/ Revised record

A	2022.1.13	ALL	AOS-AOD2144		

BRCS016N03DP

Rev.A Jan.-2022

DATA SHEET

TO-252 塑封封装 N 沟道场效应管。

N-CHANNEL MOSFET in a TO-252 Plastic Pac

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	30	V
Drain Current		I_D(Tc=25℃)	125	A
Drain Current - Pulsed		I_{DM}	213	A
Gate-Source Voltage		V_{GS}	±20	V
Avalanche Current		I_{AS}	24	A
Single Pulsed Avalanche Energy(L=0.5mH)		E_{AS}	302.4	mJ
Power Dissipation		P_D(Tc=25℃)	156	W
Storage Temperature Range		T_{stg}	-55 to 150	℃
Thermal Resistance-Junction to Ambient	t≤10s	$R_{\theta JA}$	20	℃/W
	Steady-State		50	
Thermal Resistance-Junction to Case	Steady-State	$R_{\theta JC}$	0.8	

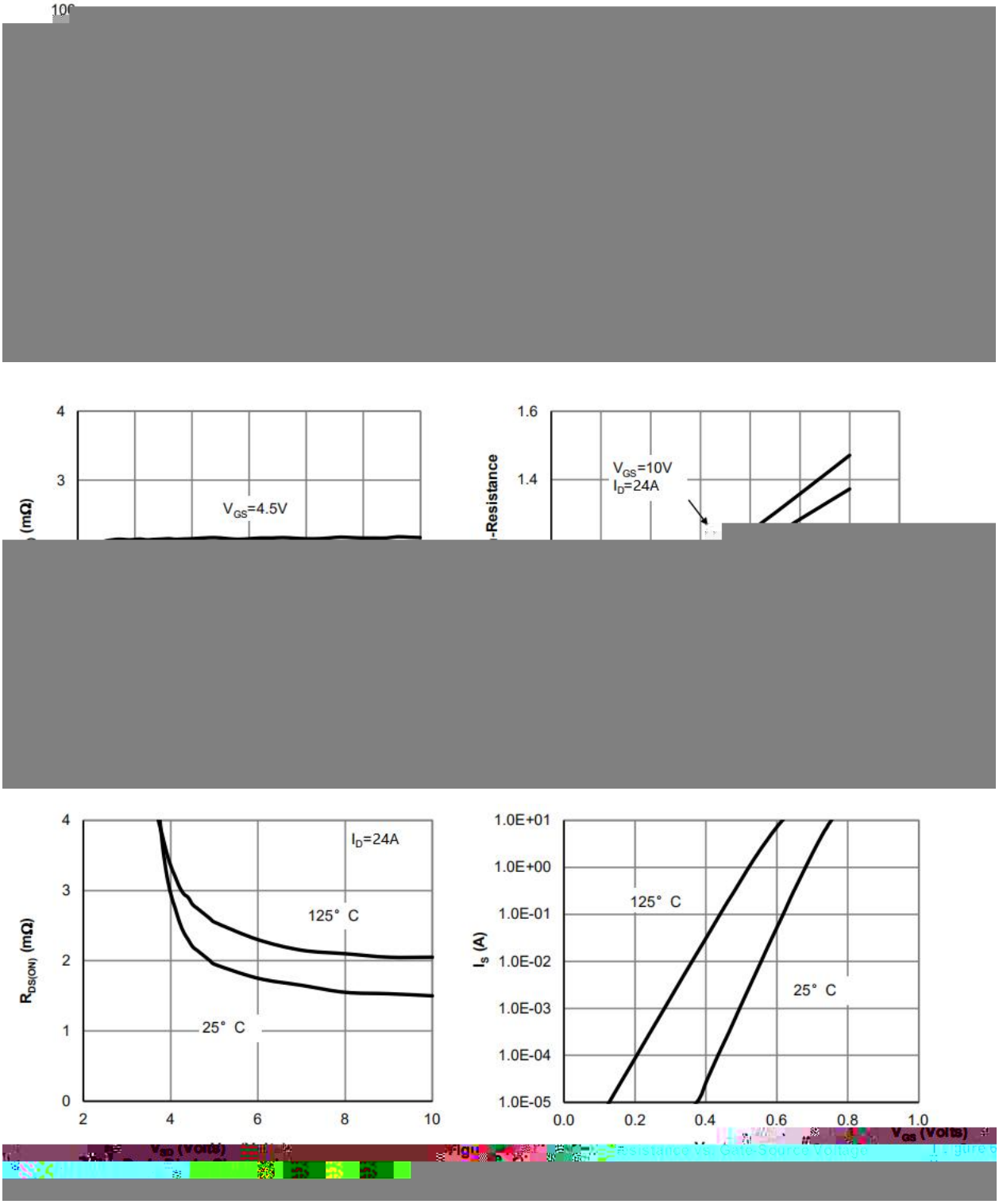
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	30	35		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V V_{GS}=0V			1.0	μA
		V_{DS}=24V T_C=150℃			10	
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	1.0	1.6	2.8	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=20A		1.6	2.0	mΩ
		V_{GS}=4.5V I_D=10A		2.3	3.0	
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=1A			1.2	V
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V, f=1MHz		1.8		Ω
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		
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)

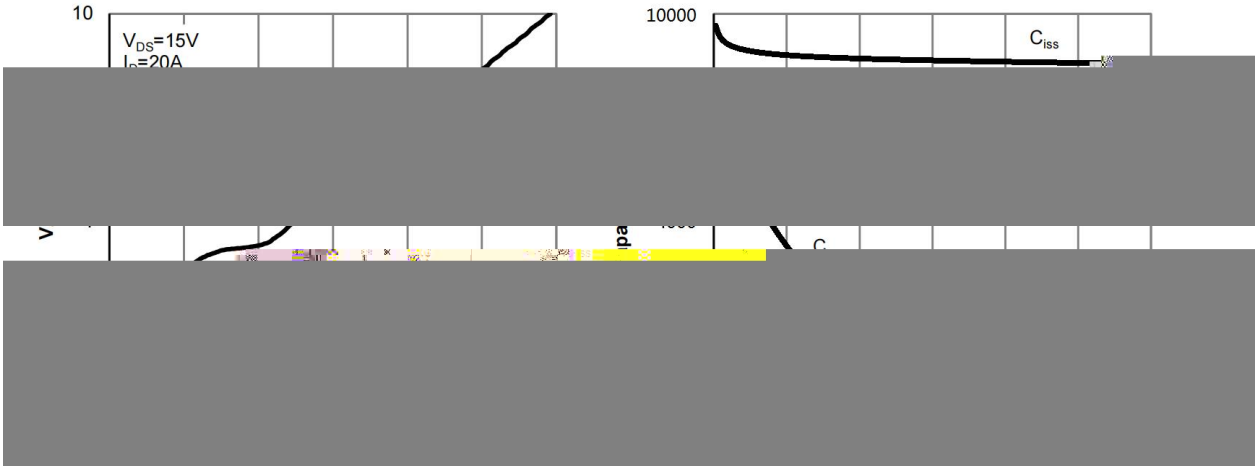
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=15V R_L=0.75Ω R_{GEN}=3Ω		12.5		ns
Turn-On Rise Time	t_r			6.0		
Turn-Off Delay Time	$t_{d(off)}$			47		
Turn-Off Fall Time	t_f			10.5		

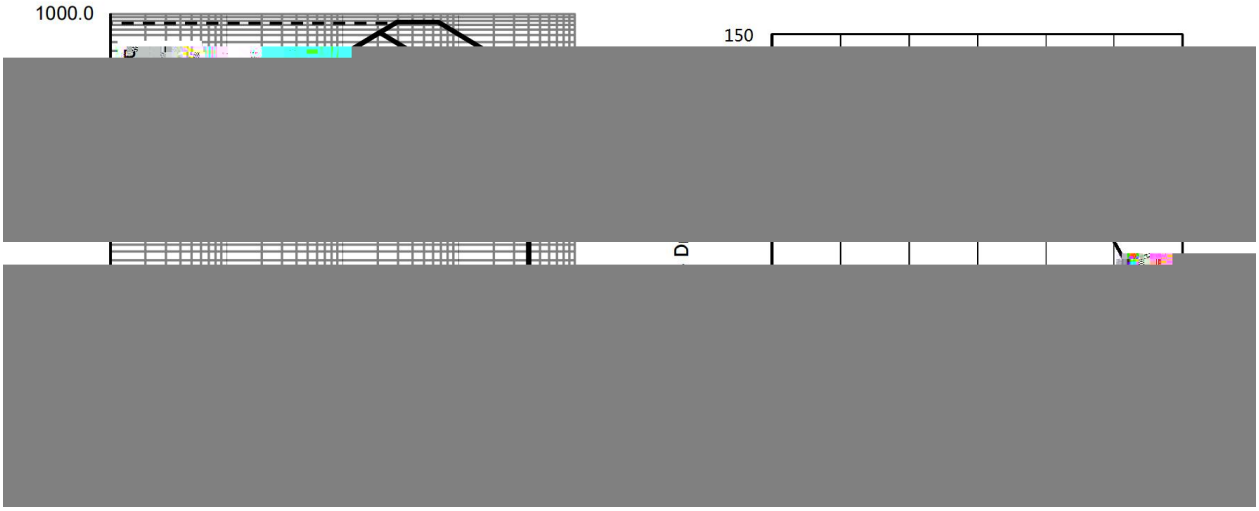
/ Electrical Characteristic Curve

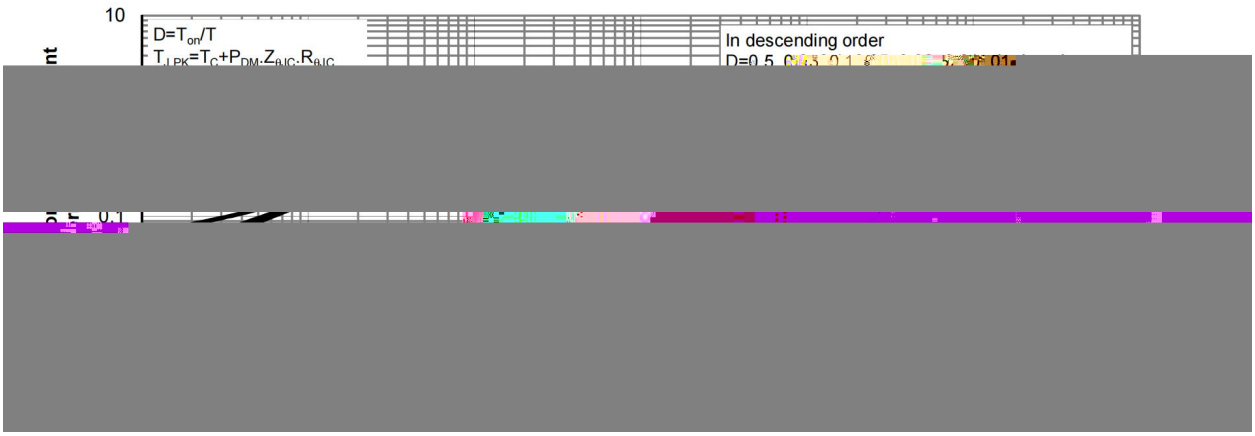


Figu Resistance Vs Gate-Source Voltage Figure 6

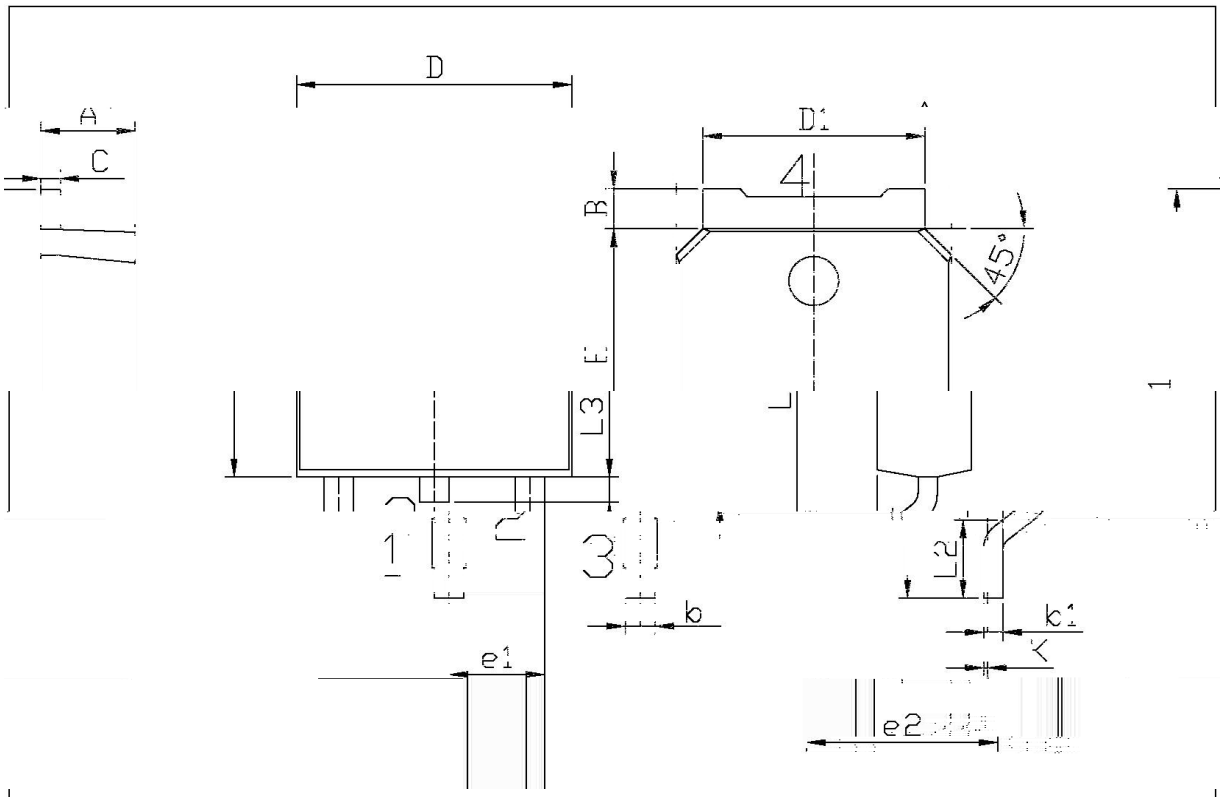
/ Electrical Characteristic Curve







/ Package Dimensions

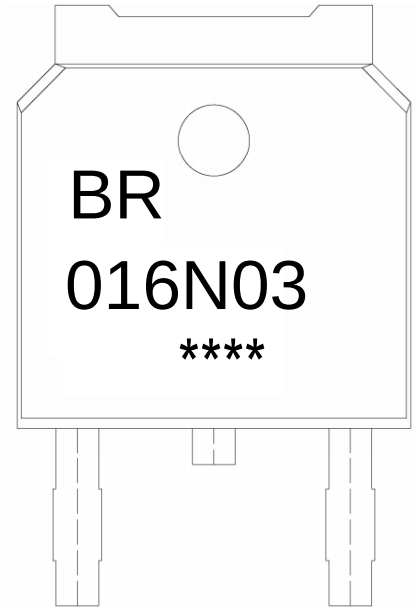


单位：mm

Symbol	Min	Max	Symbol	Min	Max
	5.95	6.25	A	2.20	2.40
	2.24	2.34	B	0.95	1.25
	0.70	0.90	e2	4.43	4.73
	0.45	0.55	L1	9.85	10.35
	1.70	2.00	C	0.45	0.55
	L3	0.60	0.90	D	6.45

TO-252

/ Marking Instructions



BR

016N03

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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;

2 245 5 5 0.5sec;

3 2 10 /sec.

1.Preheating:150~180 , Time:60~90sec.

2.Peak Temp.:245 5 , Duration:5 0.5sec.

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 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
TO-252	2,500	2	5,000	6	30,000	13″ ×16	360×360×50	380×335×366

/ TUBE

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm^3)
	Units/Tube 只/套管	Tubes/Inner Box 套管/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box	