BRCS016N03ZCQ

Rev.A Nov.-2022

DATA SHEET

/ Descriptions

PDFN5Ö6 Ṃ Ŀ N ۺ ʆ ῼ Ẕ ᑎ

N-Channel MOSFET in a PDFN5Ö6 Plastic Package .

/ Features

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Low $R_{DS(ON)}$ to minimize conductive loss, low Gate Charge for fast switching, Low Thermal resistance, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

/ Applications

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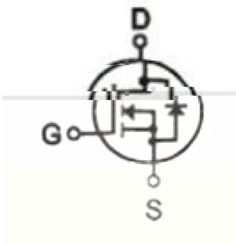
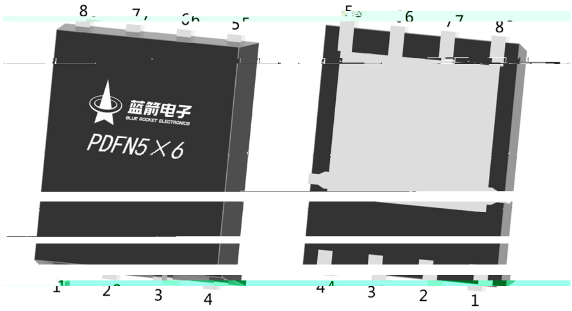
Battery Management, High Frequency Point-of-Load Synchronous Buck Conventer for MB/NB/UMPC/VGA, Networking DC-DC Power System, Load Switch, Meet the stringent requirements of automotive applications.

/ 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
[illegible]	[illegible]

/ Marking

ȍ ᴍ ˠ ب ˝ See Marking Instructions.

v ˝Ω Parameter		ɬ ᴺ Symbol	˝Ω Ө Rating	ᴅ ʜ Unit
Drain-Source Voltage		V_{DS}	30	V
Drain Current - Continuous		I_D	146	A
Drain Current – Pulsed		I_{DM}	300	A
Gate-Source Voltage		V_{GS}	± 20	V
Power Dissipation		$P_D(T_c=25\ )$	57	W
Single Pulse Avalanche Energy(L=0.5mH)		E_{AS}	315	mJ
Avalanche Current(L=0.5mH)		I_{AS}	30	A
Junction and Storage Temperature Range		T_j, T_{stg}	-55 to 150	ɫ
Thermal resistance, junction - ambient	t ≤ 10s	$R_{\theta JA}$	20	/ W
	Steady-State		50	
Thermal resistance, junction - case	Steady-State	$R_{\theta JC}$	2.2	

v ˝Ω Parameter	ɬ ᴺ Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=250uA, V_{GS}=0V	30	35		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=0V			1.0	uA
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}= ±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	1	1.6	3	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=24A		1.5	1.8	mF
		V_{GS}=4.5V, I_D=12A		2.0	2.8	
Diode Forward Voltage	V_{SD}	I_S=1A, V_{GS}=0V		0.68	1	V
Input Capacitance	C_{iss}			8500		
Output Capacitance	C_{oss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		890		pF
Reverse Transfer Capacitance	C_{rss}					e
	g	V_{GS}=0V V_{DS}=0V f=1MHz		1.8		q
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V, V_{DS}=15V, I_D=20A		60		

/ Electrical Characteristics(T_a=25)

ν ῼ Parameter	ʮ ᴺ Symbol	╝ ׃ ῖ Ţ Test Conditions	ῳ ῃ Ӫ Min	Ɛ ʒ Ӫ Typ	ῳ ᶾ Ӫ Max	ᴅ Ӈ Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=15V R_L=0.75Ω R_{GEN}=3Ω		12.5		ns
Turn-On Rise Time	t_r			6.0		
Turn-Off Delay Time	$t_{d(off)}$			47		
Turn-Off Fall Time	t_f			10.5		

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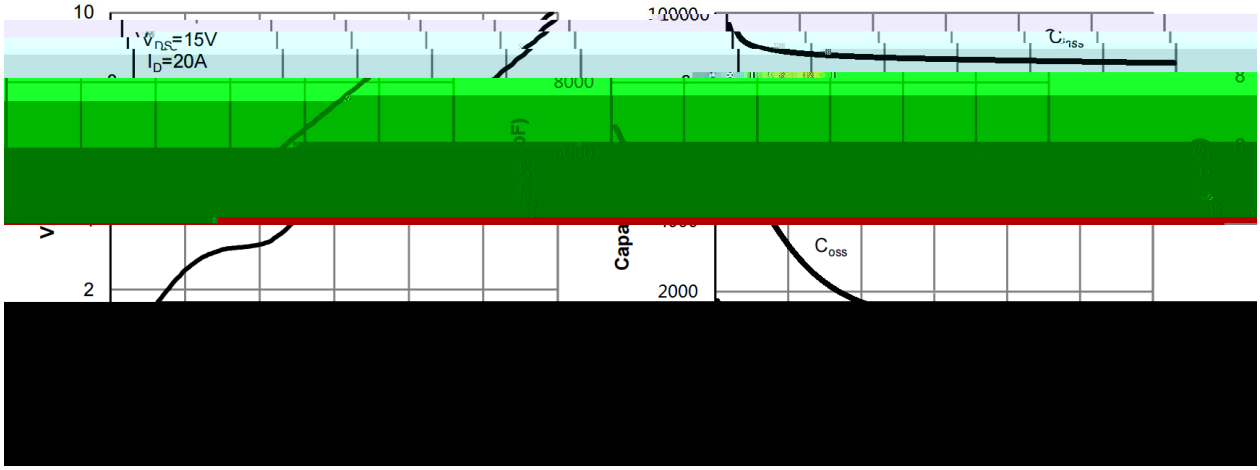
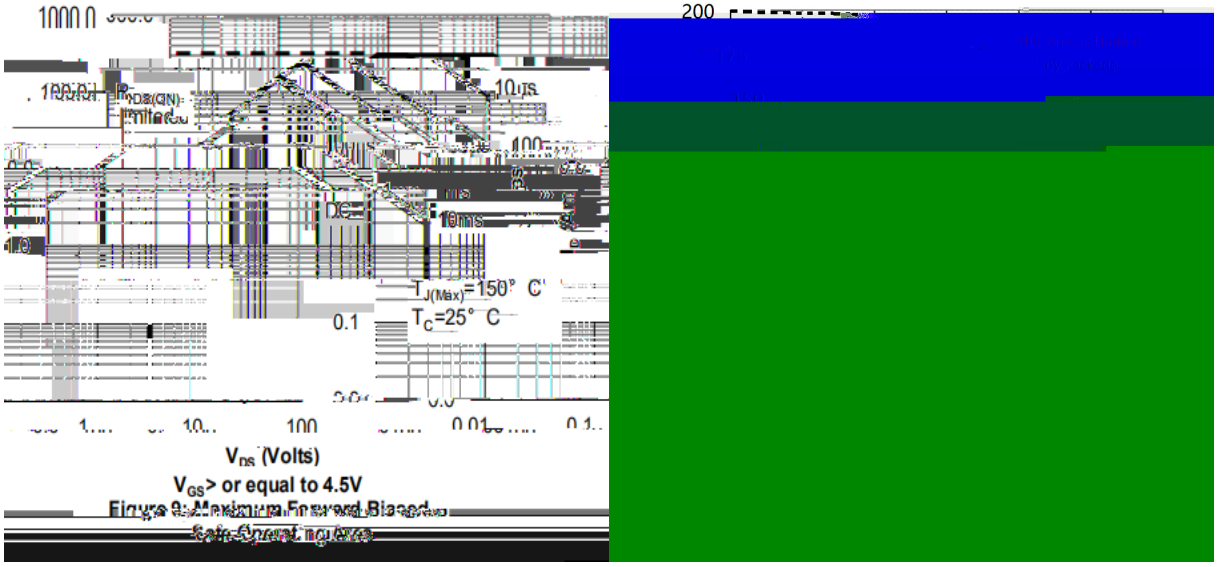
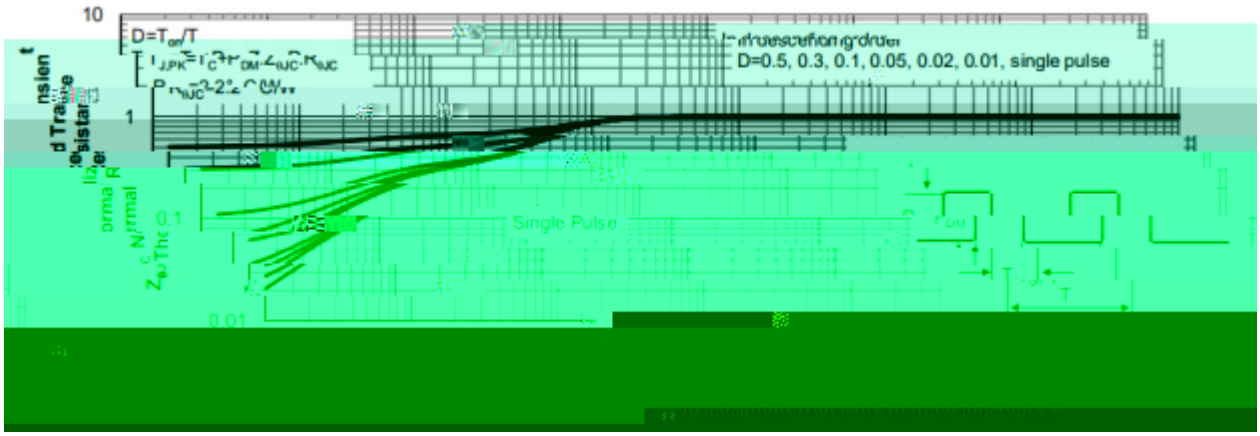
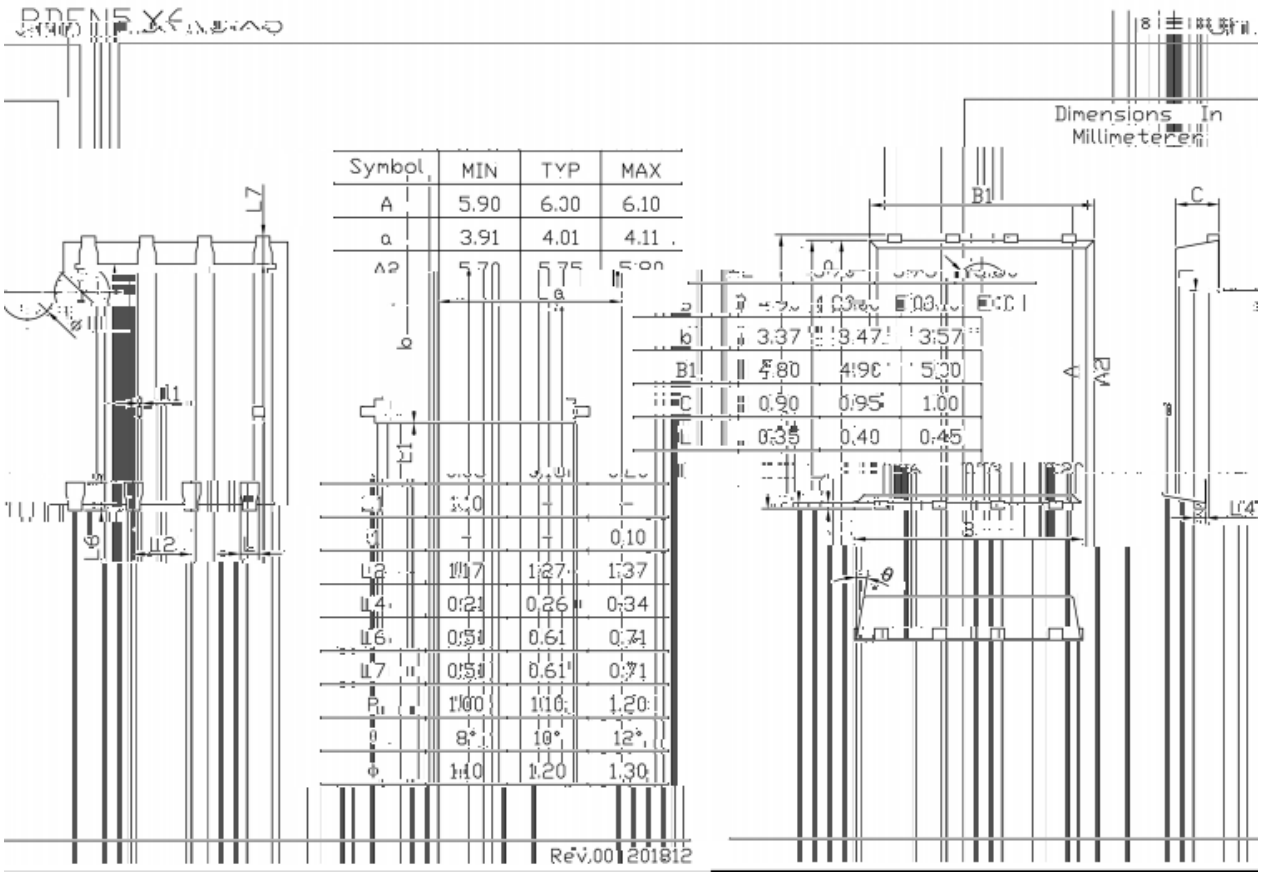
/ Electrical Characteristic Curve



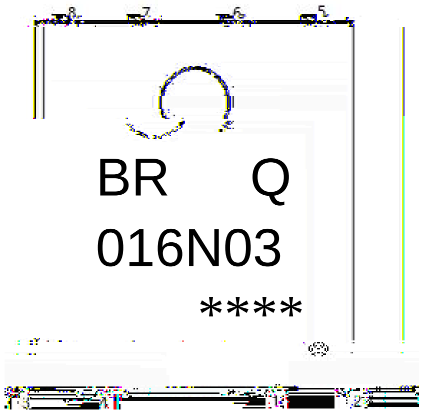




/ Package Dimensions



/ Marking Instructions



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Note:

BR:	Company Code
Q:	Automobile halogen-free product Code
016N03:	Product Type Code
****:	Lot No. Code, code change with Lot No

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

ب ˝ χ

1 Ĺ ♬ □ ẙ 150 Ḱ 200 ł ı `H ژ 60 Ḱ 120sec;

2 Š Ө □ ẙ 255 ° 5 ł ı `H ژ `Y ㅅ ㎛

Note:

1.Preheating:150~200 ł , Time:60~120sec.