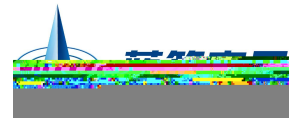


/ Revised record

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		$I_D(T_c=25^{\circ}C)$	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	

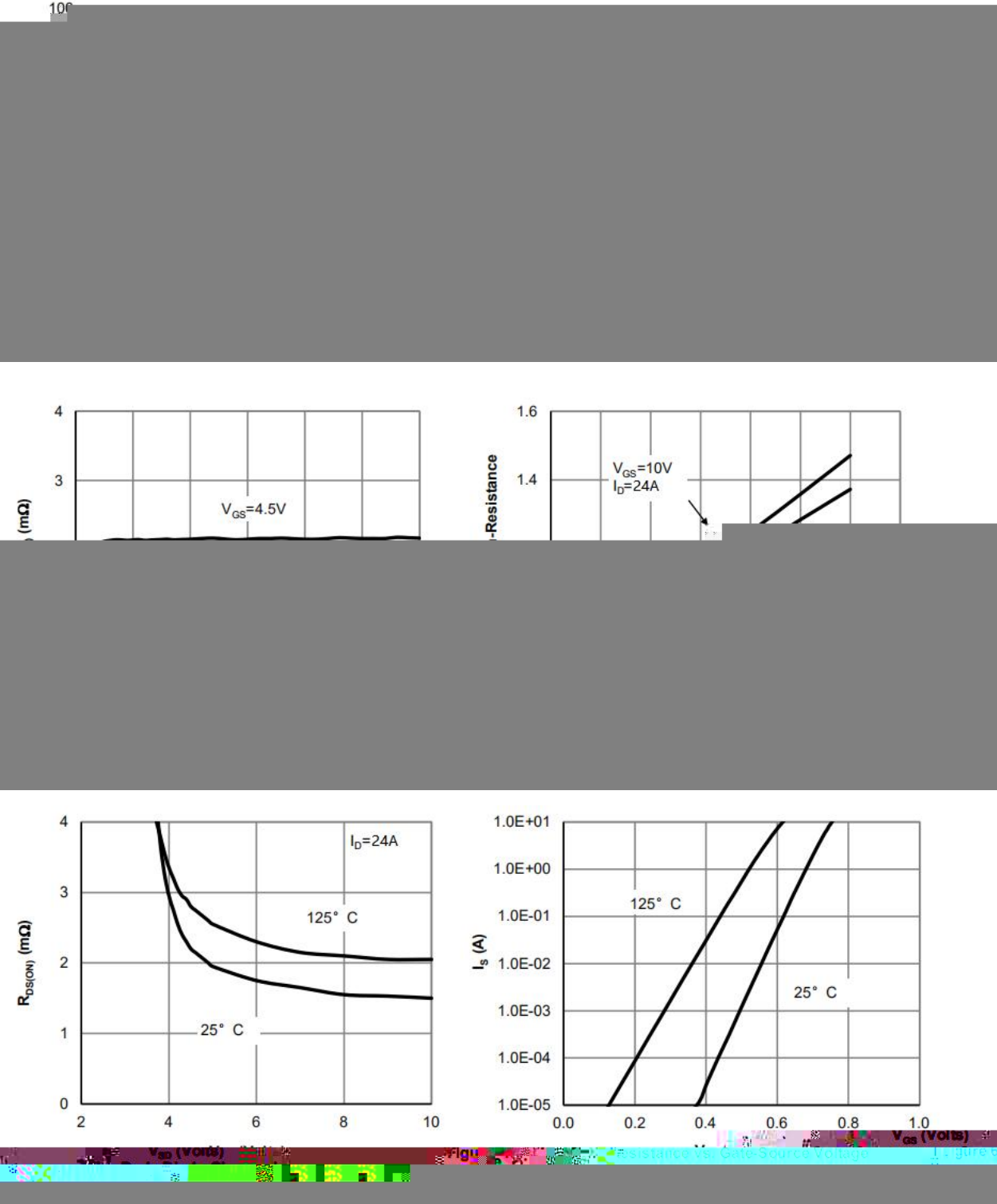
/ Electrical Characteristics(Ta=25)

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		

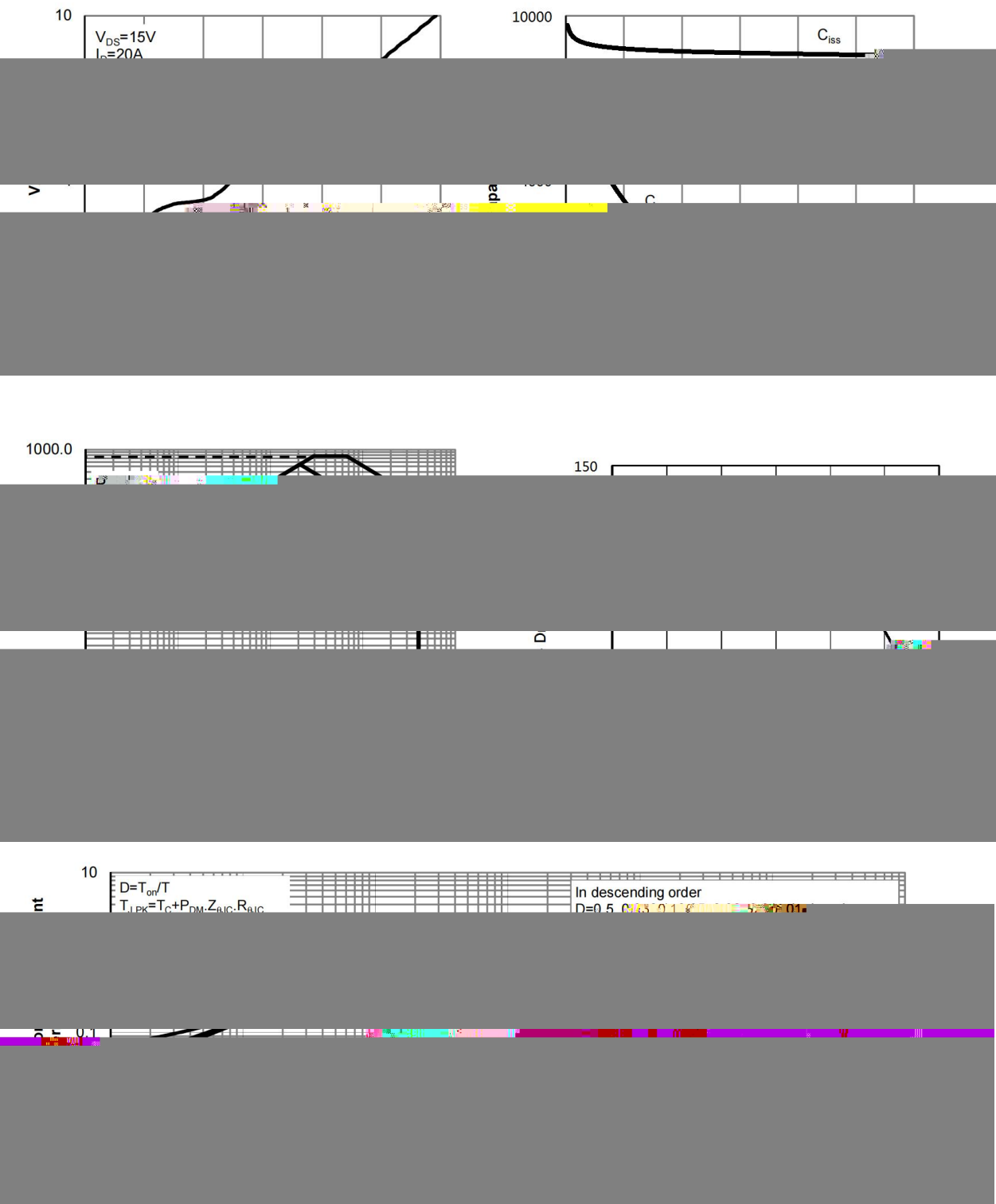
/ Electrical Characteristics(Ta=25)

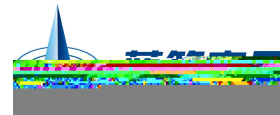
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=15V$ $R_L=0.75\ \Omega$ $R_{GEN}=3\ \Omega$		12.5		ns
Turn-On Rise Time	t_r			6.0		
Turn-Off Delay Time	$t_{d(off)}$			47		
Turn-Off Fall Time	t_f			10.5		

/ Electrical Characteristic Curve

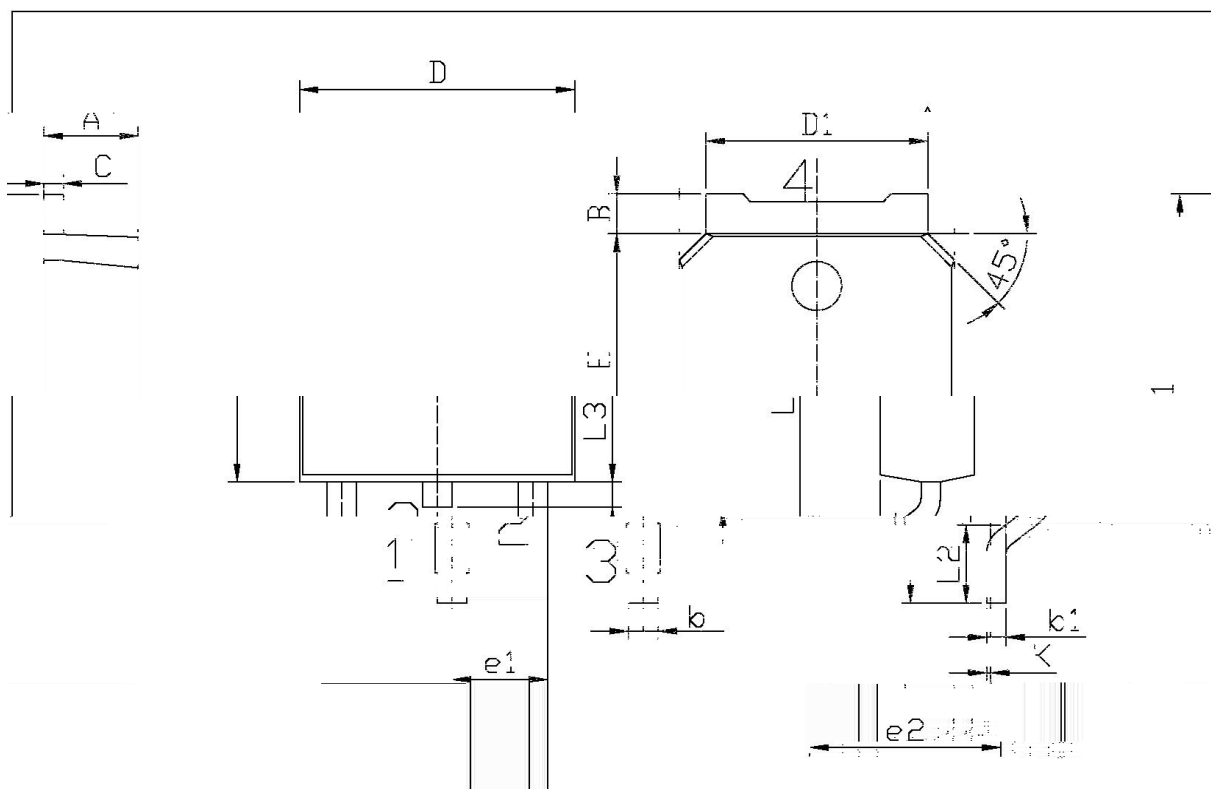


/ Electrical Characteristic Curve





/ Package Dimensions

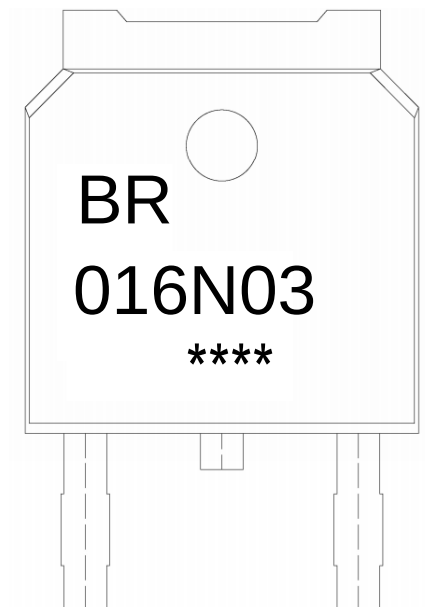


单位: mm

Dimensions in Millimeters				Dimensions in Millimeters			
Symbol	Min	Max	Typ	Symbol	Min	Max	Typ
A	5.95	6.25		A	2.20	2.40	
B	2.24	2.34		B	0.95	1.25	
C	0.70	0.90		C	4.43	4.73	
D	0.45	0.55		D	9.85	10.35	
E	1.70	2.00		E	0.45	0.55	
L1	0.60	0.90		L1	6.45	6.75	
L2	0.60	0.90		L2	5.00	5.30	
L3	0.60	0.90		L3	5.00	5.30	
e1	0.60	0.90		e1	0.60	0.90	
e2	0.60	0.90		e2	0.60	0.90	
k1	0.60	0.90		k1	0.60	0.90	

T0-252

/ Marking Instructions



BR

016N03

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)		
	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			