

/ Descriptions

PDFN5×6 N

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

/ Features $V_{DS}(V)=30\text{ V}$ $I_D=124\text{ A}$ $R_{DS(ON)}@10V\leq 2.5\text{ m}\Omega$ (Typ.1.4mR) $R_{DS(ON)}@4.5V\leq 4.0\text{ m}\Omega$ (Typ.2.5mR)

HF Product.

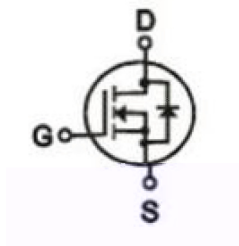
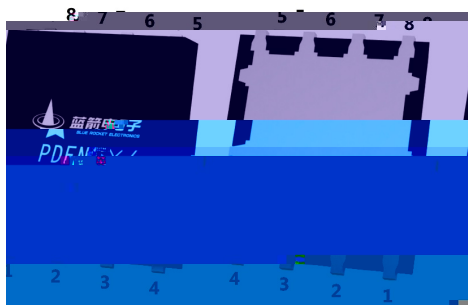
/ Applications

MB/NB/UMPC/VGA

Buck

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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

/ Marking

See Marking Instructions.

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Continuous Drain Current	$I_D(T_c=25^\circ\text{C})$	124	A
Pulsed Drain Current	I_{DM}	248	A
Gate-Source Voltage	V_{GS}	± 20	V
Power Dissipation	$P_D(T_c=25^\circ\text{C})$	65	W
Avalanche energy($L=0.5\text{mH}$)	E_{AS}	810	mJ
Avalanche Current($L=0.5\text{mH}$)	I_{AS}	46.5	A
Junction and Storage Temperature Range	T_j, T_{stg}	-55 to 150	
Maximum Junction-to-Ambient	$R_{\theta JA}$	50	/ W
Maximum Junction-to-Case	$R_{\theta JC}$	1.92	

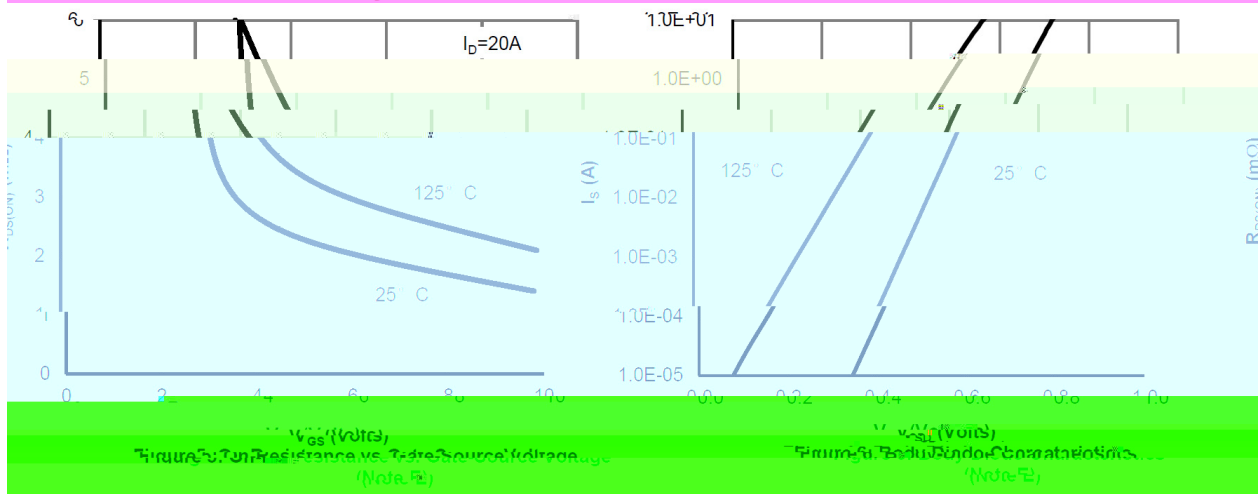
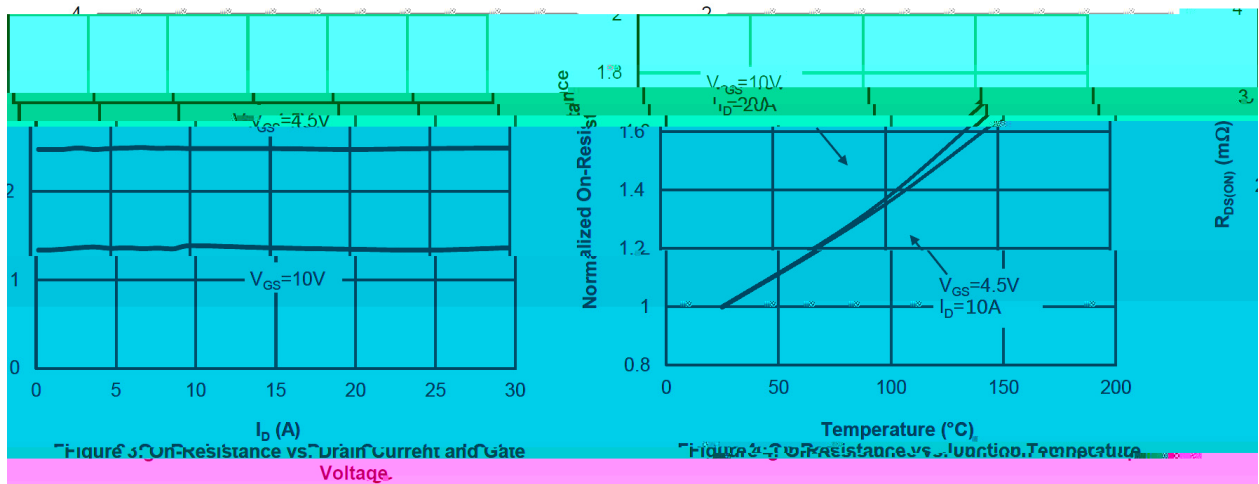
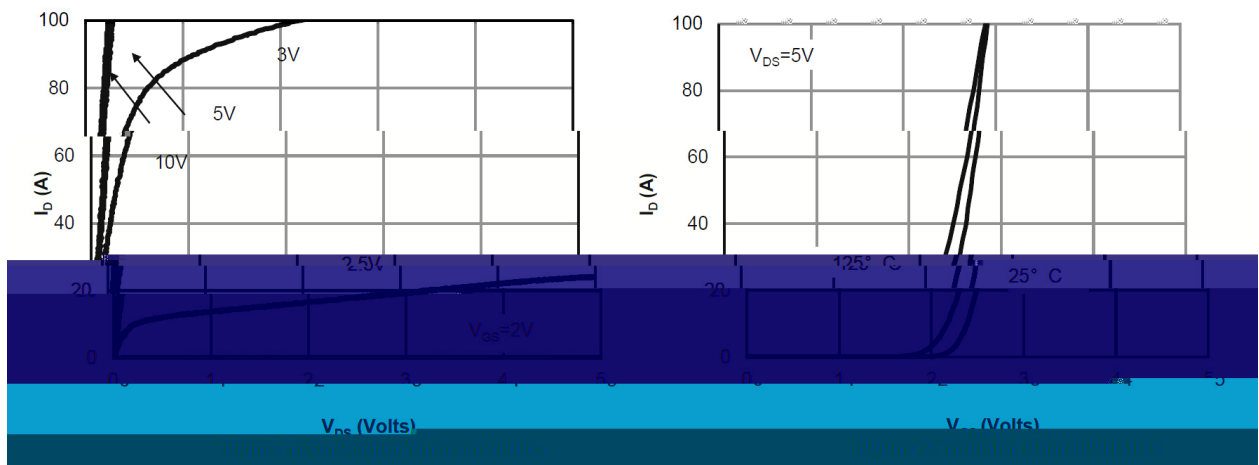
/ Electrical Characteristics($T_a=25^\circ\text{C}$)

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	33.5		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	2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=20\text{A}$		1.4	2.5	m Ω
		$V_{GS}=4.5\text{V}, I_D=10\text{A}$		2.5	4.0	
Diode Forward Voltage	V_{SD}	$I_S=1\text{A}, V_{GS}=0\text{V}$			1.4	V
Input Capacitance	C_{iss}	$V_{DS}=25\text{V}, V_{GS}=0\text{V}$ $f=1.0\text{MHz}$		5800		pF
Output Capacitance	C_{oss}			500		
Reverse Transfer Capacitance	C_{rss}			465		
Gate resistance	R_g	$V_{GS}=0\text{V}, V_{DS}=0\text{V}$ $f=1\text{MHz}$		1.1		Ω

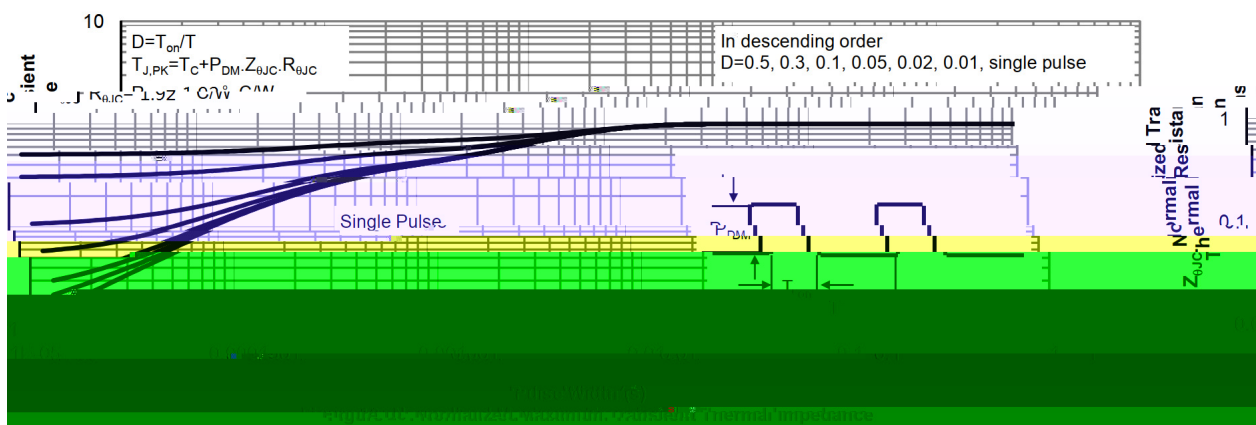
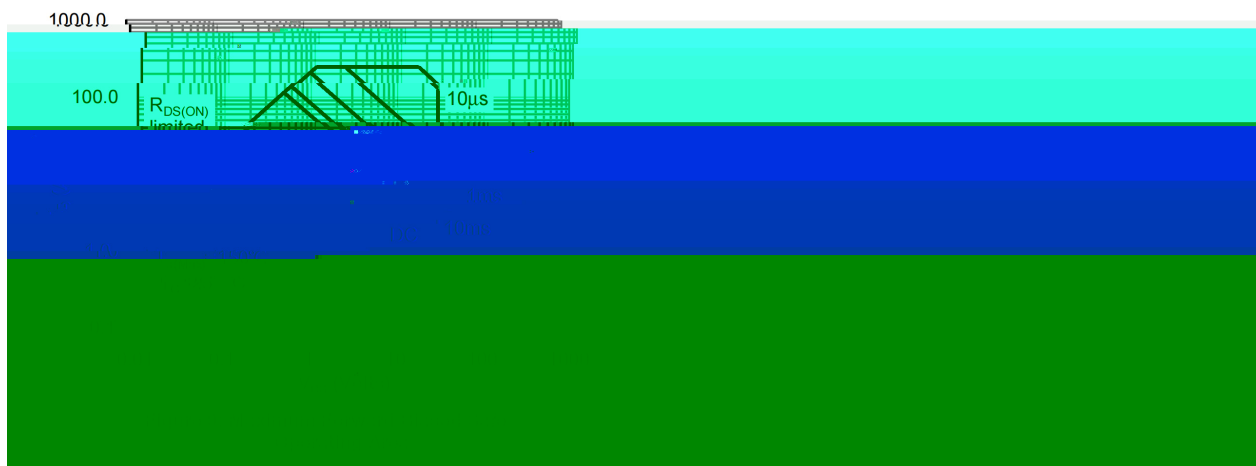
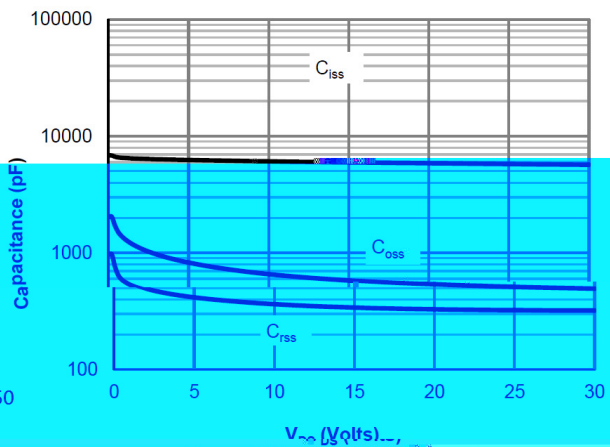
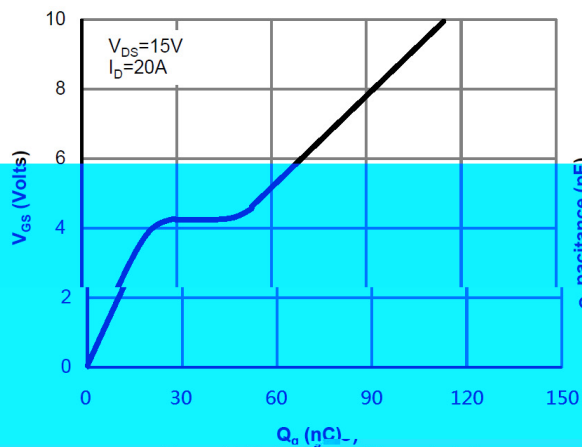
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $V_{DS}=15V$ $I_D=20A$		115.2		nC
Total Gate Charge	$Q_{g(4.5V)}$			55.3		
Gate Source Charge	Q_{gs}			11.0		
Gate Drain Charge	Q_{gd}			23.6		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=15V$ $I_D=20A$ $R_G=3\Omega$		17.2		ns
Turn-On Rise Time	t_r			53.3		
Turn-Off Delay Time	$t_{d(off)}$			80.9		
Turn-Off Fall Time	t_f			35.3		

/ Electrical Characteristic Curve



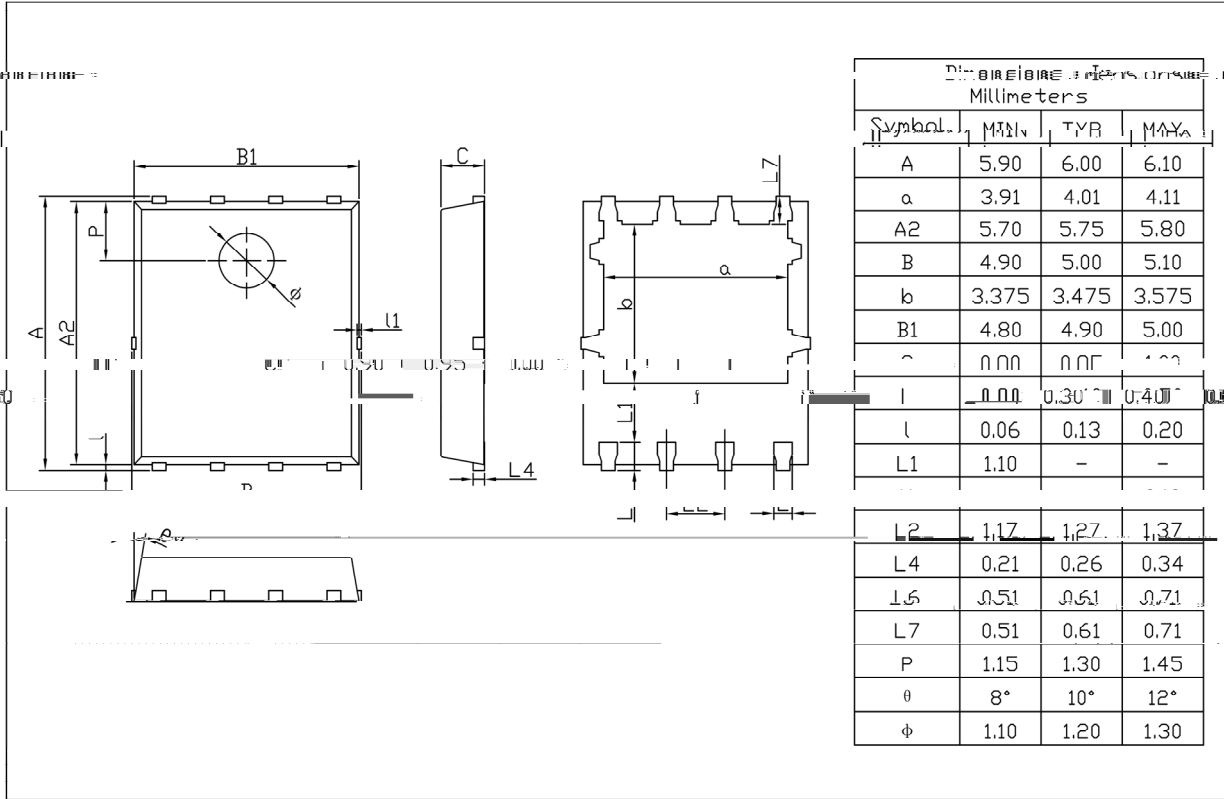
/ Electrical Characteristic Curve



/ Package Dimensions

PDFN5 X6

Unit:mm



Rev.01 202209

BRCS025N03ZC

Rev.A Jul.-2025

DATA SHEET