

/ Descriptions

PDFN5×6 N
N-Channel MOSFET in a PDFN5×6 Plastic Package.

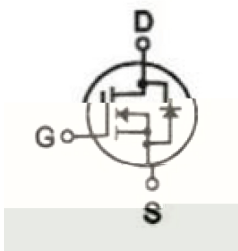
/ Features

V_{DS}(V)=30 V I_D=80A
R_{DS(ON)}@10V≤4.5mΩ(Typ.3.7mΩ)
R_{DS(ON)}@4.5V≤6mΩ(Typ.5.1mΩ)
HF Product.

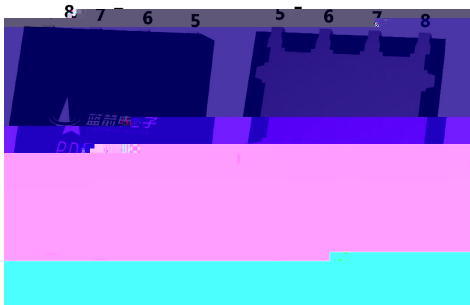
/ Applications

MB/NB/UMPC/VGA Buck -
Battery Management,High Frequency Point-of-Load Synchronous Buck Converter for MB/NB/UMPC/VGA,Networking DC-DC Power System,Load Switch.

/ Equivalent Circuit



/ Pinning



PIN1、2、3: S PIN4: G PIN5、6、7、8: D

Pin	极性
1	S
2	S
3	S
4	G
5	D
6	D
7	D
8	D

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings($T_c=25^\circ\text{C}$)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	30	V
Drain Current - Continuous		I _D	80	A
Drain Current - Continuous		I _D (T _c =70°C)	36	A
Drain Current – Pulsed		I _{DM}	168	A
Gate-Source Voltage		V _{GS}	±20	V
Power Dissipation		P _D (T _c =25°C)	45	W
Single Pulse Avalanche Energy(L=0.5mH)		E _{AS}	274	mJ
Avalanche Current(L=0.5mH)		I _{AS}	28	A
Junction and Storage Temperature Range		T _j , T _{stg}	-55 to 150	
Thermal resistance, junction - ambient	t ≤ 10s	R _{θJA}	25	/ W
	Steady-State		55	
Thermal resistance, junction - case	Steady-State	R _{θJC}	2.8	

/ Electrical Characteristics($T_a=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu\text{A}, V_{GS}=0\text{V}$	30	33		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30\text{V}, V_{GS}=0\text{V}$			1.0	μA
Gate-Body leakage current	I_{GSS}	$V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	1	1.5	3	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}, I_D=20\text{A}$		3.7	4.5	m Ω
		$V_{GS}=4.5\text{V}, I_D=10\text{A}$		5.1	6	
Diode Forward Voltage	V_{SD}	$I_S=1\text{A}, V_{GS}=0\text{V}$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25\text{V}, V_{GS}=0\text{V}, f=1.0\text{MHz}$		2500		pF
Output Capacitance	C_{oss}			280		
Reverse Transfer Capacitance	C_{rss}			210		
Gate resistance	R_g	$V_{GS}=0\text{V}, V_{DS}=0\text{V}, f=1\text{MHz}$		3.3		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10\text{V}, V_{DS}=15\text{V}, I_D=20\text{A}$		30		nC
Total Gate Charge	$Q_{g(4.5V)}$			13.5		
Gate Source Charge	Q_{gs}			5.5		
Gate Drain Charge	Q_{gd}			3.5		



/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=15V$ $R_L=0.75\ \Omega$ $R_{GEN}=3\ \Omega$		8		ns
Turn-On Rise Time	t_r			3		
Turn-Off Delay Time	$t_{d(off)}$			34		
Turn-Off Fall Time	t_f			5.5		

/ Electrical Characteristic Curve

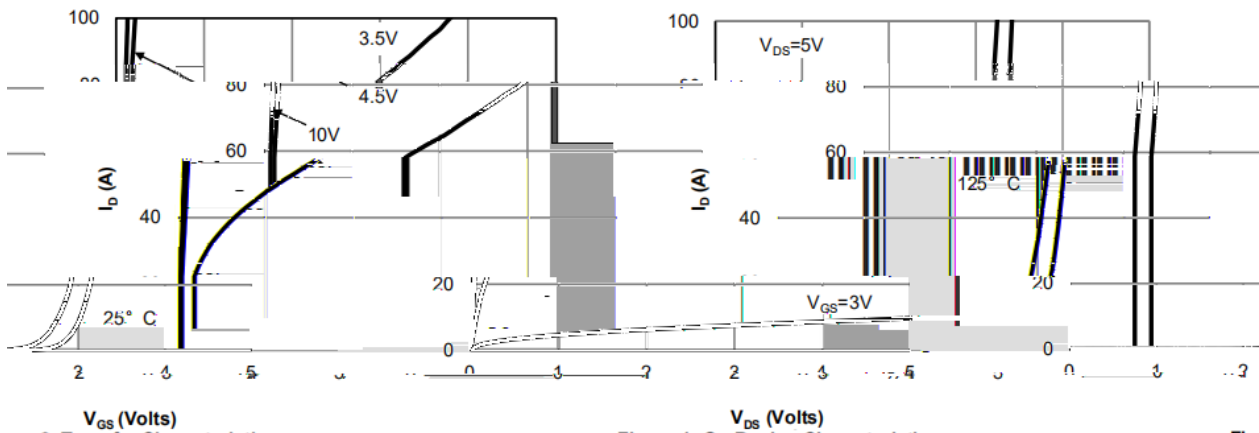


Figure 2: Transfer Characteristics

Figure 1: On-Region Characteristics

Fig

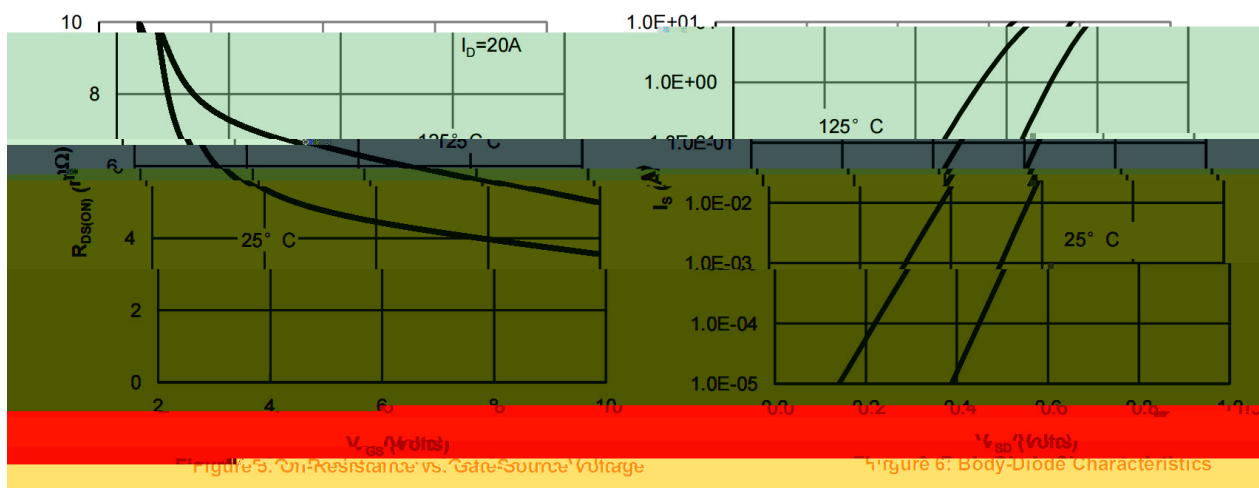
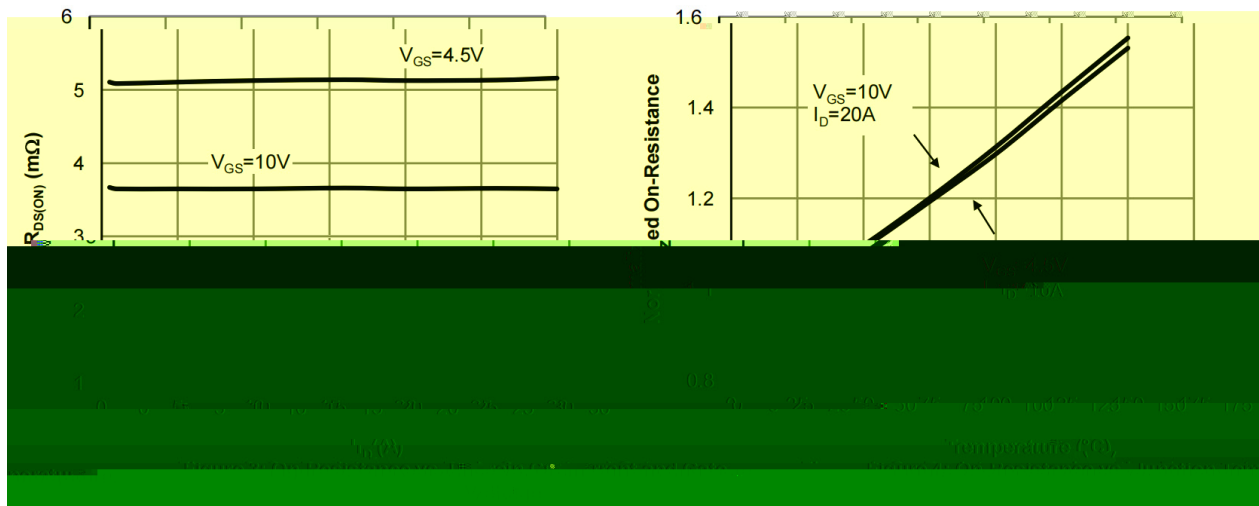
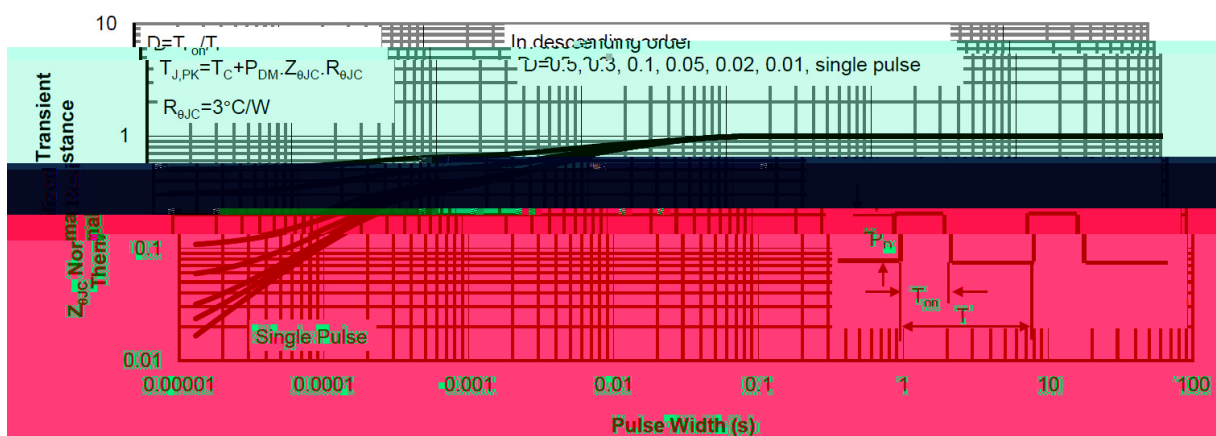
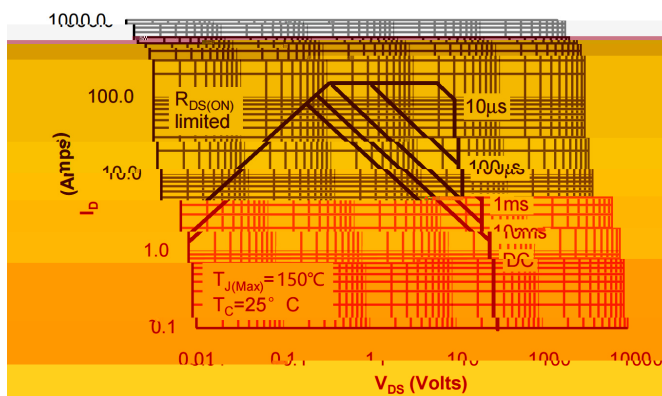
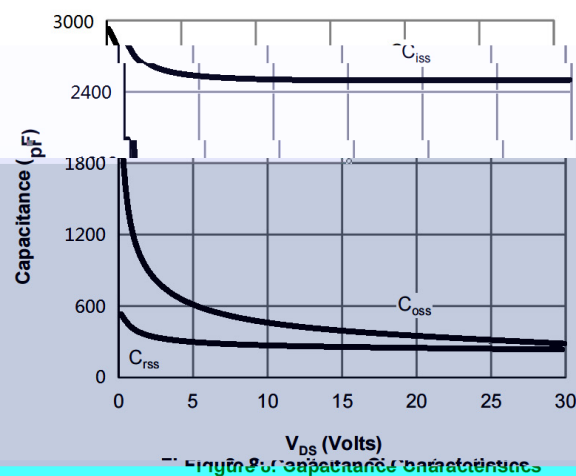
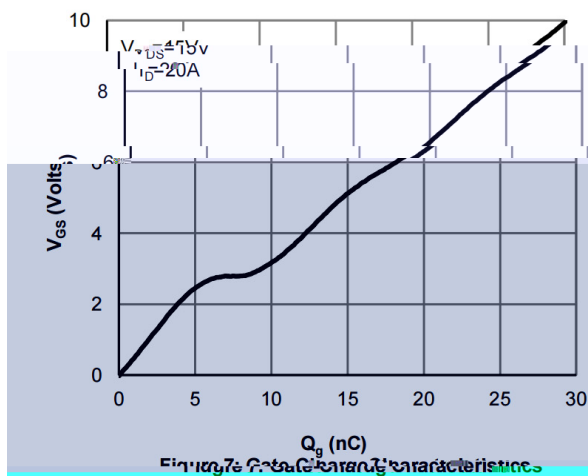


Figure 5: On-Resistance vs. Drain Current

Figure 6: Body-Diode Characteristics

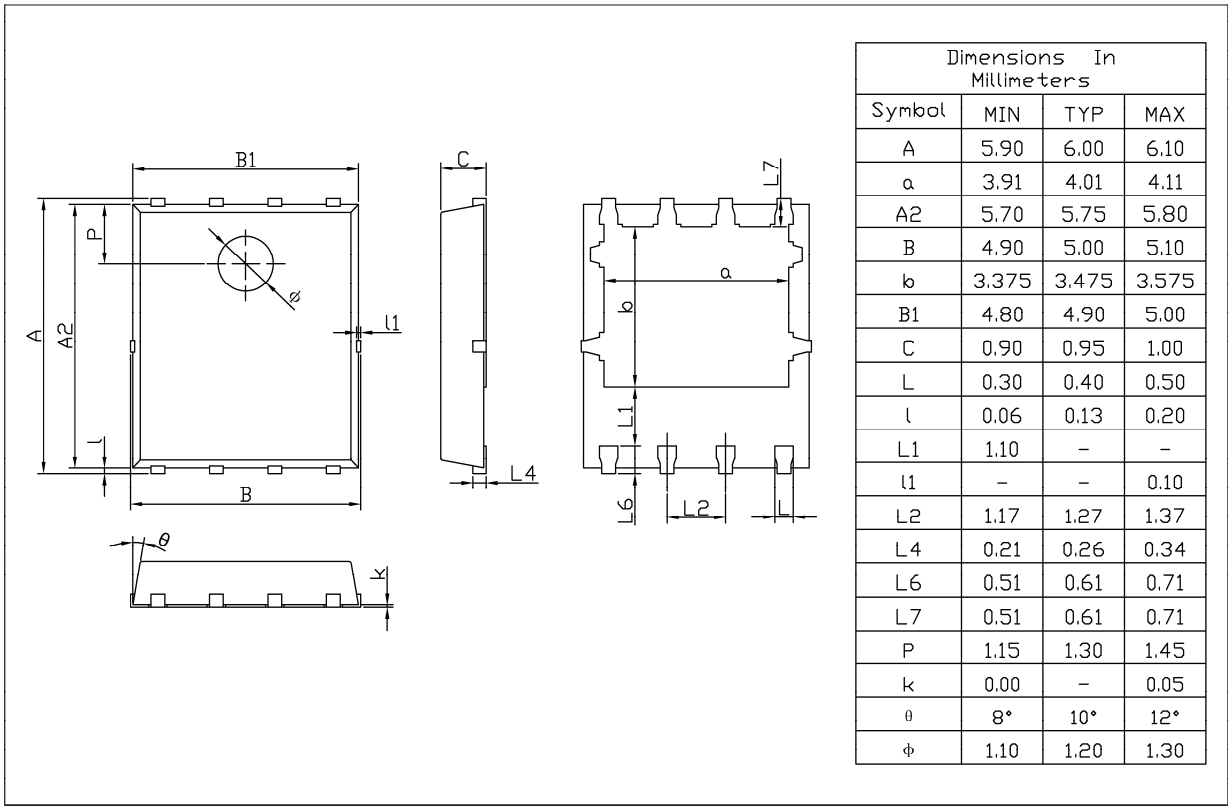
/ Electrical Characteristic Curve



/ Package Dimensions

PDFN5 X6

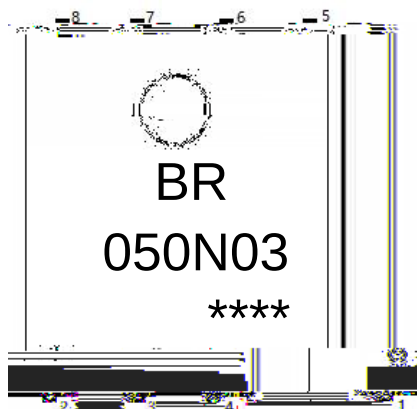
Unit:mm



Rev.02 202510



/ Marking Instructions



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050N03

Note

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Company Code

050N03

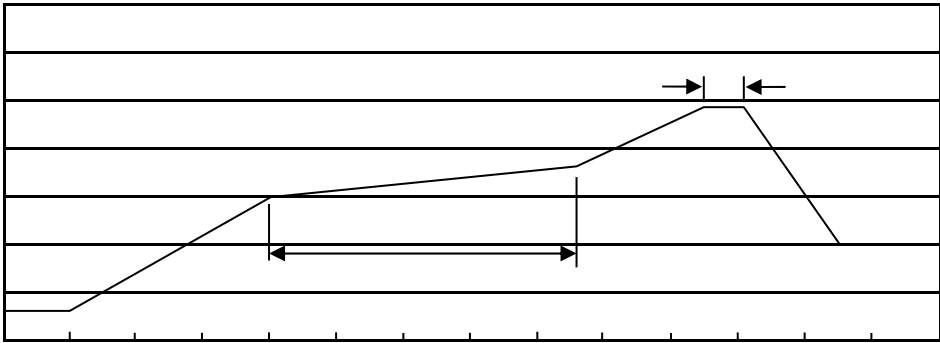
Product Type Code

****:

Lot No. Code, code change with Lot No.



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- Note:
- 1

150 180

60 90sec;

1.Preheating:150~180 , Time:60~90sec.
- 2

245±5

5±0.5sec;

2.Peak Temp.:245±5 , Duration:5±0.5sec.
- 3

2 10

/sec.

3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
PDFN5×6	5,000	2	10,000	6	60,000	13"×12	360×360×50	380×335×366

/ Notices

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