

BRCS120N06SZC

Rev.A May.-2024

/ Descriptions

PDFN5×6 N

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

/ Features

$V_{DS} (V) = 60V$ $I_D = 43A (V_{GS} = \pm 20V)$

$R_{DS(ON)} @ 10V$ 13m (Typ.11.5m)

$R_{DS(ON)} @ 4.5V$ 18m (Typ.15.5m)

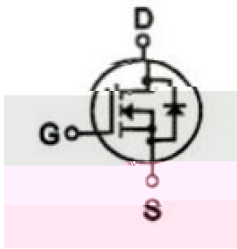
HF Product.

/ Applications

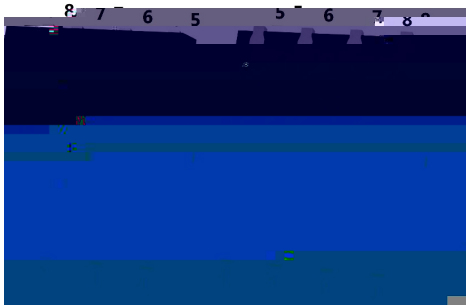
DC-DC

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 10s	R_{JA}	/ W
	Steady-State		
Maximum Junction-to-Case	Steady-State	R_{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
		$V_{GS}=4.5V$ $I_D=10A$		15.5	18	m
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		
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	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=30V$ $R_L=2.3$ $R_{GEN}=3$		5		ns
Turn-On Rise Time	t_r			3		
Turn-Off Delay Time	$t_{d(off)}$			19		
Turn-Off Fall Time	t_f			3		

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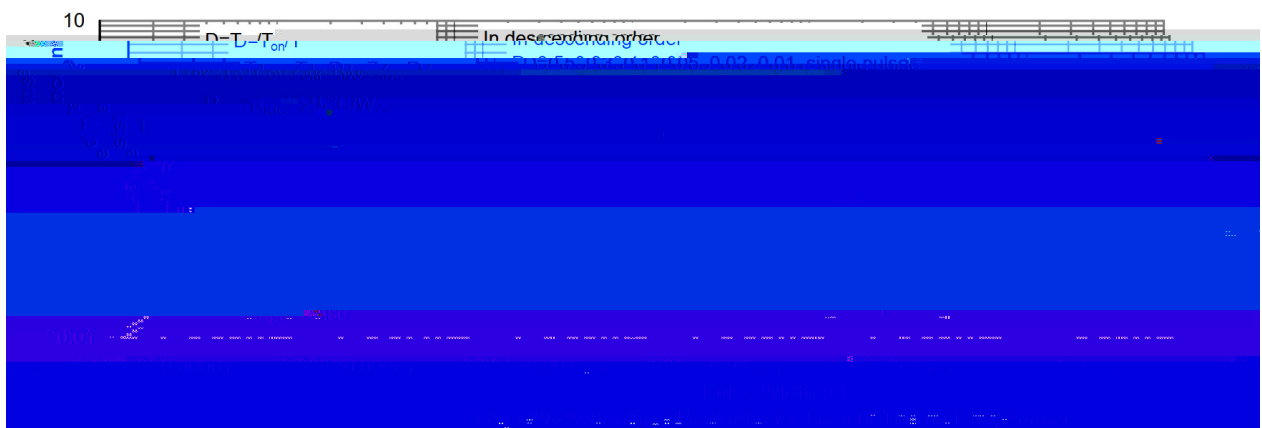
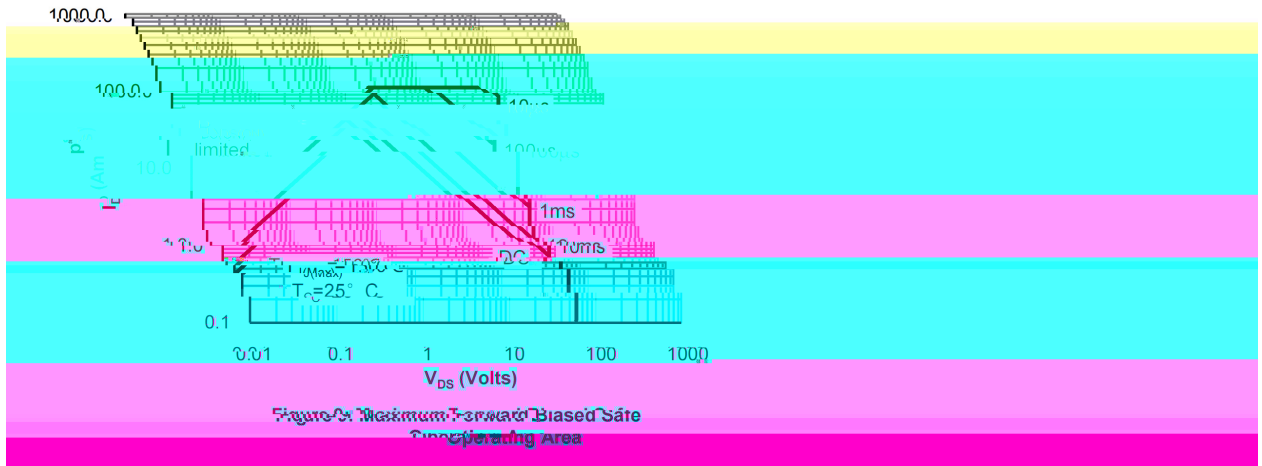
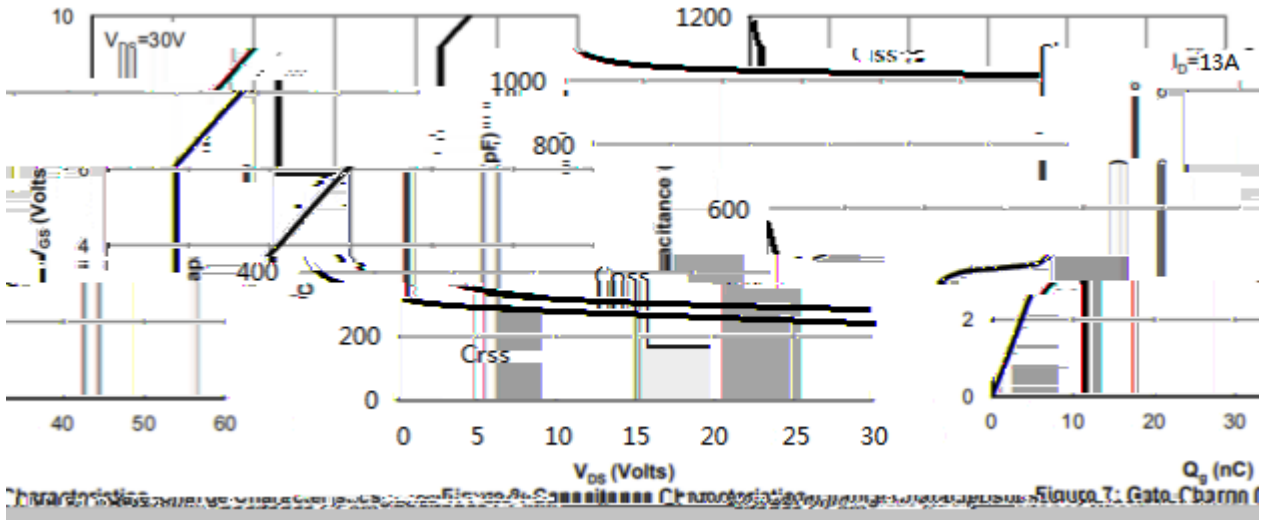
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蓝箭电子
BLUE ROCKET ELECTRONICS

DATA SHEET

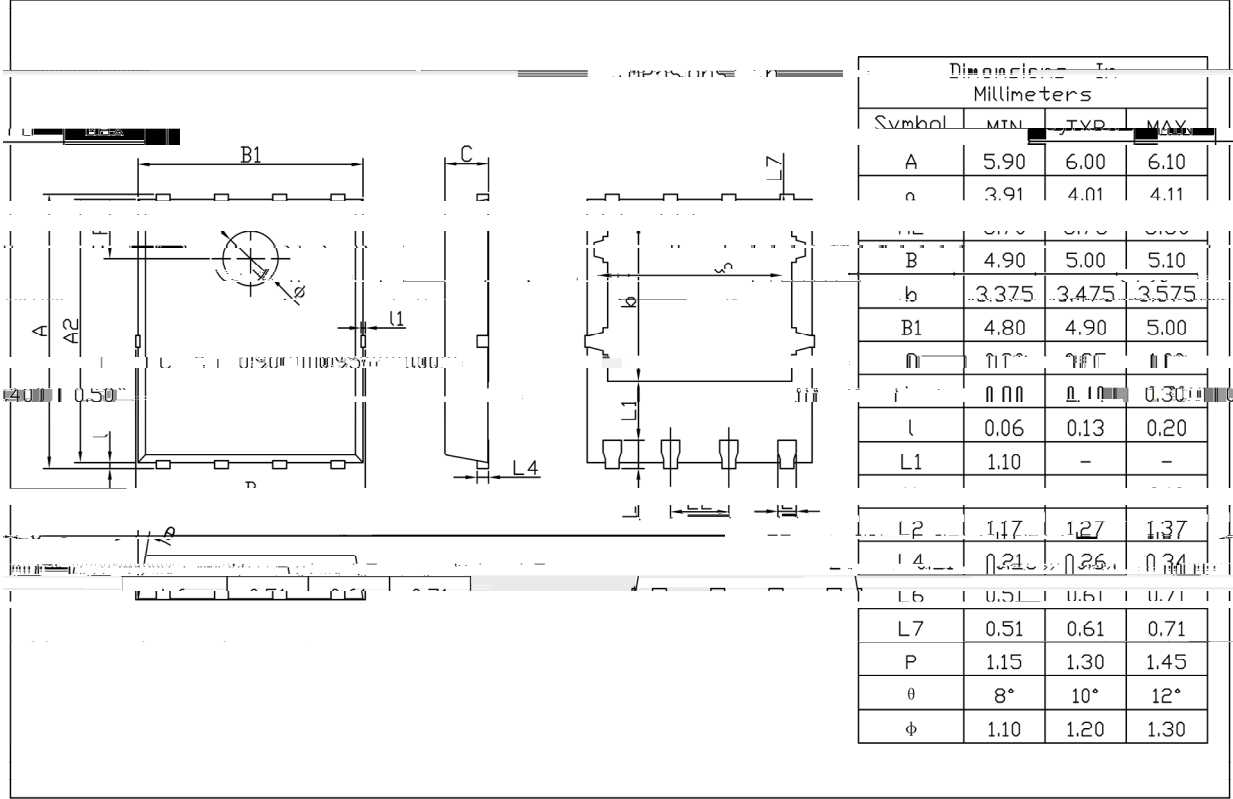
/ Electrical Characteristic Curve



/ Package Dimensions

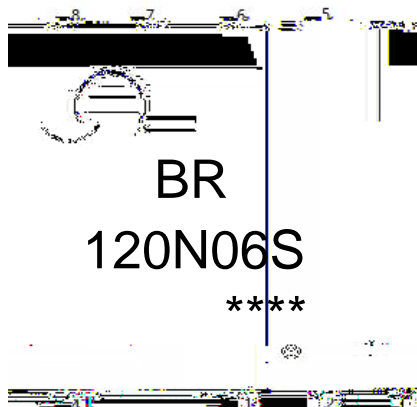
PDFN5 X6

Unit:mm



Rev.01 202209

/ Marking Instructions



BR

120N06S

Note

BR

Company Code

120N06S

Product Type Code

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Lot No. Code, code change with Lot No

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

Note:

- | | | | | | |
|---|-------|-----|-------|----------|---|
| 1 | 150 | 180 | 60 | 90sec; | 1.Preheating:150~180 , Time:60~90sec. |
| 2 | 245±5 | | 5±0.5 | sec; | 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

605±5 5