

/ Descriptions

PDFN5 6 N

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

/ Features

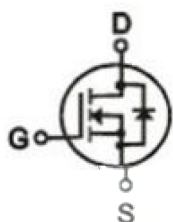
 $V_{DS}(V)=60\text{ V}$ $I_D=158\text{ A}$ $R_{DS(ON)}@10V\leq 2.0\text{ m}\Omega$ (Typ.1.8mR) $R_{DS(ON)}@4.5V\leq 3.0\text{ m}\Omega$ (Typ.2.5mR)

HF Product.

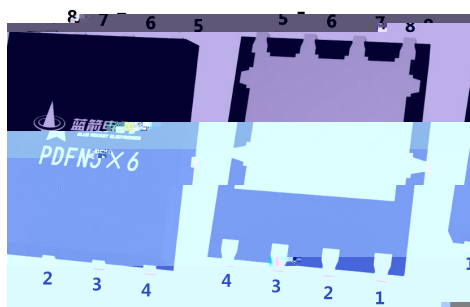
/ Applications

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

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings($T_a=25$)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	60	V
Continuous Drain Current		$I_D(T_c=25)$	158	A
Pulsed Drain Current		I_{DM}	316	A
Gate-Source Voltage		V_{GS}	± 20	V
Power Dissipation		$P_D(T_c=25)$	90	W
Avalanche energy($L=0.5mH$)		E_{AS}	380	mJ
Avalanche Current($L=0.5mH$)		I_{AS}	30.8	A
Junction and Storage Temperature Range		T_j, T_{stg}	-55 to 150	
Maximum Junction-to-Ambient	$t \leq 10s$	$R_{\theta JA}$	20	/ W
	Steady-State		57	
Maximum Junction-to-Case	Steady-State	$R_{\theta JC}$	1.39	

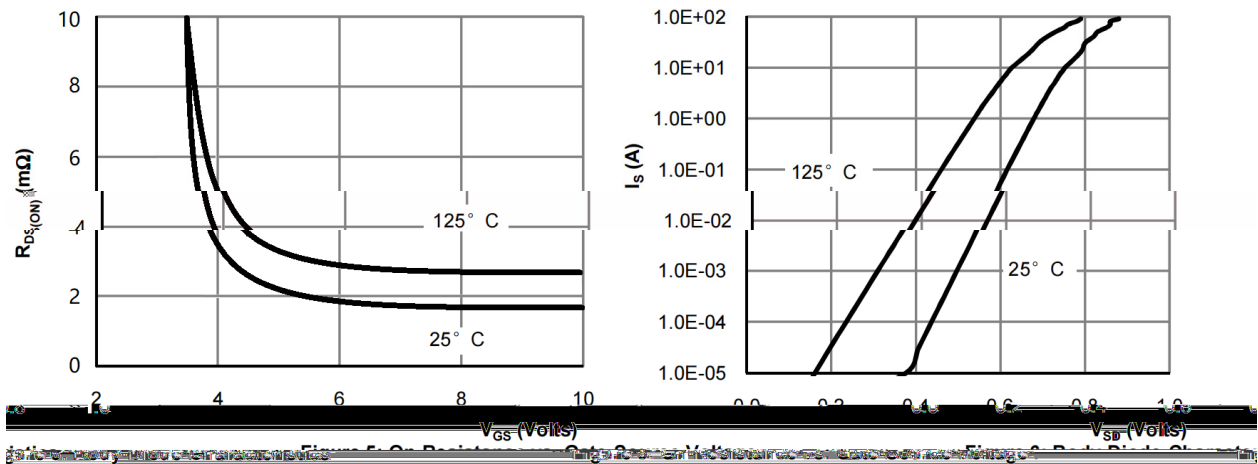
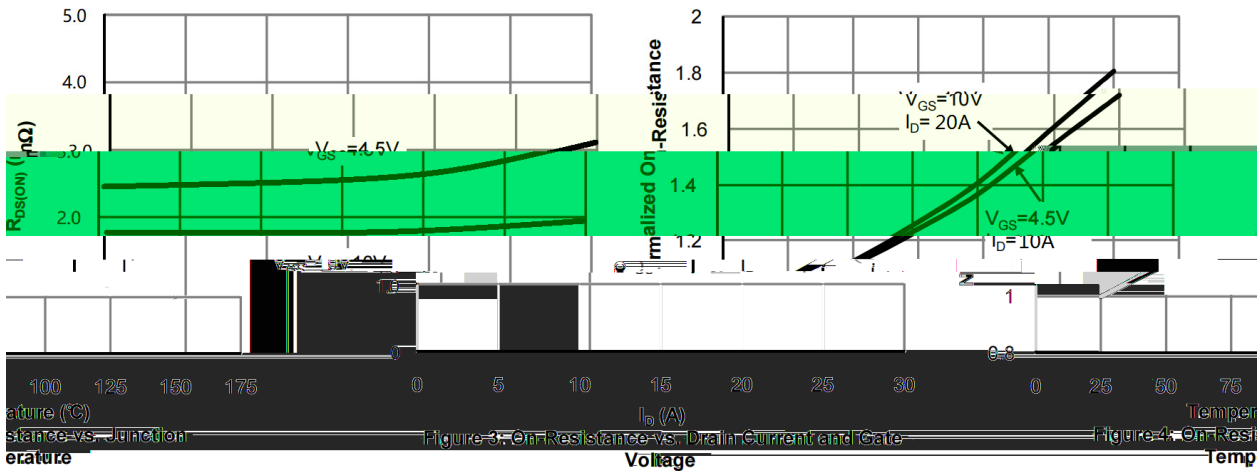
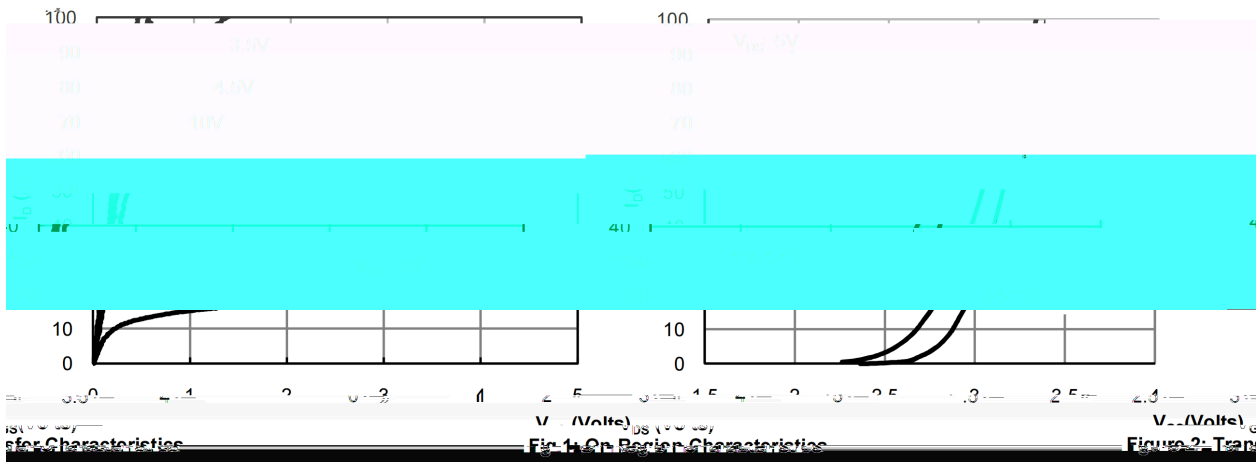
/ Electrical Characteristics($T_a=25$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	60	65		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V$ $V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		1.8	2.5	m Ω
		$V_{GS}=4.5V$ $I_D=10A$		2.4	3.5	
Forward On Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$			1.2	V
Gate resistance	R_g	$f=1MHz$		1.0		Ω
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		6700		pF
Output Capacitance	C_{oss}			1400		
Reverse Transfer Capacitance	C_{rss}			70		
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V,$ $V_{DS}=30V,$ $I_D=20A$		60		nC
Total Gate Charge	$Q_{g(4.5V)}$			23		
Gate Source Charge	Q_{gs}			16		
Gate Drain Charge	Q_{gd}			3		

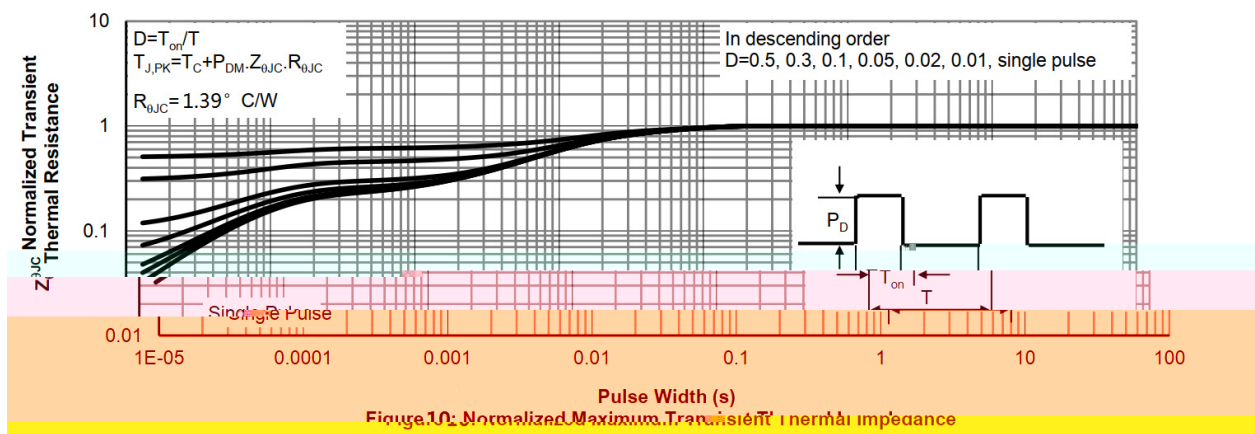
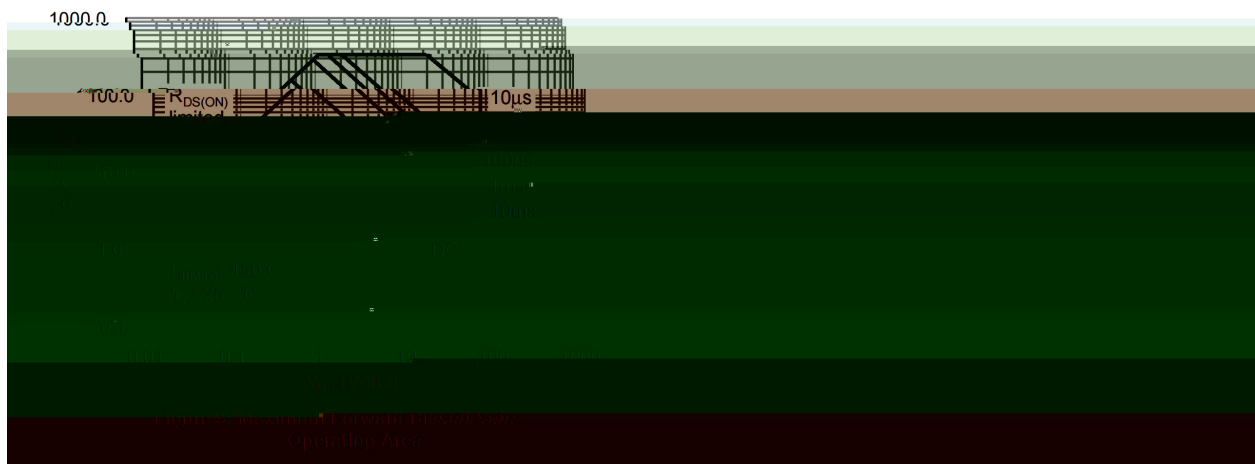
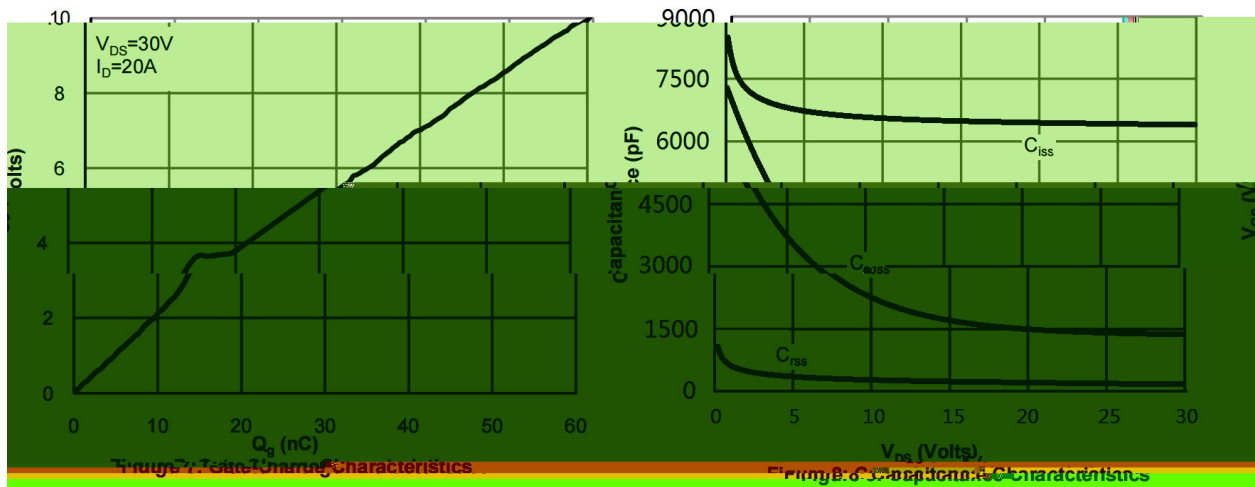
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=20V$ $R_L=1\Omega$ $R_{GEN}=3\Omega$		13		ns
Turn-On Rise Time	t_r			4		
Turn-Off Delay Time	$t_{d(off)}$			47		
Turn-Off Fall Time	t_f			6.5		

/ Electrical Characteristic Curve



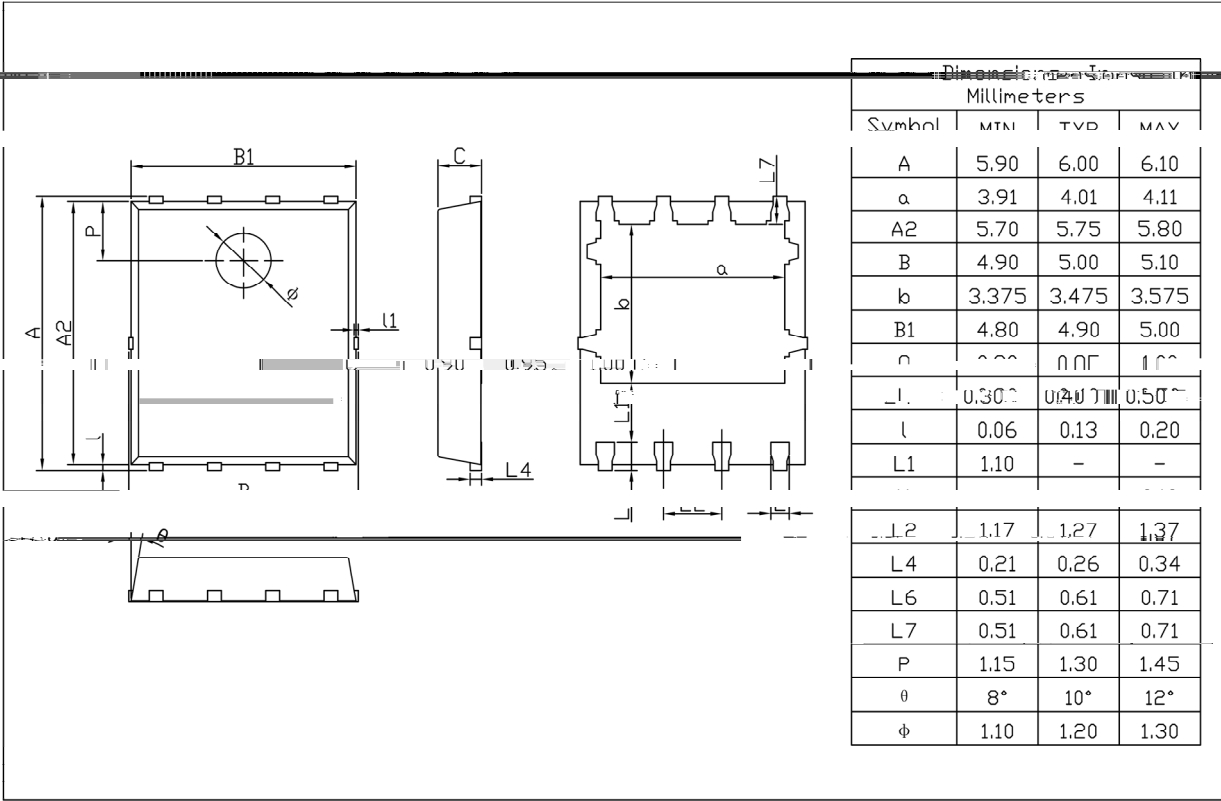
/ Electrical Characteristic Curve



/ Package Dimensions

PDFN5×6

Unit:mm



Rev.01 202209

BRCS020N06SZC

Rev.B Dec.-2024



蓝箭电子
BLUE ROCKET ELECTRONICS

DATA SHEET

/ Marking Instructions

() / 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 0.5sec;

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