

PB8204D

20V P-Channel (D-S) MOSFET

1. FEATURES

- VDS = -20V
RDS(ON) ≤ 4.6mΩ, VGS@-4.5V, IDS@-7A
RDS(ON) ≤ 7mΩ, VGS@-2.5V, IDS@-5.6A
- 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.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

2. APPLICATIONS

- Load Switches
- DC/DC Conversion
- Motor Drives

3. DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
PB8204D	P20	2000/Tape&Reel

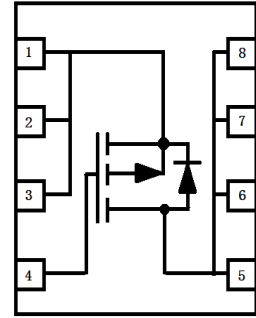
4. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit	
Drain-Source Voltage	VDS	-20	V	
Gate-Source Voltage	VGS	± 12		
Continuous Drain Current (Note1)	ID	-8.8	A	
Pulsed Drain Current (Note2)	IDM	-40		
Continuous Source Current (Diode Conduction) (Note1)	IS	-5		
Power Dissipation (Note1)	PD	TA = 25°C	3	W
		TA = 70°C	1.9	
Avalanche Current	IAS	31	A	
Avalanche Energy(L=0.1mH)	EAS	48.05	mJ	
Operating Junction and Storage Temperature Range	TJ , Tstg	-55~+150	°C	
Maximum Junction-to-Ambient (Note1)	RqJA	t ≤ 10 sec	40	°C/W
		Steady State	90	

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



DFN3333-8A



5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

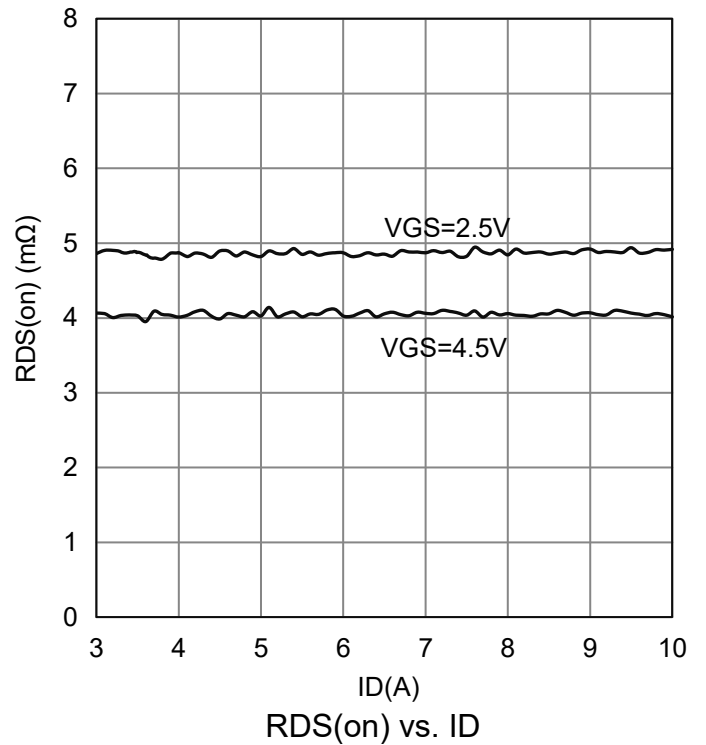
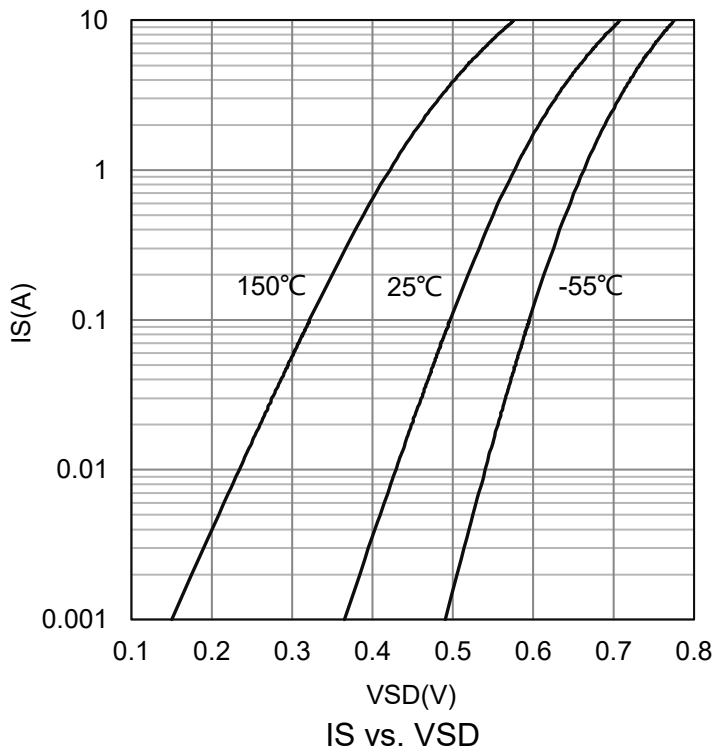
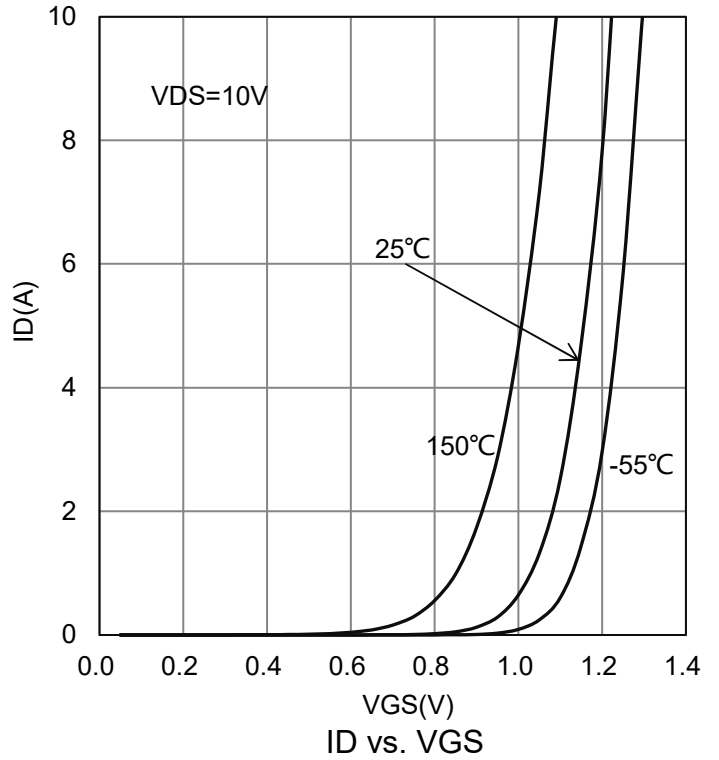
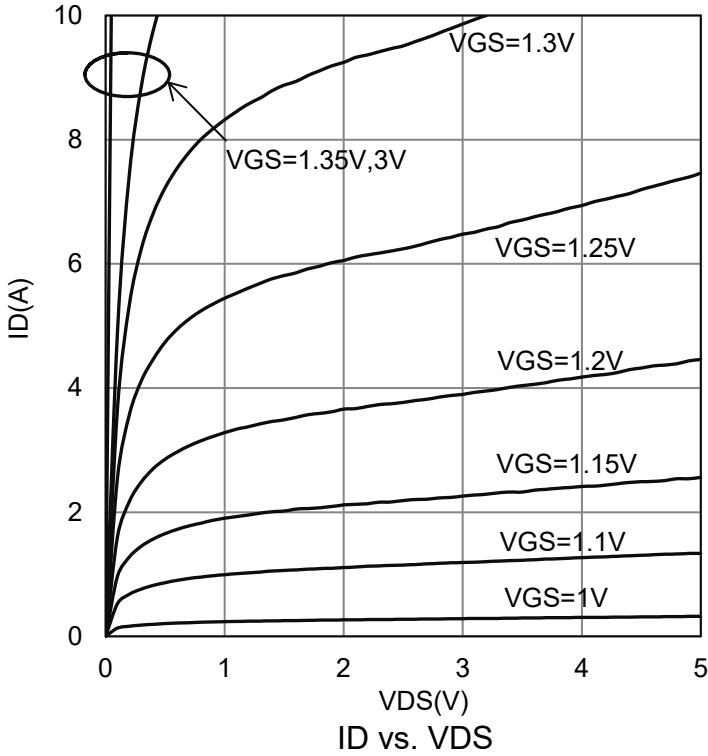
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Static					
Drain-Source Breakdown Voltage (VGS = 0V, ID = -250 μ A)	V(BR)DSS	-20	-	-	V
Gate Threshold Voltage (VDS = VGS, ID = -250 μ A)	VGS(th)	-0.4	-	-	V
Gate Leakage Current (VDS = 0V, VGS = \pm 12V)	IGSS	-	-	\pm 100	nA
Zero Gate Voltage Drain Current (VDS = -16V, VGS = 0V)	IDSS	-	-	-1	μ A
Drain-Source On-Resistance (VGS = -4.5 V, ID = -7 A)	RDS(ON) (Note 3)	-	-	4.6	m Ω
Drain-Source On-Resistance (VGS = -2.5 V, ID = -5.6 A)		-	-	7	
Diode Forward Voltage (Note 3) (IS = -2.5 A, VGS = 0V)	VSD	-	-	-1.3	V
Dynamic (Note 4)					
Total Gate Charge	(VDS = -10 V, VGS = -4.5 V, ID = -7 A)	Qg	-	80	nC
Gate-Source Charge		Qgs	-	12.4	
Gate-Drain Charge		Qgd	-	16.6	
Turn-On Delay Time	(VDS = -10 V, RL = 1.4 Ω , ID = -7 A, VGEN = -4.5 V, RGEN = 6 Ω)	td(on)	-	6	ns
Rise Time		tr	-	12	
Turn-Off Delay Time		td(off)	-	85	
Fall Time		tf	-	35	
Input Capacitance	(VDS = -15 V, VGS = 0 V, f = 1 MHz)	Ciss	-	7042	pF
Output Capacitance		Coss	-	647	
Reverse Transfer Capacitance		Crss	-	584	
Gate Resistance (VDS=0V, VGS=0V, f=1.0MHz)	Rg	-	5.6	-	Ω

3. Pulse test: PW \leq 300 μ s, duty cycle \leq 2%.

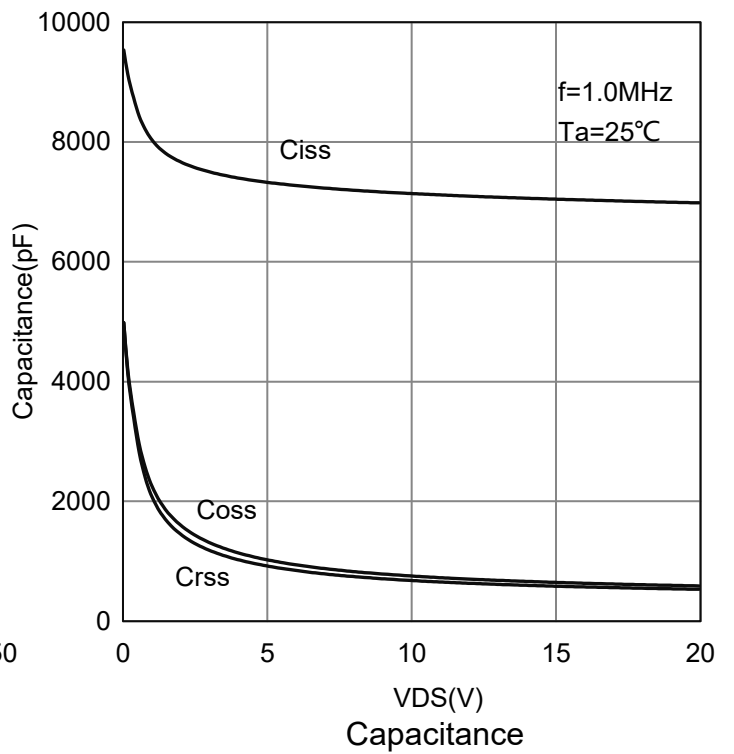
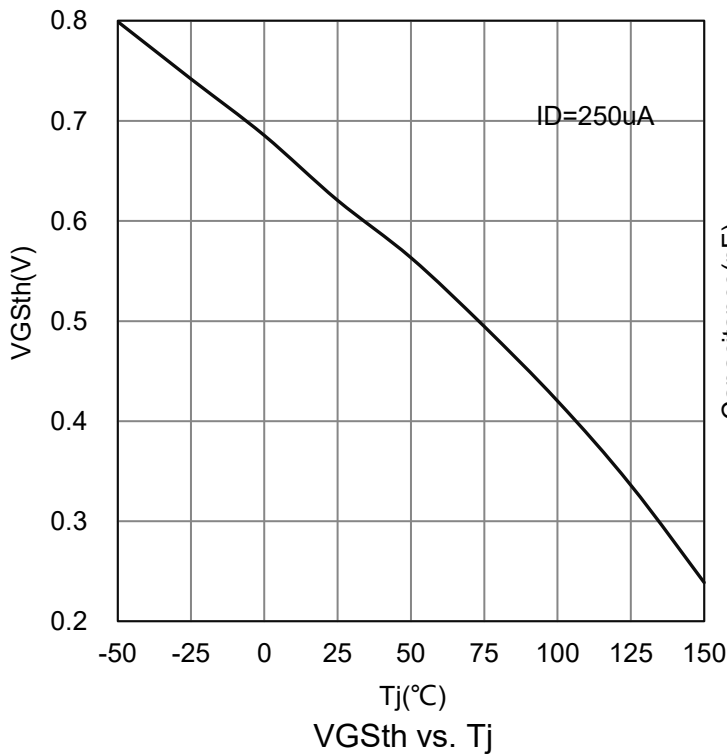
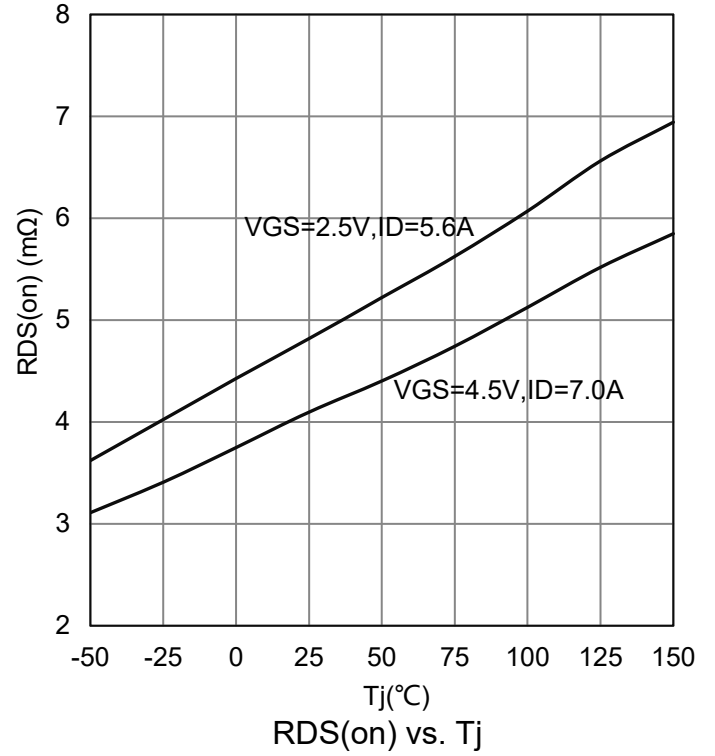
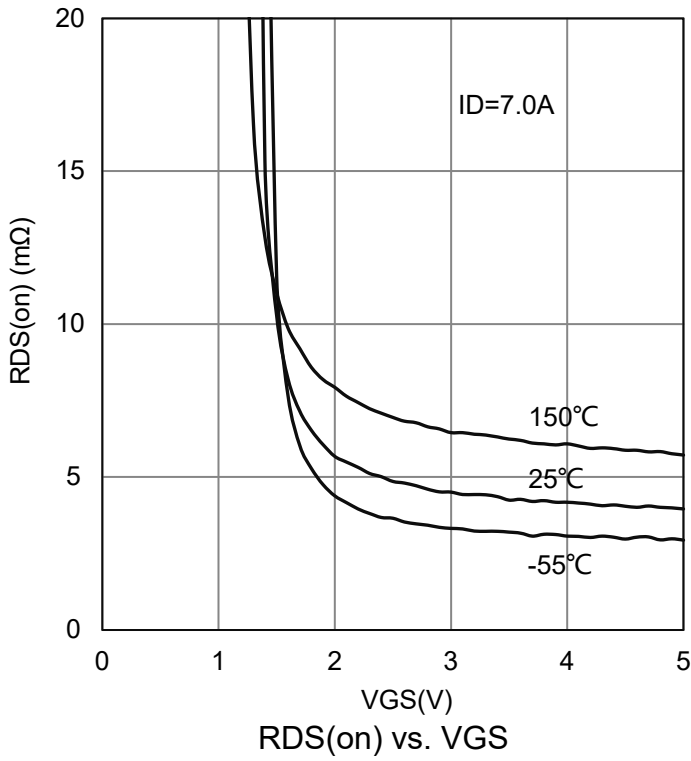
4. Guaranteed by design, not subject to production testing.



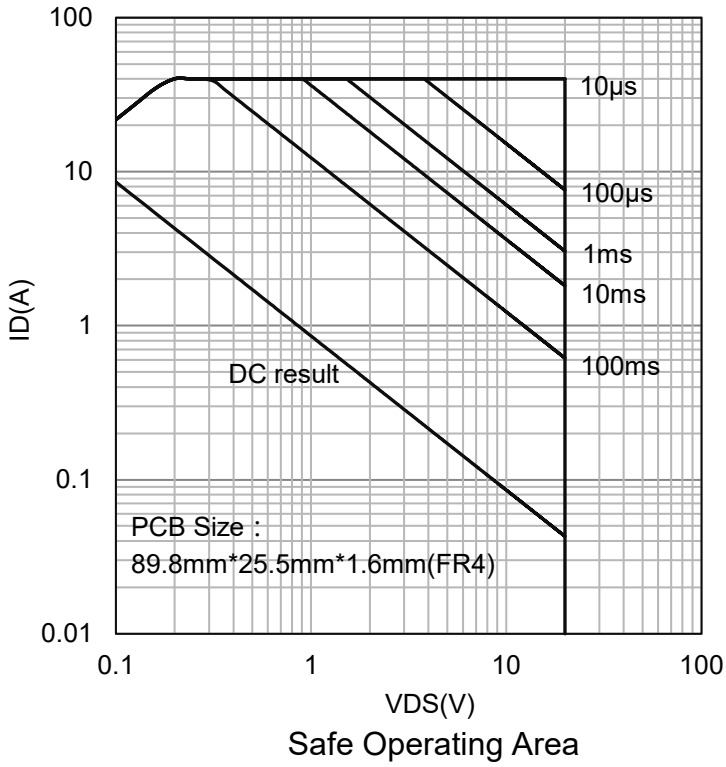
6. ELECTRICAL CHARACTERISTICS CURVES

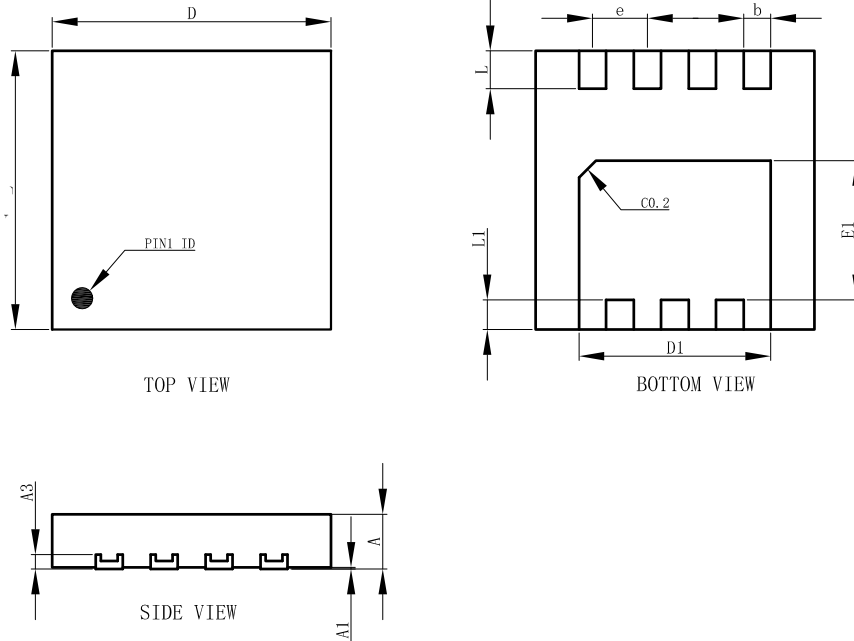


6.ELECTRICAL CHARACTERISTICS CURVES(Con.)

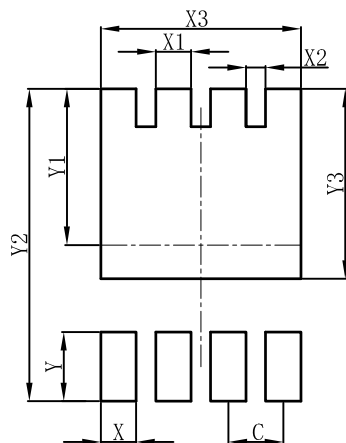


6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



7. OUTLINE AND DIMENSIONS


DFN3333-8A			
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			

8. SOLDERING FOOTPRINT


DFN3333-8A	
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

