A	2020.12.20	All	AOS-AONS36302		

/ Descriptions

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

/ Features

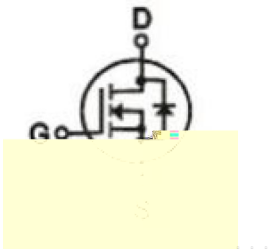
Low $R_{DS(ON)}$ to minimize conductive loss, low Gate Charge for fast switching, Low Thermal resistance, HF Product.

/ Applications

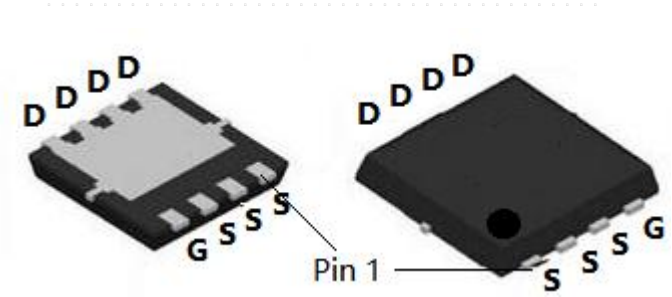
MB/NB/UMPC/VGA Buck -

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

/ h_{FE} Classifications & Marking

！ " 。See Marking Instructions.

/ Absolute Maximum Ratings(T_a=25)

# $ Parameter		% & Symbol	$ ' Rating	( ) 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	℃
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	

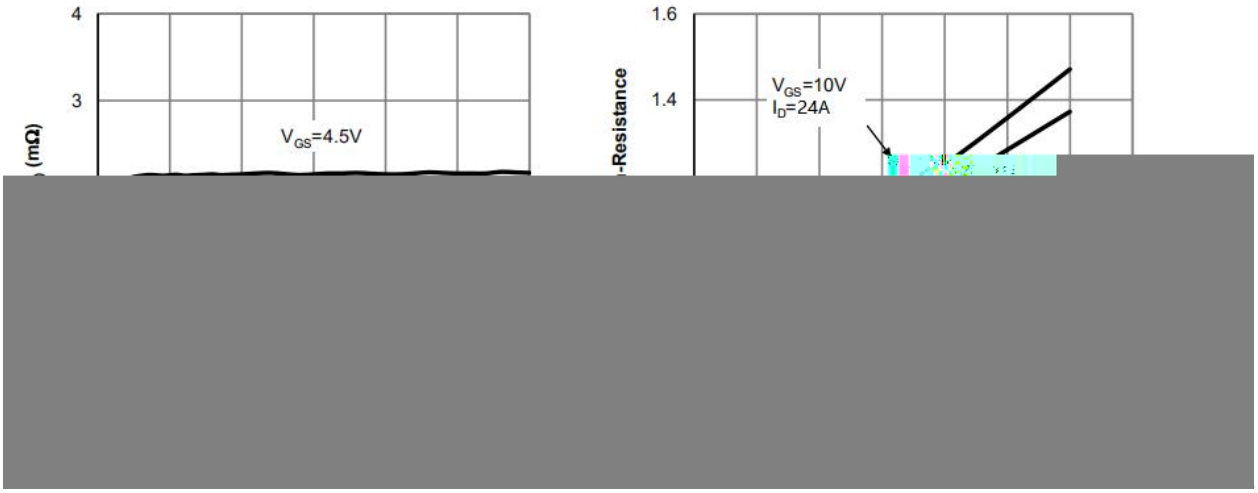
/ Electrical Characteristics(Ta=25)

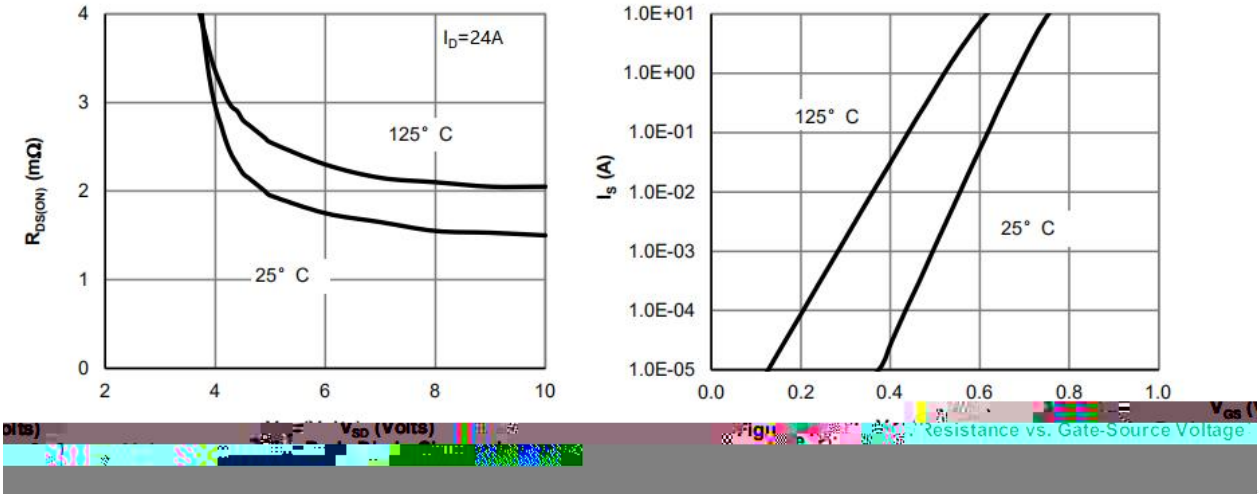
# $ Parameter	% & Symbol	* + , - Test Conditions	. / ' Min	0 1 ' Typ	. 2 ' Max	( ) Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=250uA, V_{GS}=0V	30	35		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=0V			1.0	uA
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}= ±20V			±100	nA
Gate 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	mΩ
		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}	V_{DS}=25V V_{GS}=0V f=1.0MHz		8500		pF
Output Capacitance	C_{oss}			890		
Reverse Transfer Capacitance	C_{rss}			670		
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		1.8		Ω
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V, V_{DS}=15V, I_D=20A		60		nC
Total Gate Charge	$Q_{g(4.5V)}$			28		
Gate Source Charge	Q_{gs}			12		
Gate Drain Charge	Q_{gd}			9.5		

/ Electrical Characteristics(Ta=25)

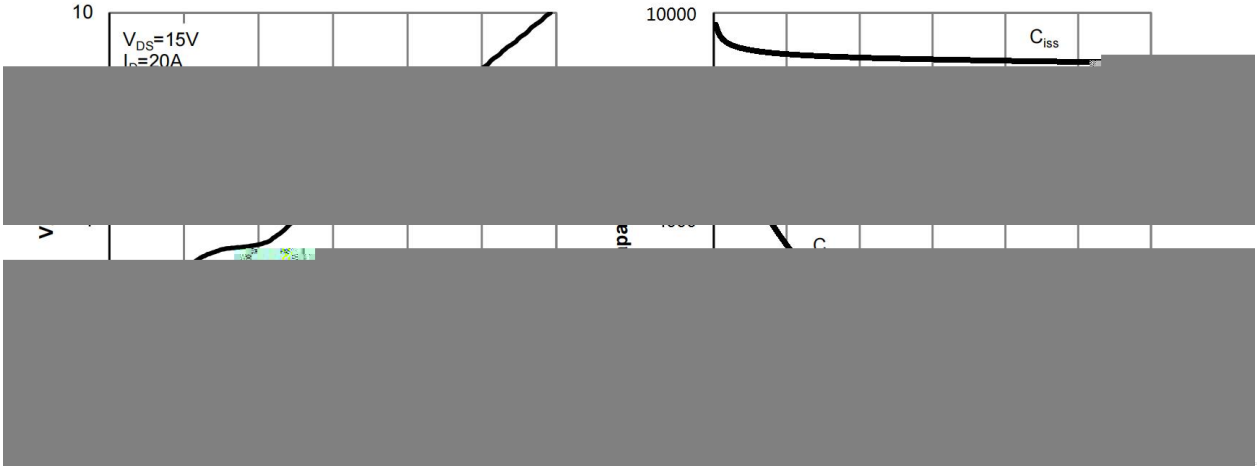
# $ Parameter	% & Symbol	* + , - Test Conditions	. / ' Min	0 1 ' Typ	. 2 ' Max	( ) Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=15V R_L=0.75Ω R_{GEN}=3Ω		12.5		ns
Turn-On Rise Time	t_r			6.0		
Turn-Off Delay Time	$t_{d(off)}$			47		
Turn-Off Fall Time	t_f			10.5		

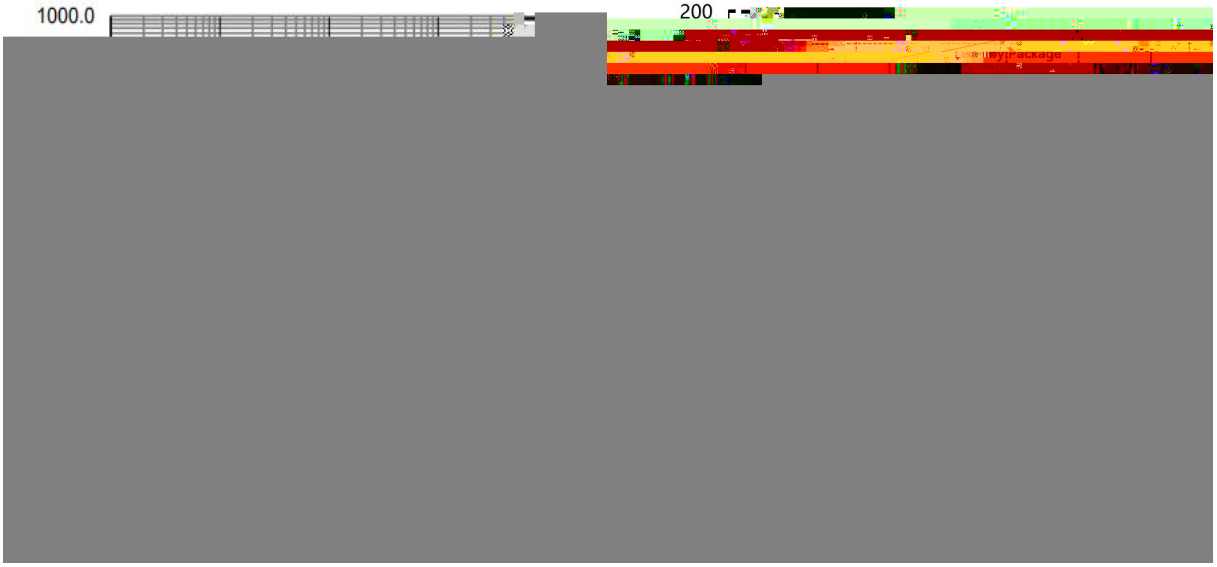
/ Electrical Characteristic Curve

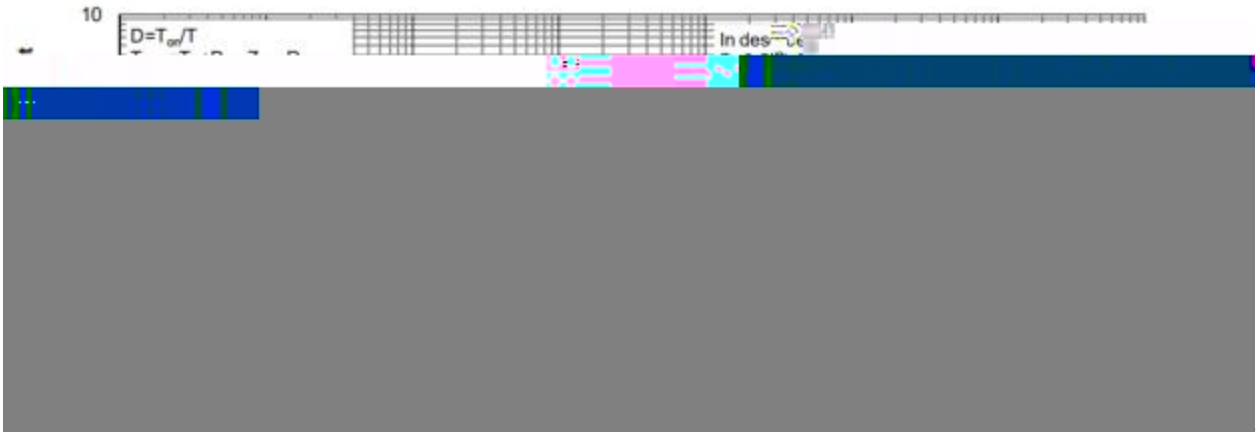




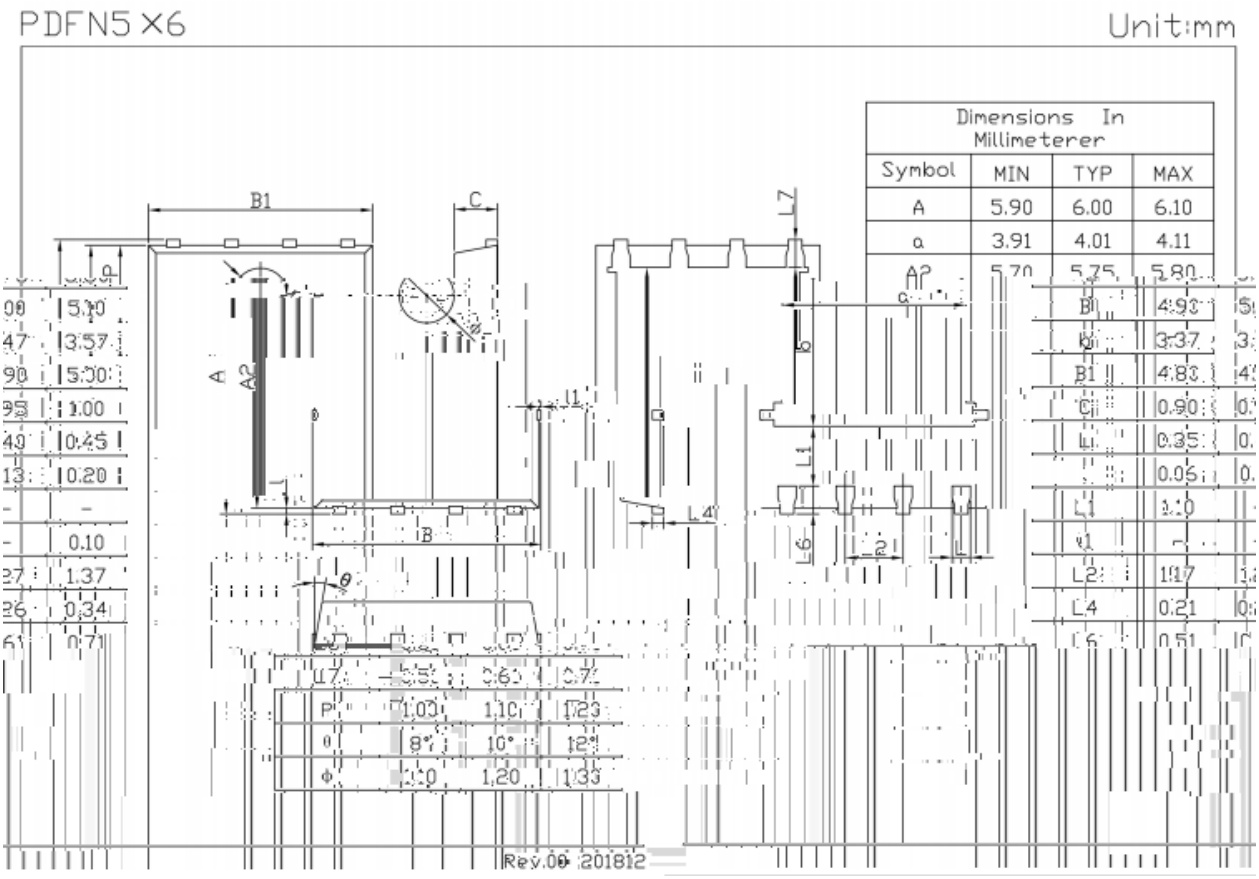
/ Electrical Characteristic Curve



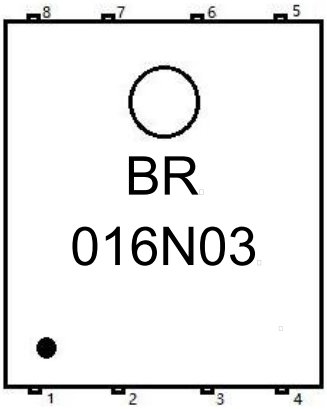




/ Package Dimensions



/ Marking Instructions



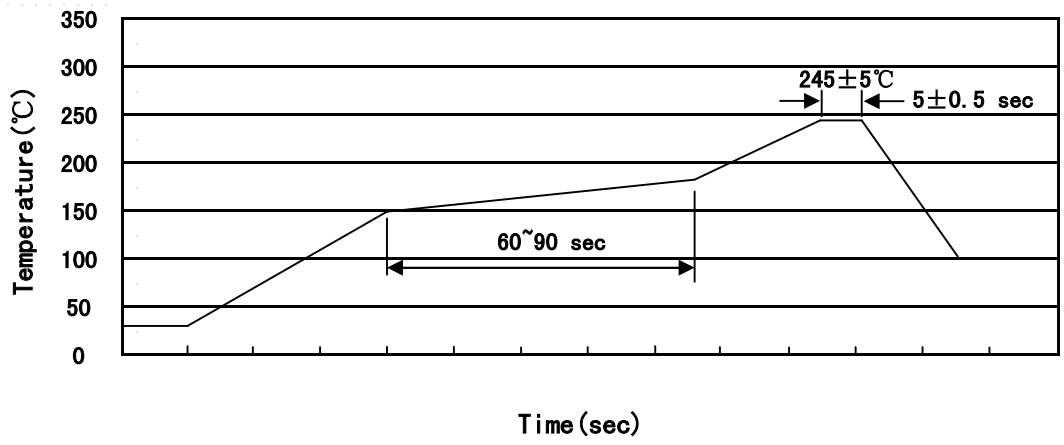
! " 3

BR 3	4 5 6 7 8
016N03 3	4 1 & 7 8
**** 3	4 9 : ; & 7 8 < = 9 : ; & > ?

Note:

BR:	Company Code.
016N03:	Product Type Code.
****:	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)		
	只/卷盘	卷盘/盒	只/盒	盒/箱	只/箱		盒	箱
PDFN5×6	5000	2	10000	6	60000	13" × 12	360 × 360 × 50	380 × 335 × 366

/ Notices