
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage

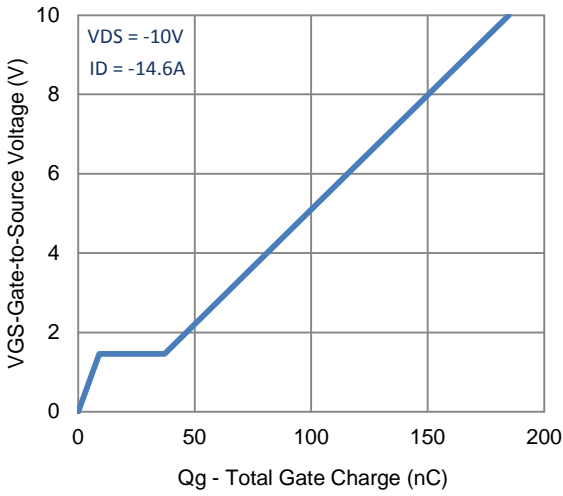


5. Output Characteristics

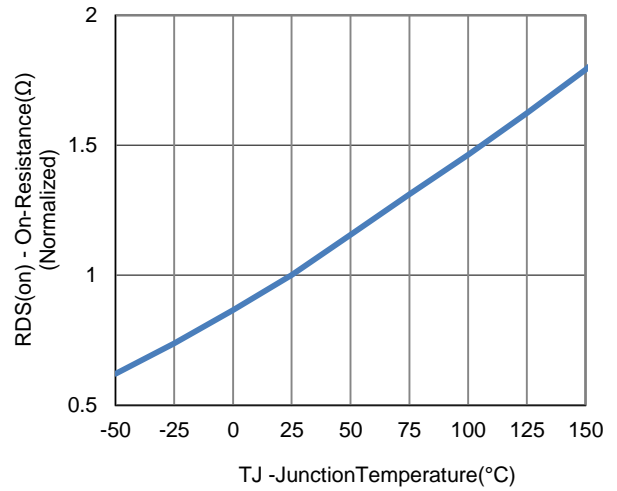


6. Capacitance

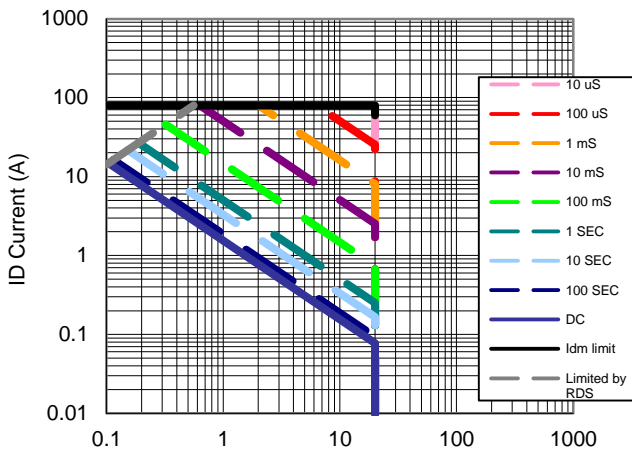
7. ELECTRICAL CHARACTERISTICS CURVES(Con.)



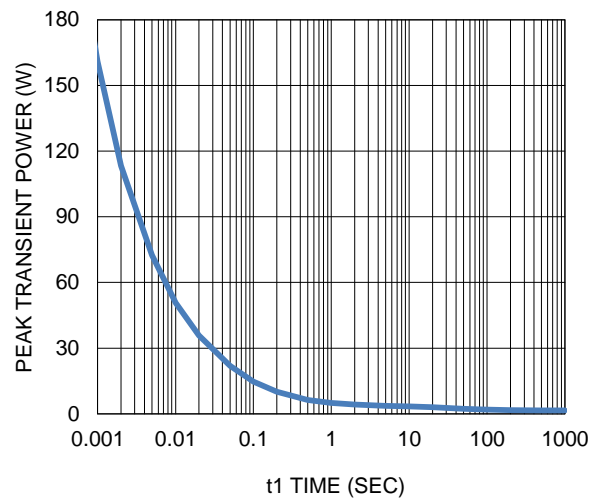
7. Gate Charge



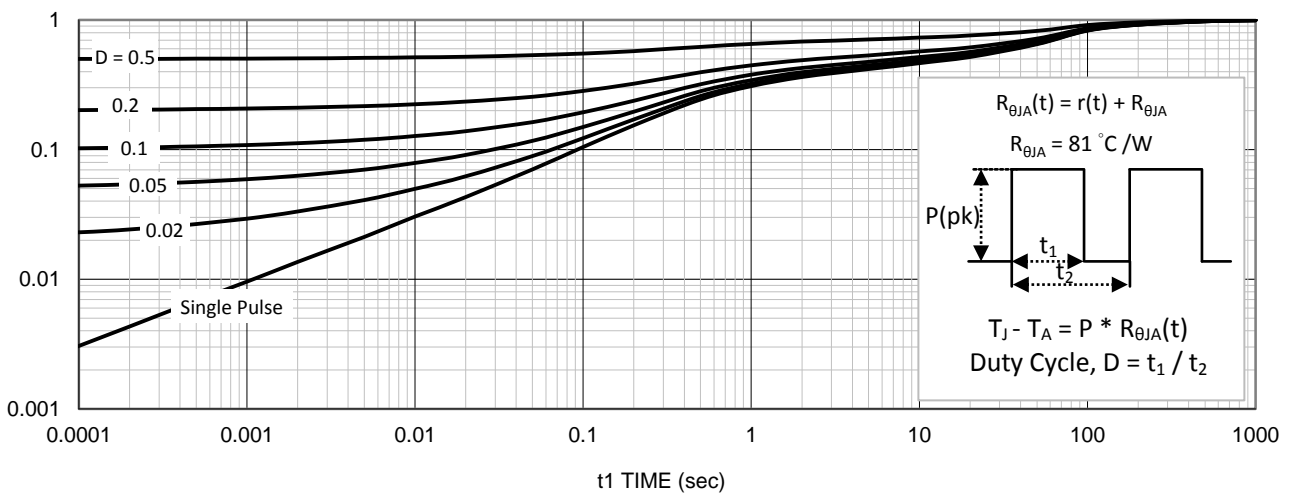
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area

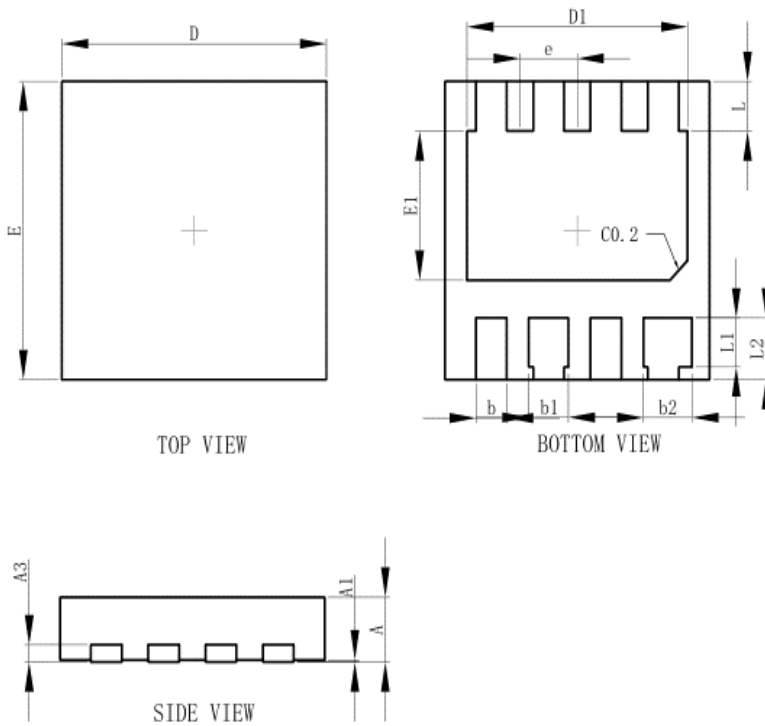


10. Single Pulse Maximum Power Dissipation



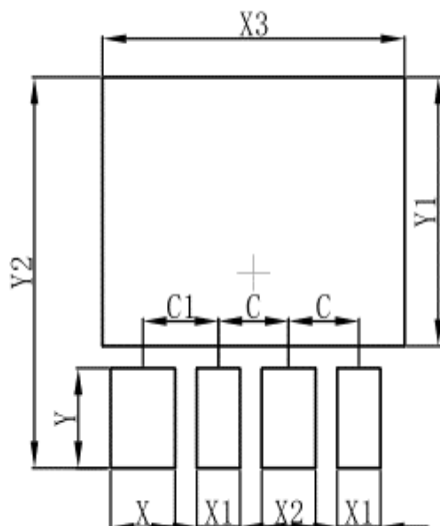
11. Normalized Thermal Transient Junction to Ambient

8. OUTLINE AND DIMENSIONS



DFN3030-8B			
Dim	Min	Nor	Max
A	0.60	0.65	0.70
A1	0.00	0.03	0.05
b	0.30	0.35	0.40
b1	0.40	0.45	0.50
b2	0.50	0.55	0.60
D	2.95	3.00	3.05
E	2.95	3.00	3.05
D1	2.45	2.50	2.55
E1	1.45	1.50	1.55
e	0.65BSC		
L	0.45	0.50	0.55
L1	0.44	0.49	0.54
L2	0.57	0.62	0.67
A3	0.152REF.		
All Dimensions in mm			

9. SOLDERING FOOTPRINT



DFN3030-8B	
Dim	(mm)
C	0.65
C1	0.70
X	0.60
X1	0.40
X2	0.50
X3	2.80
Y1	2.20
Y2	3.20
Y	0.82