

/ Revised record

A	2022.1.13	ALL	AOS-AOD2144		

BRCS016N03DP

Rev.A Jan.-2022



TO-252 塑封封装 N 沟道场效应管。
N-CHANNEL MOSFET in a TO-252

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	30	V
Drain Current		$I_D(T_c=25^{\circ}C)$	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		$P_D(T_c=25^{\circ}C)$	156	W
Storage Temperature Range		T_{stg}	-55 to 150	$^{\circ}C$
Thermal Resistance-Junction to Ambient	$t \leq 10s$	$R_{\theta JA}$	20	$^{\circ}C/W$
	Steady-State		50	
Thermal Resistance-Junction to Case	Steady-State	$R_{\theta JC}$	0.8	

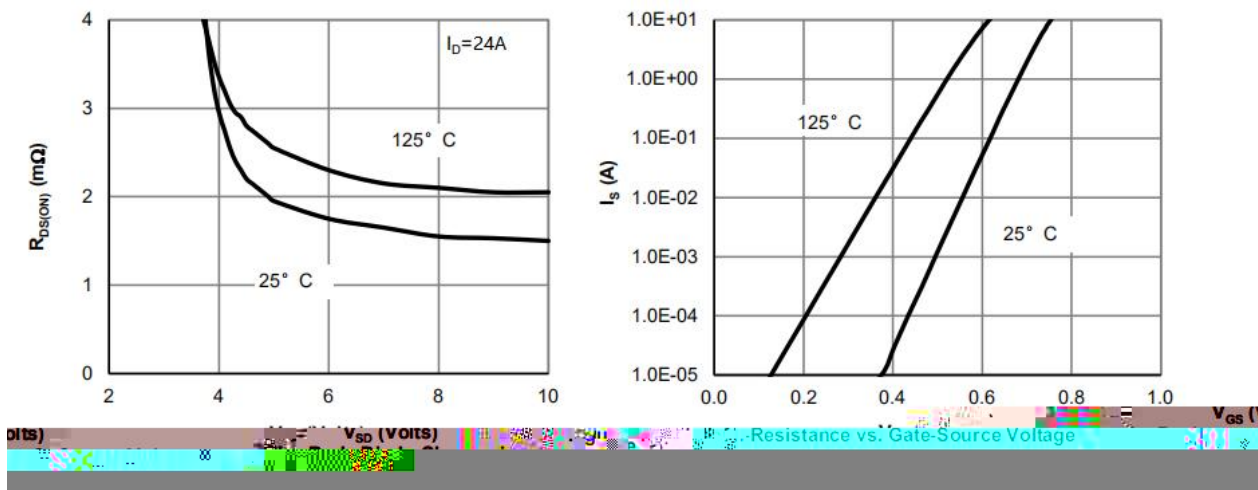
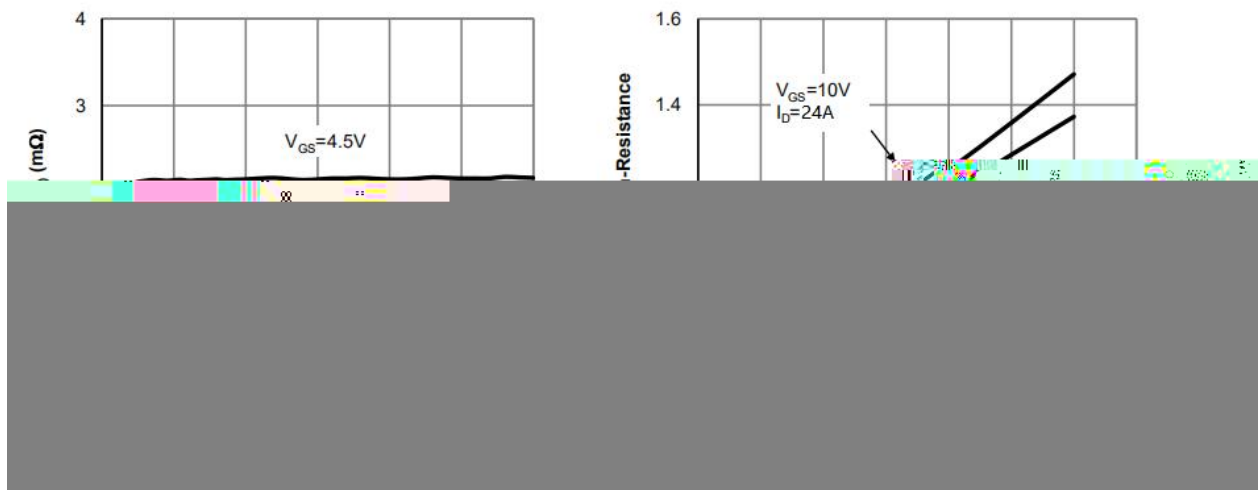
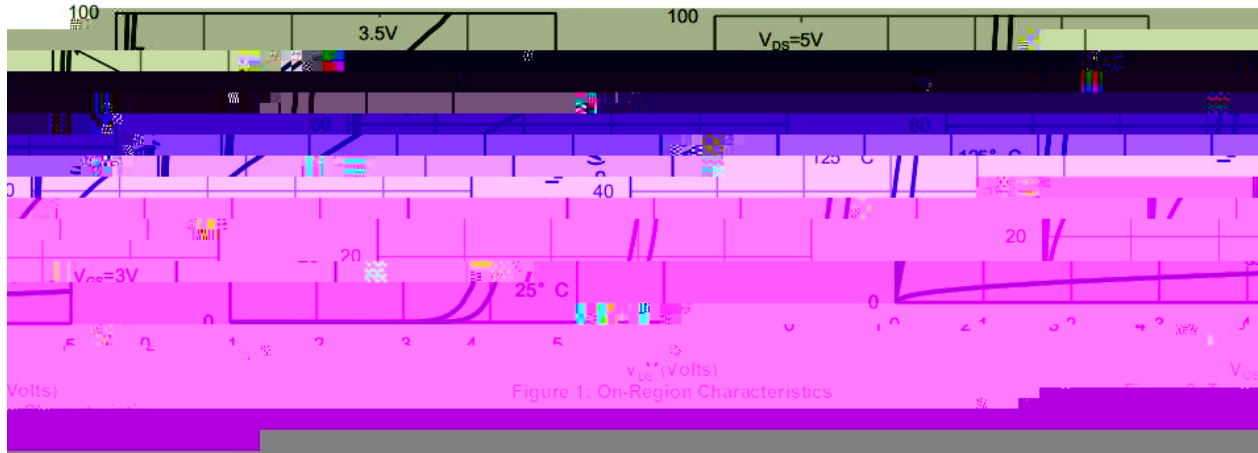
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	30	35		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$ $V_{GS}=0V$			1.0	μA
		$V_{DS}=24V$ $T_C=150^{\circ}C$			10	
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	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	m Ω
		$V_{GS}=4.5V$ $I_D=10A$		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		

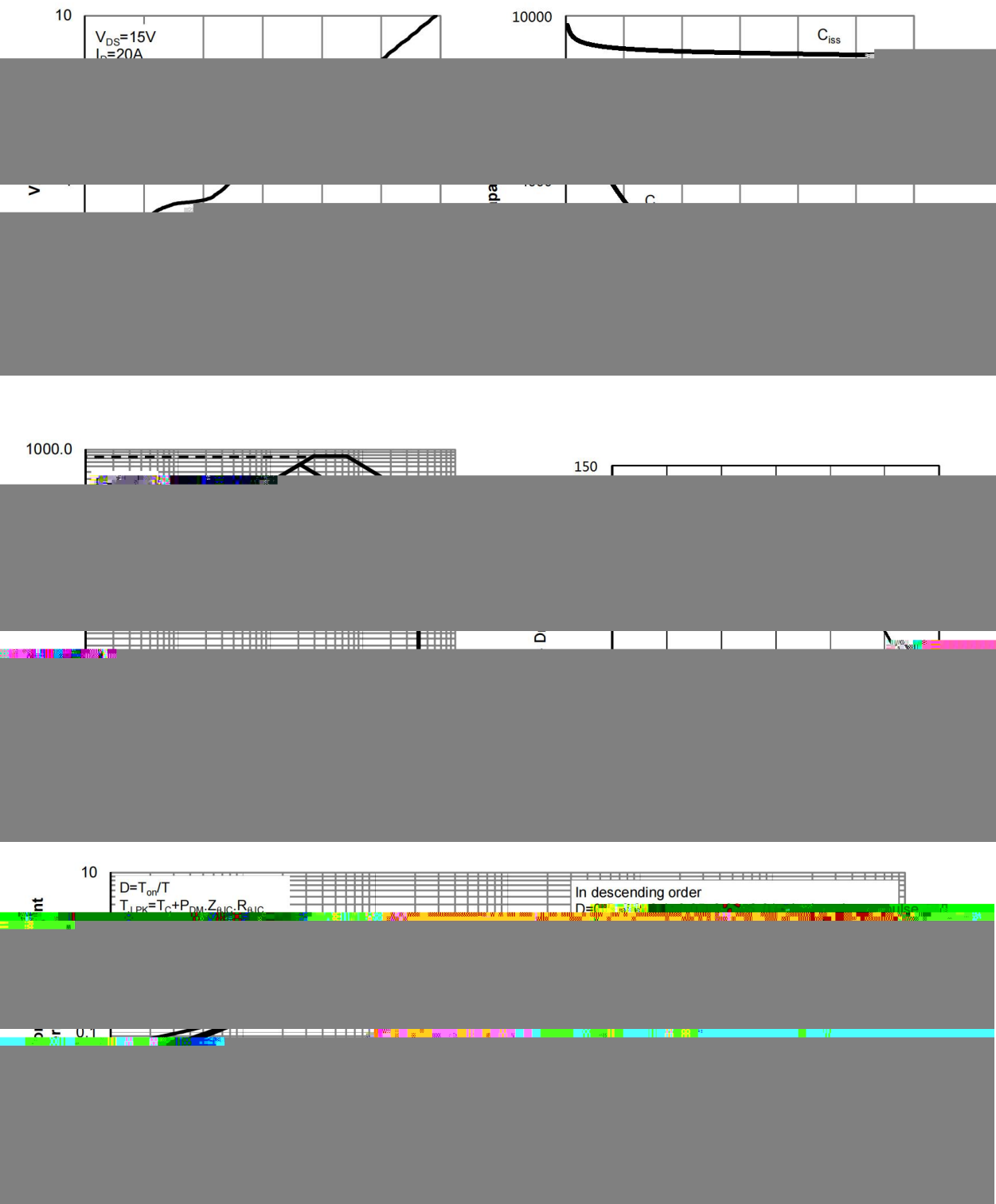
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=15V$ $R_L=0.75\ \Omega$ $R_{GEN}=3\ \Omega$		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		

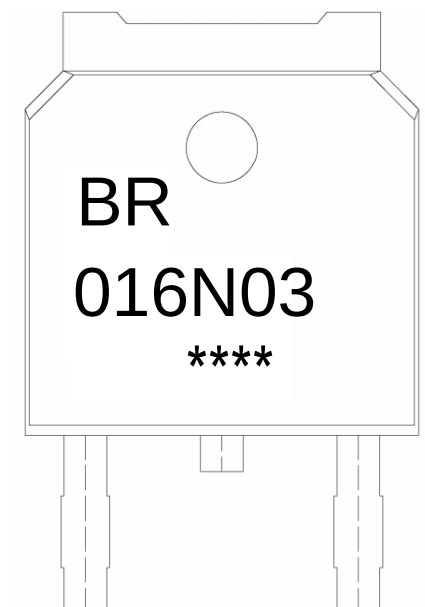
/ Electrical Characteristic Curve



/ Electrical Characteristic Curve



/ Marking Instructions



BR

016N03

Note:

BR: Company Code

016N03: Product Type Code.

****: Lot No. Code, code change with Lot No.

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

- 11501806090sec;Preheating:150~180, Time:60~90sec.
- 2245±55±0.5sec;Peak Temp.:245±5, Duration:5±0.5sec.
- 3210/sec.Soldering Speed: 2~10/sec.

/ Resistance to Soldering Heat Conditions

260±510±1 sec.260±5℃Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量				Box	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		Reel	Inner Box 盒	Outer Box 箱
T0-252	2,500	2	5,000	6		13" ×16	360×360×50	380×335×366

/ TUBE

Package Type 封装形式	Units 包装数量			Units/Outer Box
	只/套管	套管/盒	盒/箱	