

BRCS150N12SZC

Rev.A Jun.-2022



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

/ Features

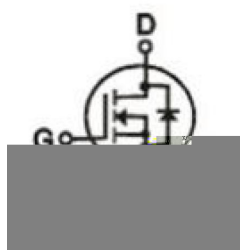
Low $R_{DS(ON)}$ to minimize conductive loss; low Gate Charge for fast switching; Low Thermal resistance; HF Product.

/ Applications

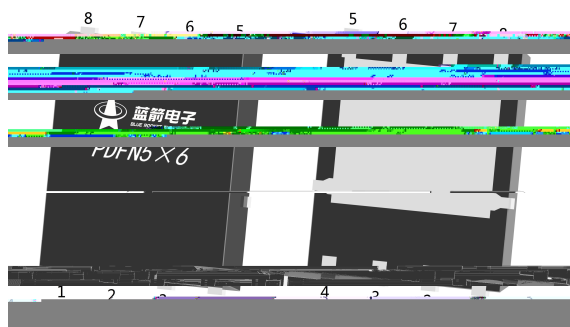
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Battery Management,High Frequency Point-of-Load Synchronous Buck Converter for MB/NB/UMPC/VGA,Networking DC-DC Power System,Load Switch.

/ Equivalent Circuit



/ Pinning



PIN1、 2、 3: S PIN4: G PIN5、 6、 7、 8: D

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°C)	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	°C
Maximum Junction-to-Ambient	t ≤ 10s	R _{θJA}	17	°C/ W
	Steady-State		55	
Maximum Junction-to-Case	Steady-State	R _{θJC}	1.6	

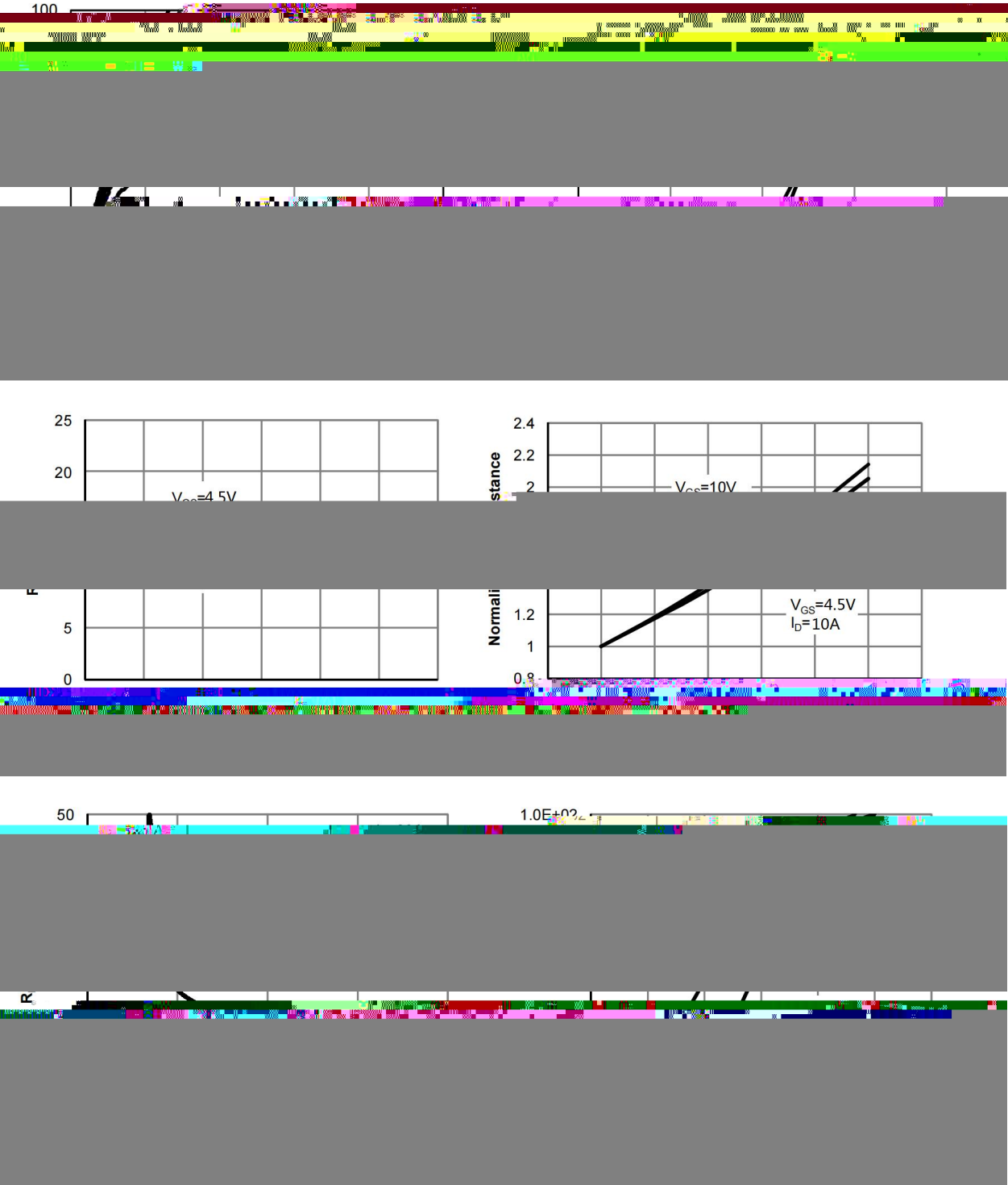
/ Electrical Characteristics($T_a=25$)

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

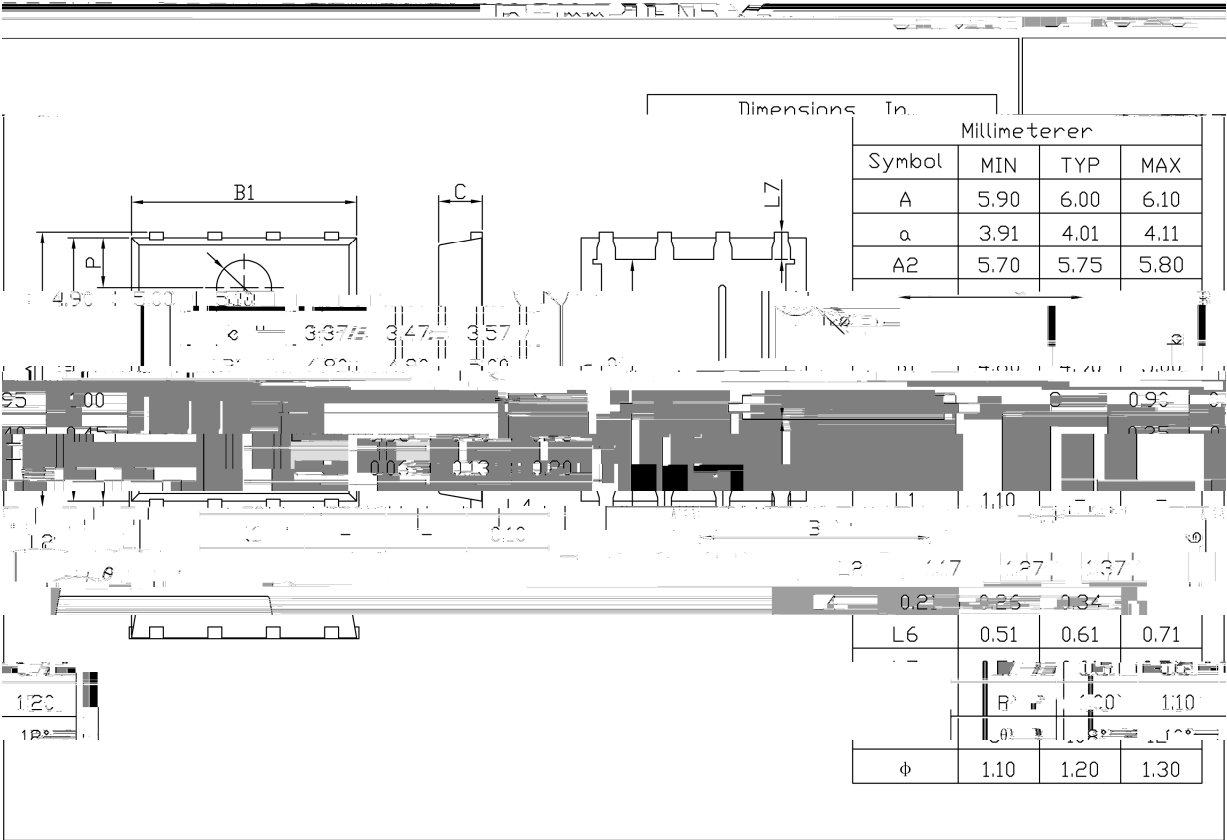
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=50V$ $R_L=2.5\ \Omega$ $R_{GEN}=3\ \Omega$		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

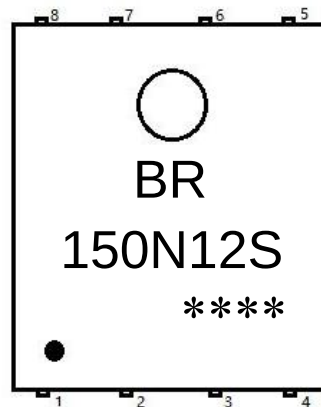


/ Package Dimensions



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/ Marking Instructions



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Note

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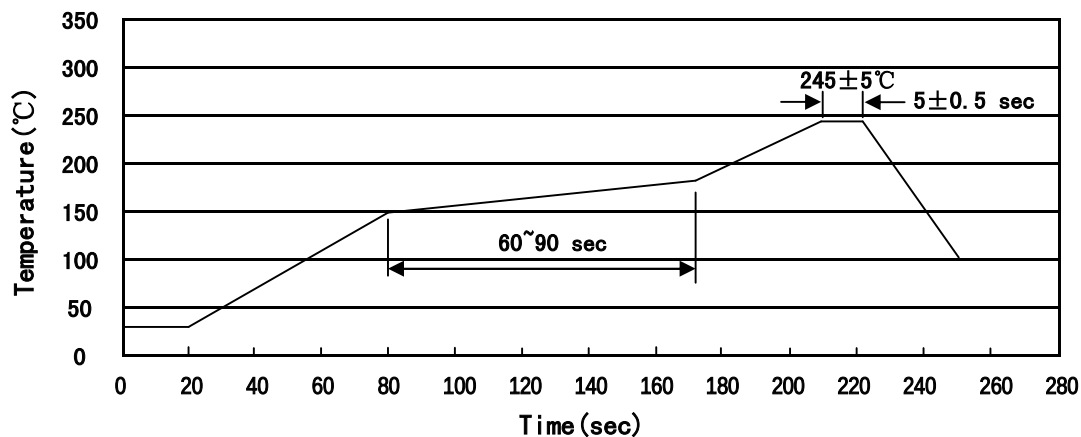
Company Code

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°C, Time:60~90sec. |
| 2 | 245±5 | | | 5±0.5sec; | 2.Peak Temp.:245±5°C, Duration:5±0.5sec. |
| 3 | | | 2 | 10°C/sec. | 3. Cooling Speed: 2~10°C/sec. |

/ Resistance to Soldering Heat Test Conditions

260±5°C 10±1 sec. Temp.:260±5°C 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