/ Revised record

版本	修订日期	有修订的页码	修订涉及的内容	拟制	审核
A	2022.06.19	All	参考 AOS-AON6298 和 BRCS150N12SRA 规格书首次制定	庞隆基	陈逸晞

/ Descriptions

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

/ Features

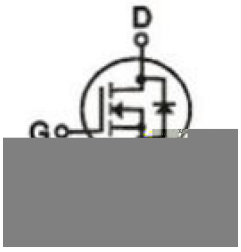
Low $R_{DS(ON)}$ to minimize conductive loss;low Gate Charge for fast switching;Low Thermal resistance;HF Product.

/ Applications

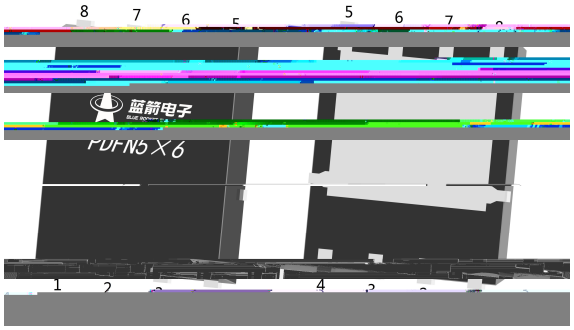
MB/NB/UMPC/VGA Buck -

Battery Management,High Frequency Point-of-Load Synchronous Buck Conventer 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

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_a=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	120	V
Continuous Drain Current		I_D	49	A
Pulsed Drain Current		I_{DM}	100	A
Gate-Source Voltage		V_{GS}	±20	V
Power Dissipation		P_D(T_c=25℃)	78	W
Avalanche energy(L=0.5mH)		E_{AS}	24.5	mJ
Avalanche Current(L=0.5mH)		I_{AS}	7.0	A
Junction and Storage Temperature Range		T_j, T_{stg}	-55 to 150	℃
Maximum Junction-to-Ambient	t ≤ 10s	RθJA	17	℃/ W
	Steady-State		55	
Maximum Junction-to-Case	Steady-State	RθJC	1.6	

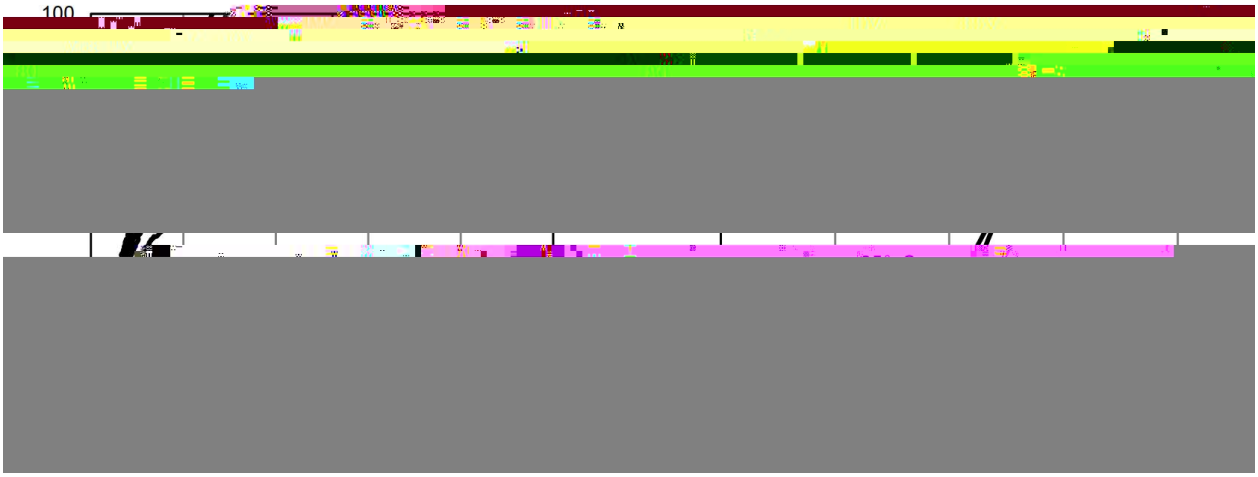
/ Electrical Characteristics(Ta=25)

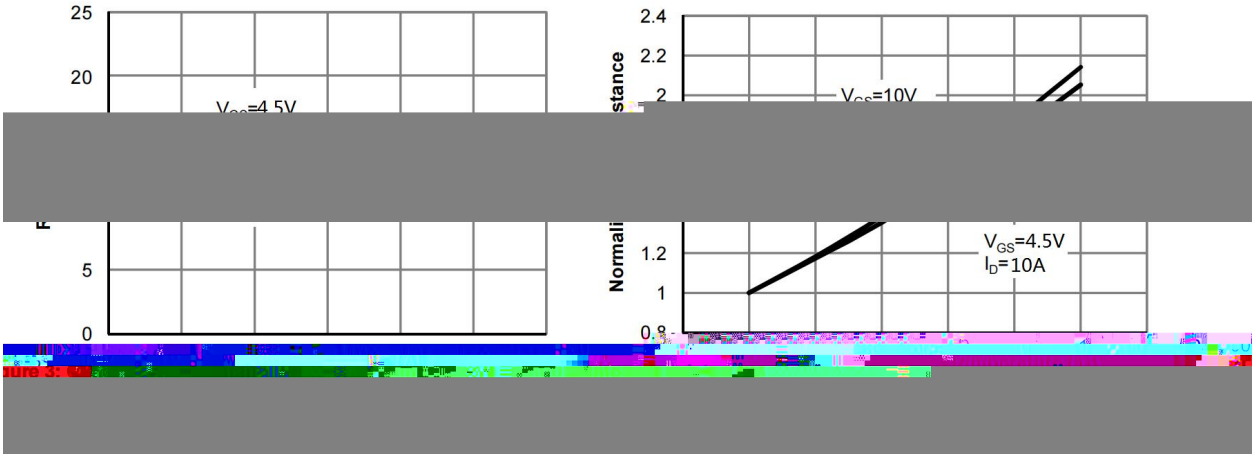
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=250uA, V_{GS}=0V	120	128		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=120V, V_{GS}=0V			1	uA
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}= ±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	1.0	1.7	2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=20A		13.6	15	mΩ
		V_{GS}=4.5V, I_D=10A		16	25	
Diode Forward Voltage	V_{SD}	I_S=1A, V_{GS}=0V			1.2	V
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		2100		pF
Output Capacitance	C_{oss}			720		
Reverse Transfer Capacitance	C_{rss}			130		
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		3.0		Ω
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V, V_{DS}=50V, I_D=20A		32.5		nC
Total Gate Charge	$Q_{g(4.5V)}$			15.5		
Gate Source Charge	Q_{gs}			6.5		
Gate Drain Charge	Q_{gd}			5		

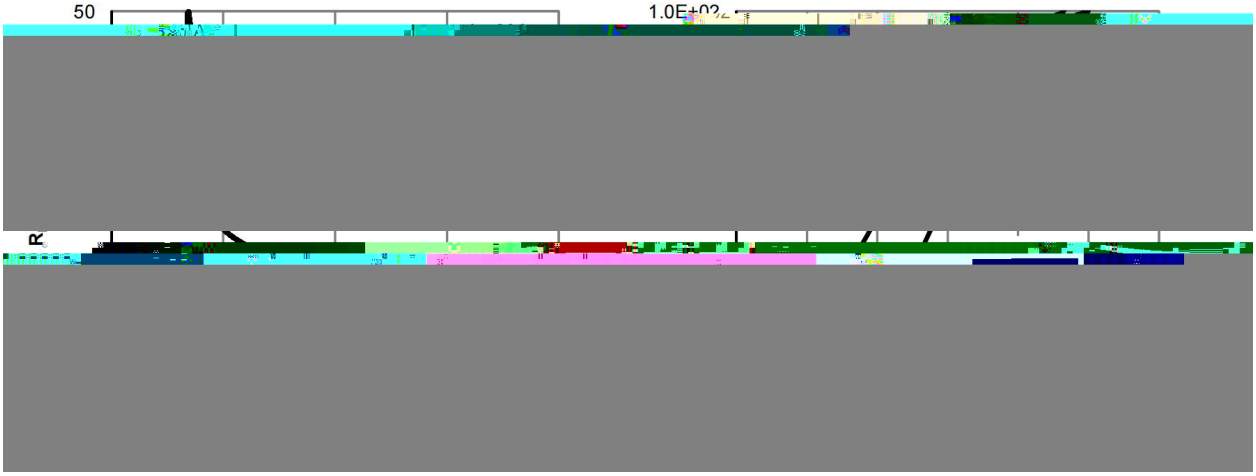
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=50V R_L=2.5 Ω R_{GEN}=3 Ω		7		ns
Turn-On Rise Time	t_r			3		
Turn-Off Delay Time	$t_{d(off)}$			27		
Turn-Off Fall Time	t_f			4		

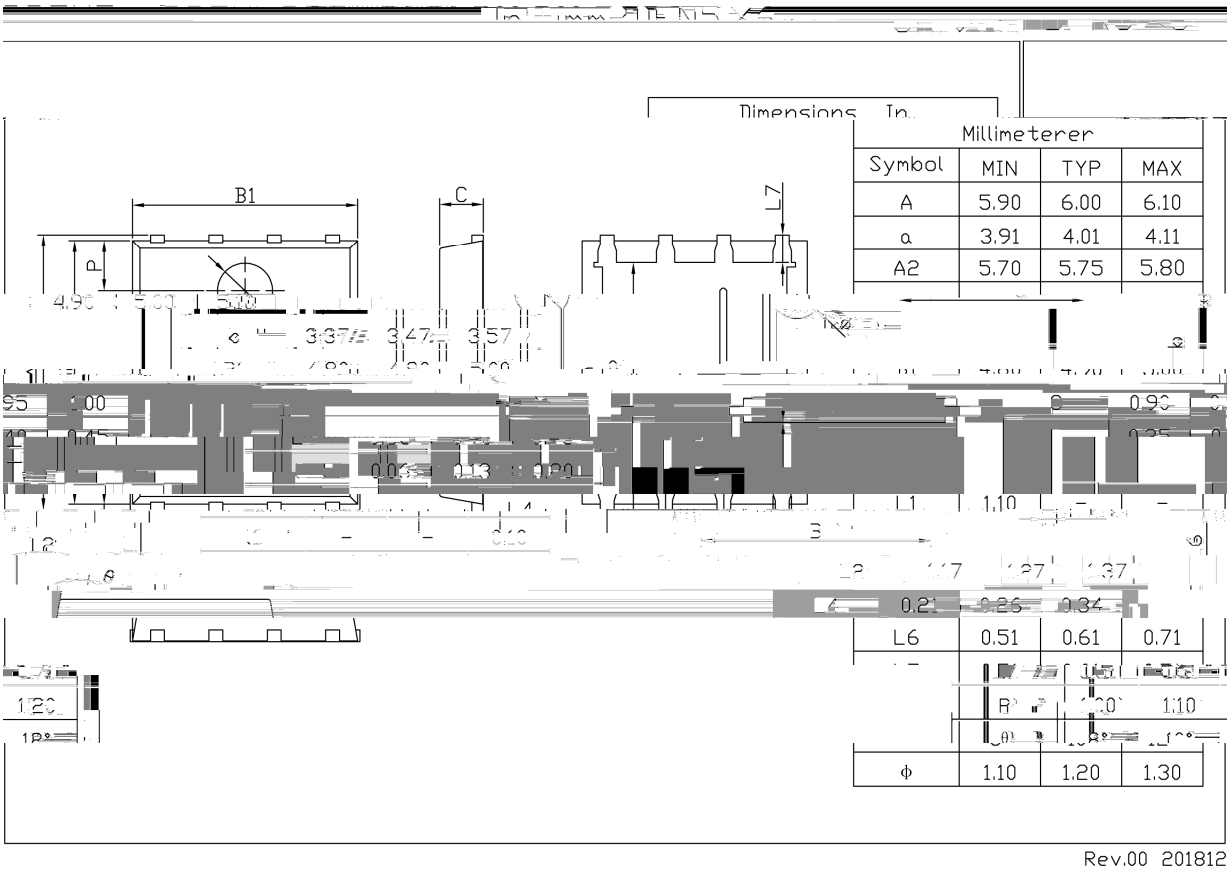
/ Electrical Characteristic Curve



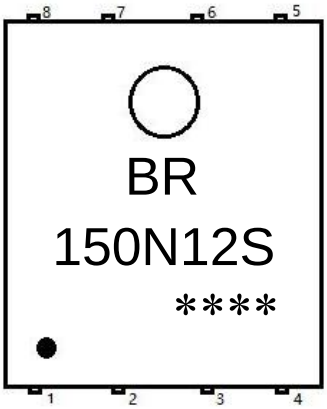




/ Package Dimensions



/ Marking Instructions



BR

150N12S

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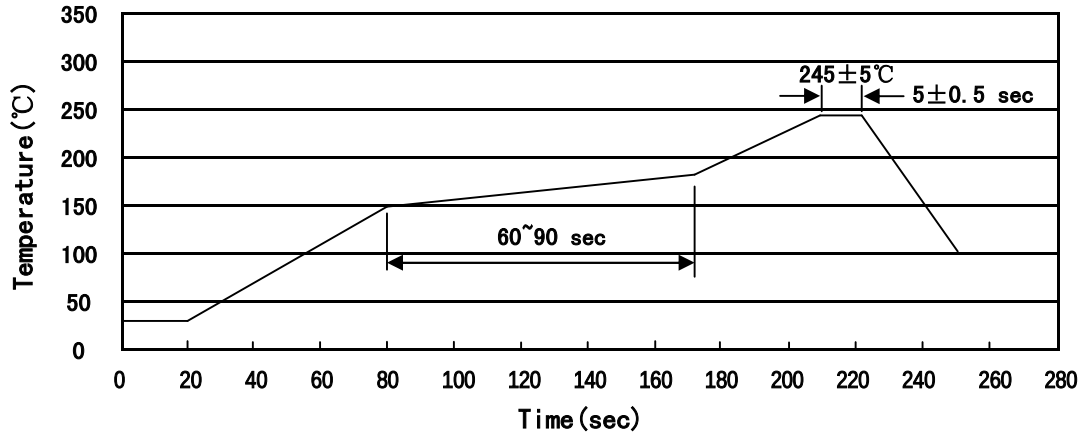
Note

BR	Company Code
150N12S	Product Type
****:	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±0.5sec;	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 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)		
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box 盒	Outer Box 箱
PDFN5 × 6	5000	2	10000	6	60000	13" × 12	360 × 360 × 50	380 × 335 × 366

/ Notices