

/ Descriptions

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

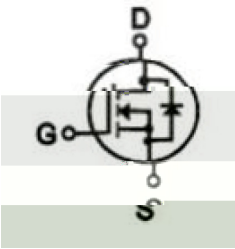
/ Features

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

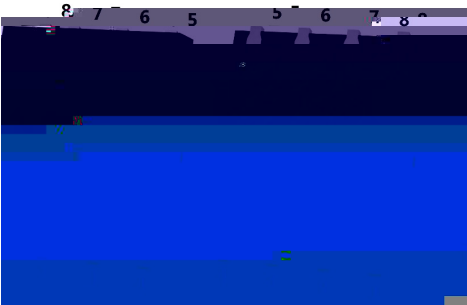
/ Applications

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_{aDs})

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		$P_D(T_c=25^\circ C)$	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	$t \leq 10s$	$R_{\theta JA}$	25	/ W
	Steady-State		60	
Maximum Junction-to-Case	Steady-State	$R_{\theta JC}$	2.9	

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

BRCS120N06SZC

Rev.A May.-2024



蓝箭电子
BLUE ROCKET ELECTRONICS

DATA SHEET

/ Electrical Characteristic Curve

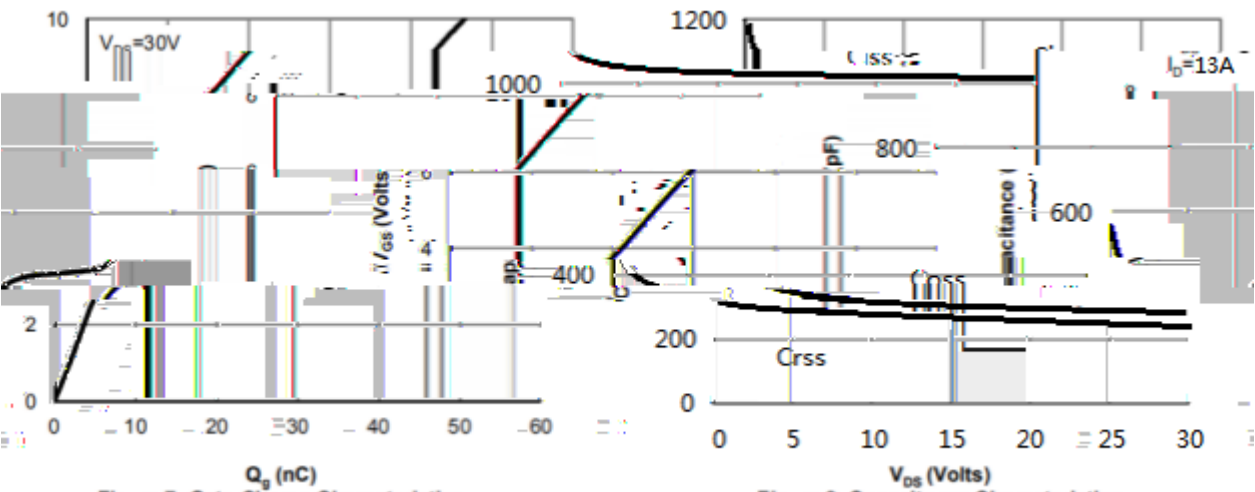


Figure 7: Gate Charge Characteristics Figure 8: Capacitance Characteristics

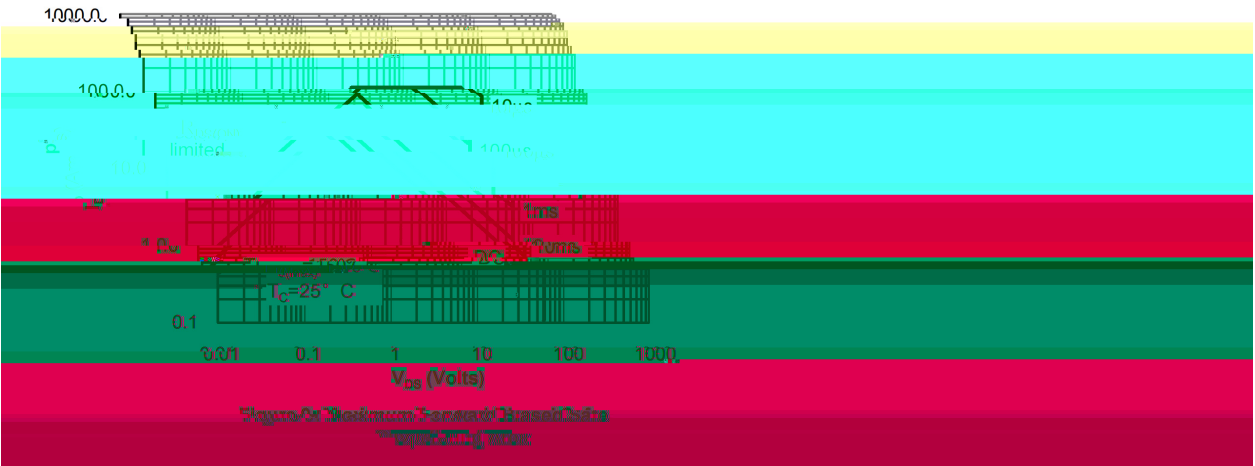


Figure 9: Maximum Forward Transconductance Characteristics

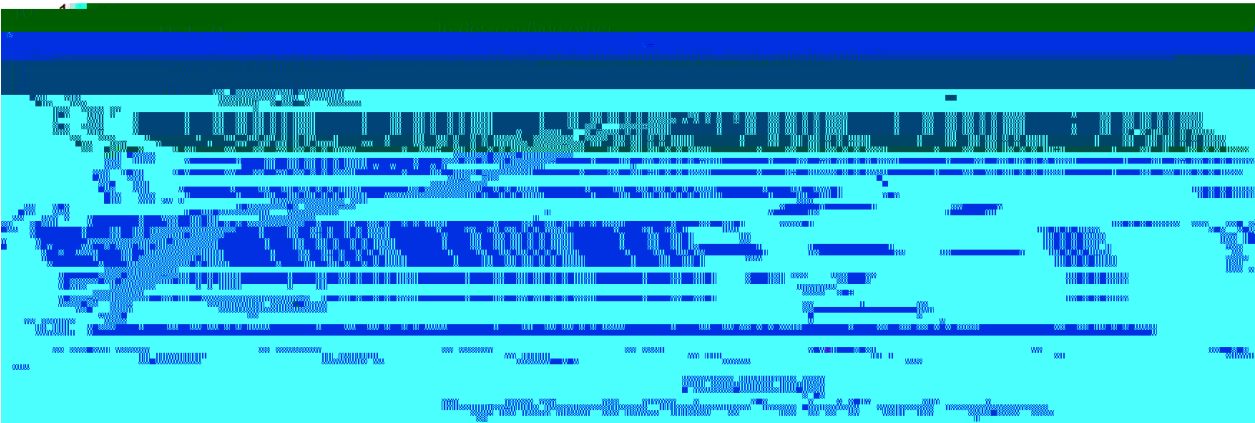
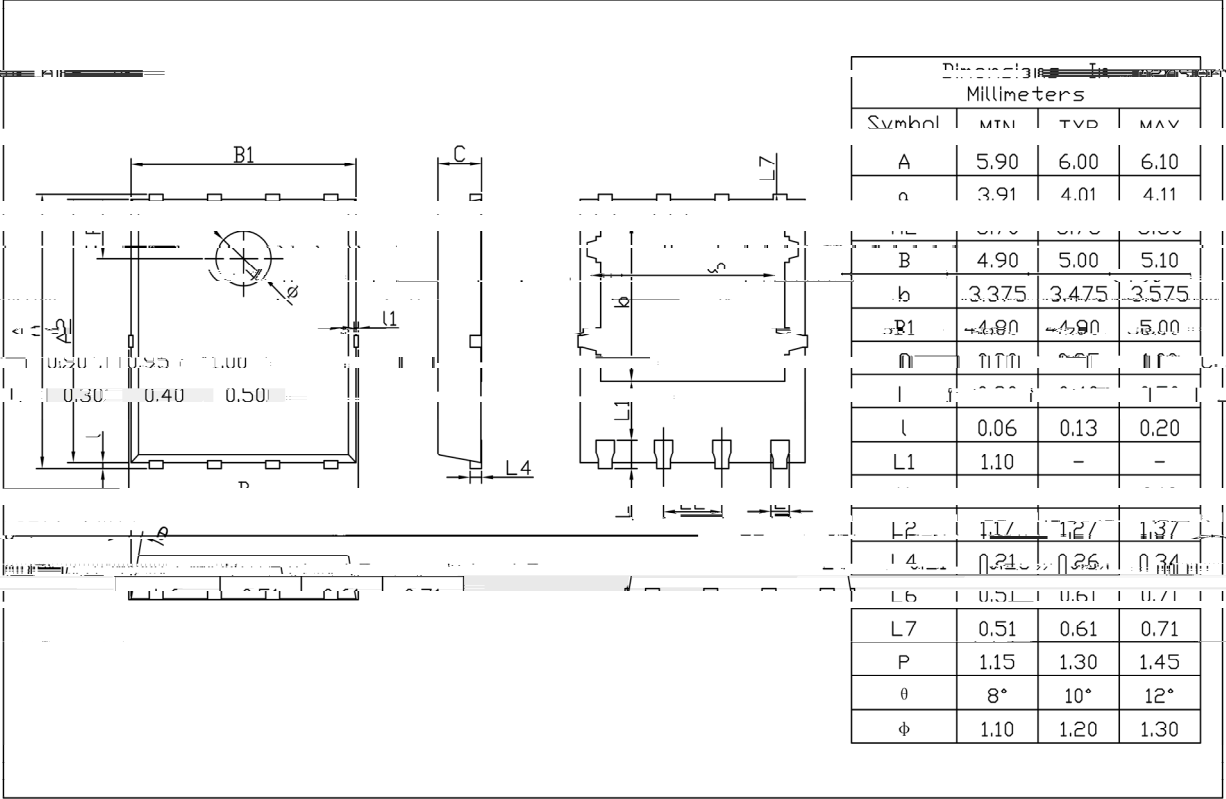


Figure 10: Switching Characteristics

I 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)

- Note:

1

150 180

60 90sec;

2

245±5

5±0.5sec;

3

2 10 /sec.
- 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

605±5 5