

/ Descriptions

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

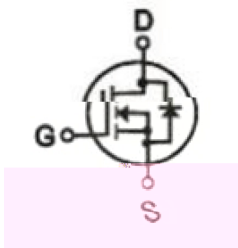
/ Features

$V_{DS} (V) = 60V$ $I_D = 43A (V_{GS} = \pm 20V)$
 $R_{DS(ON)}@10V \leq 13m\Omega (Typ. 11.5m\Omega)$
 $R_{DS(ON)}@4.5V \leq 18m\Omega (Typ. 15.5m\Omega)$
HF Product.

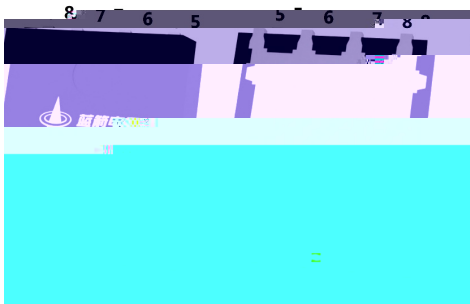
/ Applications

DC-DC
Secondary Side Synchronous Rectification, DC-DC Converter, Motor Control, Load Switching.

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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	60	V
Continuous Drain Current		I _D	43	A
Pulsed Drain Current		I _{DM}	111	A
Gate-Source Voltage		V _{GS}	± 20	V
Power Dissipation		P _D (T _c =25 °C)	43	W
Avalanche energy(L=0.5mH)		E _{AS}	200	mJ
Avalanche Current(L=0.5mH)		I _{AS}	20	A
Junction and Storage Temperature Range		T _j , T _{stg}	-55 to 150	
Maximum Junction-to-Ambient	t ≤ 10s	R _{θJA}	25	/ W
	Steady-State		60	
Maximum Junction-to-Case	Steady-State	R _{θJC}	2.9	

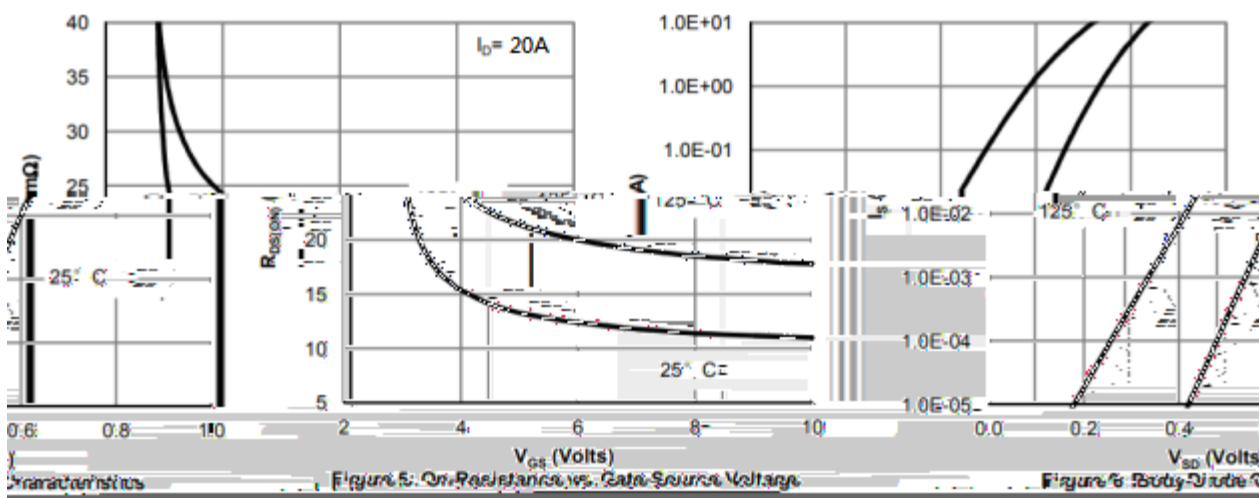
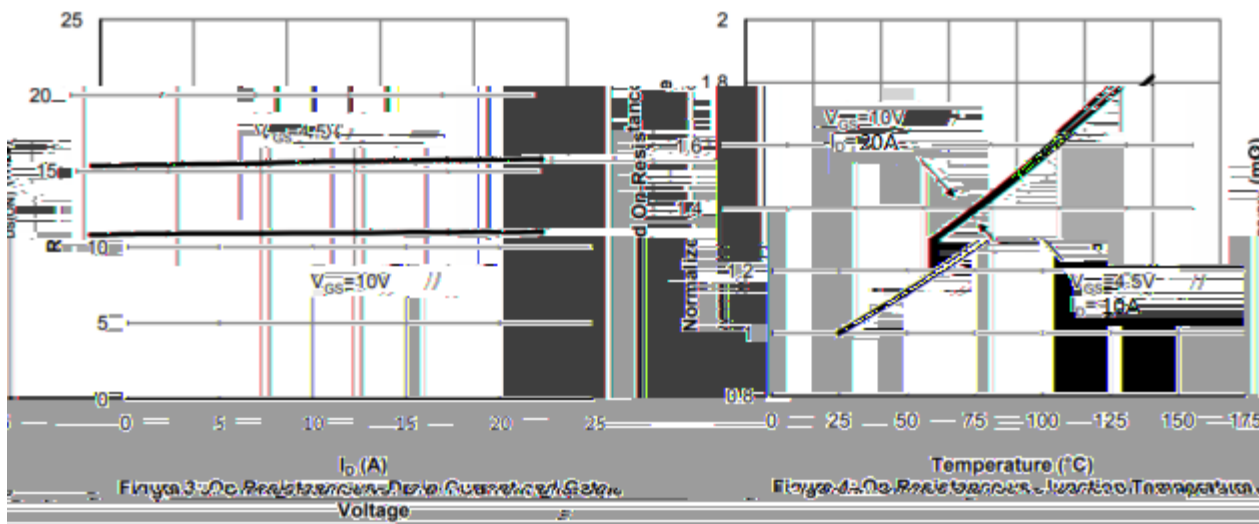
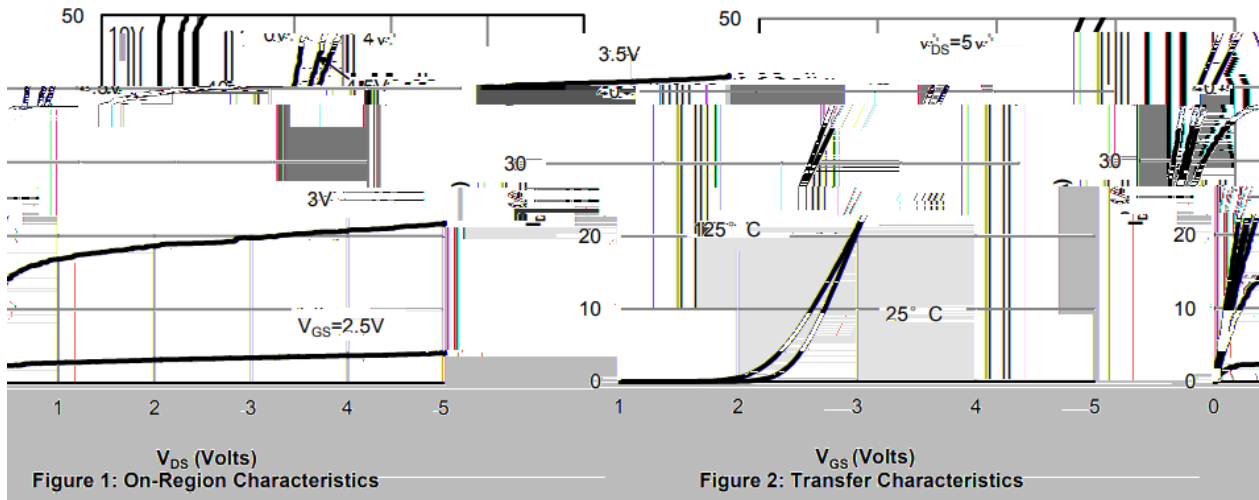
/ Electrical Characteristics($T_a=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0\text{V}$ $I_D=250\mu\text{A}$	60	64		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{V}$ $V_{GS}=0\text{V}$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20\text{V}$ $V_{DS}=0\text{V}$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu\text{A}$	1.0	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}$ $I_D=20\text{A}$		11.5	13	$\text{m}\Omega$
		$V_{GS}=4.5\text{V}$ $I_D=10\text{A}$		15.5	18	$\text{m}\Omega$
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0\text{V}$ $I_S=1\text{A}$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25\text{V}$ $V_{GS}=0\text{V}$ $f=1.0\text{MHz}$		1010		pF
Output Capacitance	C_{oss}			250		
Reverse Transfer Capacitance	C_{rss}			280		
Gate resistance	R_g	$V_{GS}=0\text{V}$ $V_{DS}=0\text{V}$ $f=1\text{MHz}$		2.3		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10\text{V}$ $V_{DS}=30\text{V}$ $I_D=13\text{A}$		13.5		nC
Total Gate Charge	$Q_{g(4.5V)}$			6.5		
Gate Source Charge	Q_{gs}			2.5		
Gate Drain Charge	Q_{gd}			3.0		

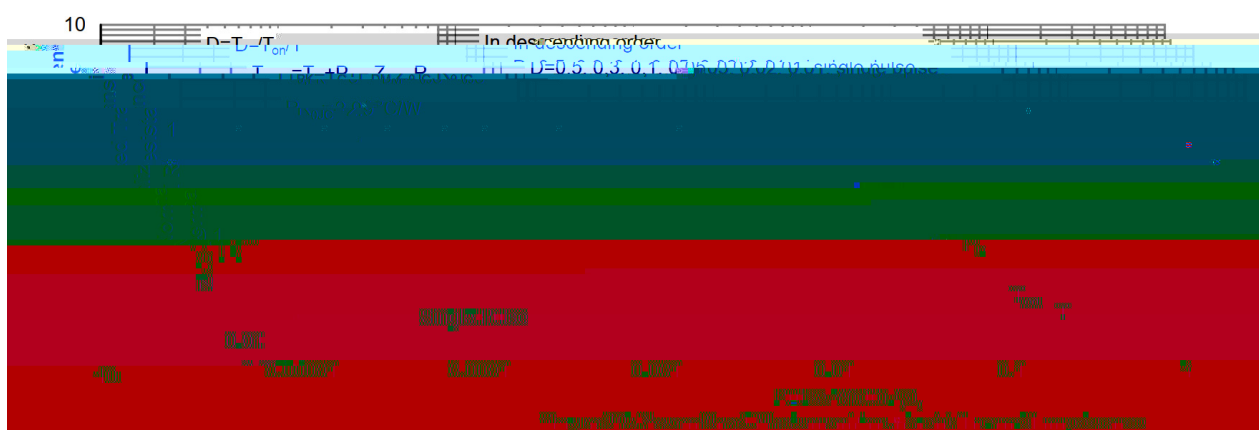
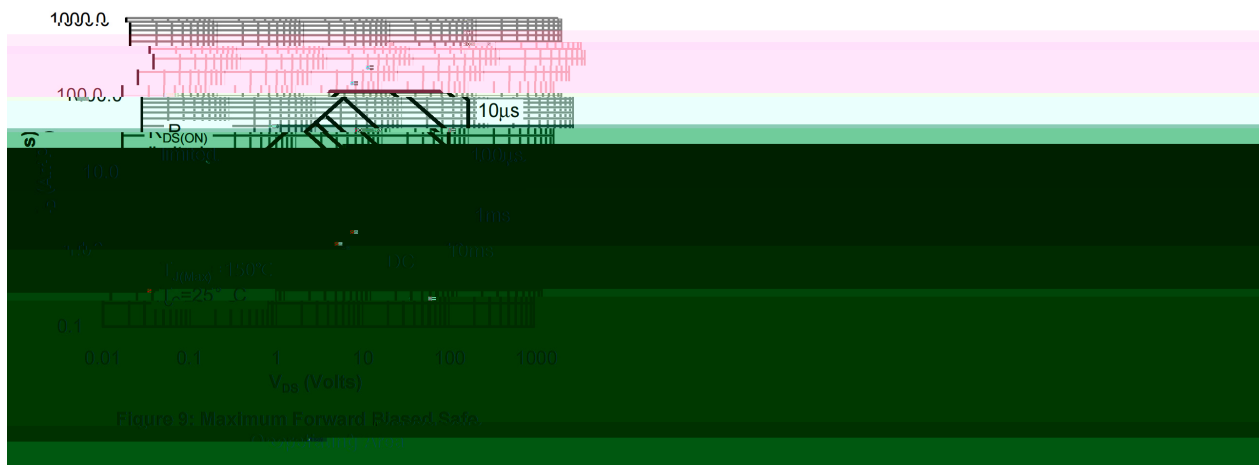
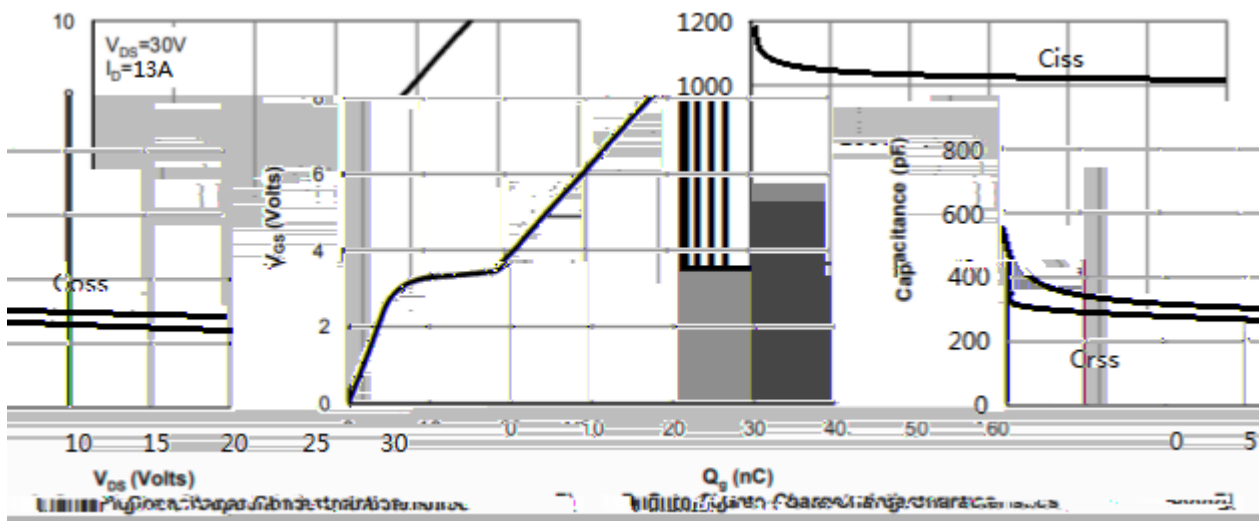
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $R_L=2.3\Omega$ $V_{DS}=30V$ $R_{GEN}=3\Omega$		5		ns
Turn-On Rise Time	t_r			3		
Turn-Off Delay Time	$t_{d(off)}$			19		
Turn-Off Fall Time	t_f			3		

/ Electrical Characteristic Curve

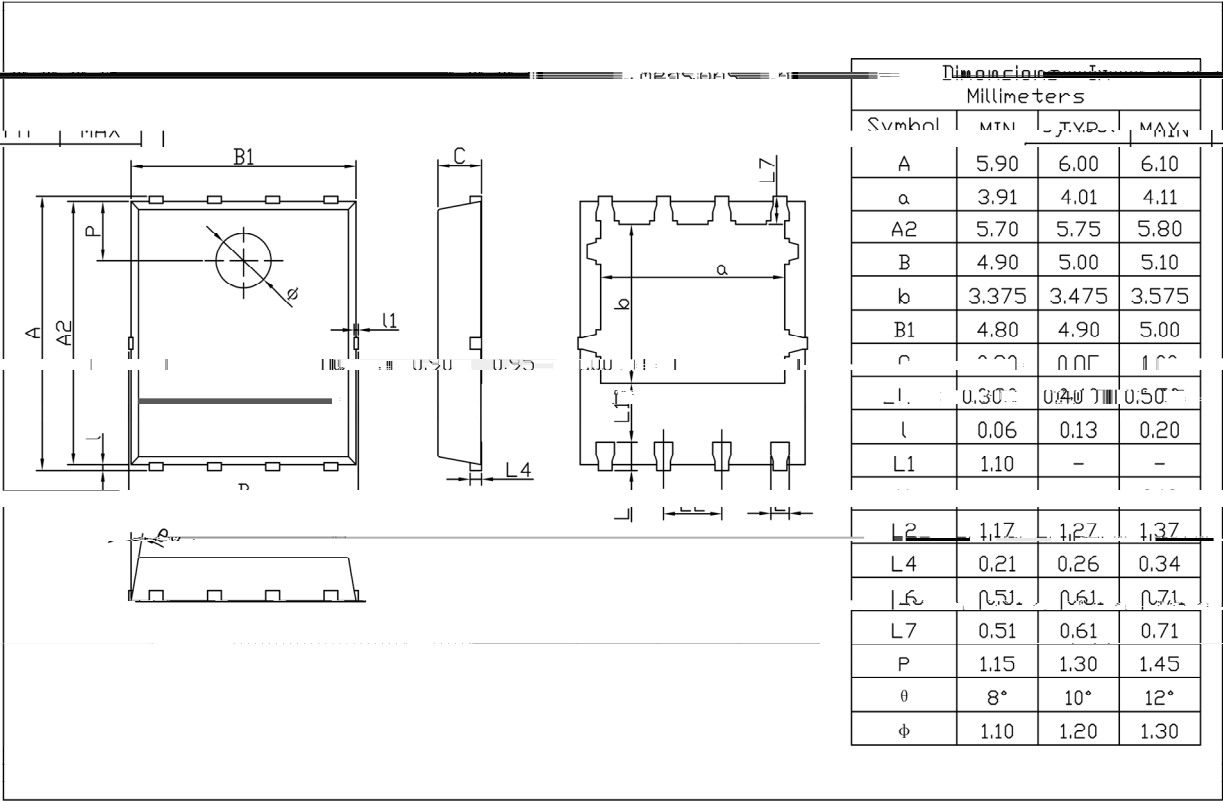


/ Electrical Characteristic Curve



Package Dimensions

PDFN5 X6 Unit:mm



Rev.01 202209

/ Marking Instructions



BR	
120N06S	

Note	
BR	Company Code
120N06S	Product Type Code
****:	Lot No. Code, code change with Lot No

() / Temperature Profile for IR Reflow Soldering(Pb-Free)

- 1

150 180

60 90sec;
- 2

245±5

5±0.5sec;
- 3

2 10

/sec.
- Note:
1.Preheating:150~180 , Time:60~90sec.
2.Peak Temp.:245±5 , Duration:5±0.5sec.
3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5