/ 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	2022.2.12	ALL	参照 AOS-AOD294A 规格书创建本厂规格书	庞隆基	陈逸晞

/ Descriptions

TO-252 塑封封装 N 沟道场效应管。

N-CHANNEL MOSFET in a TO-252 Plastic Package.

/ Features

$R_{DS(on)}$小，门电荷低，C_{rss} 小，开关速度快，无卤产品。

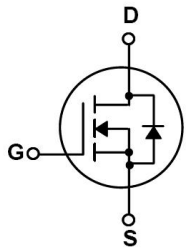
Low $R_{DS(on)}$,low gate charge, low C_{rss}, fast switching, HF Product.

/ Applications

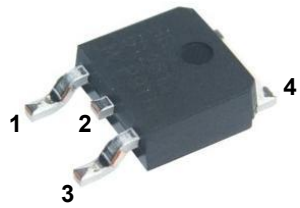
用于低压电路如：汽车电路、DC/DC 转换、便携式产品的电源高效转换。

Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.

/ Equivalent Circuit



/ Pinning



PIN1：G　　PIN 2：D　　PIN 3：S　　PIN 4：D

/ Marking

见印章说明。

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

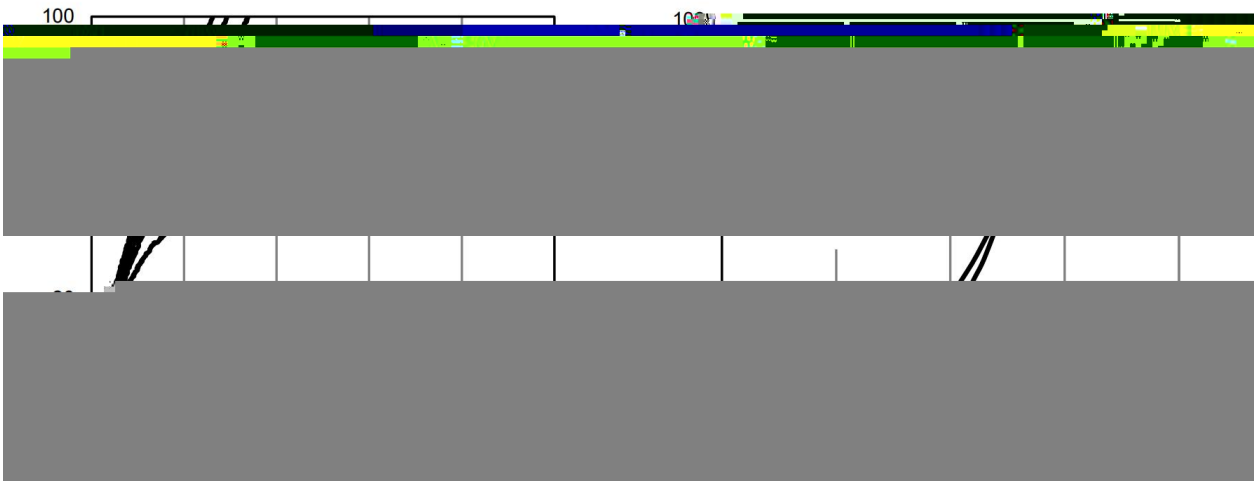
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	100	V
Drain Current		I_D(Tc=25℃)	55	A
Drain Current - Pulsed		I_{DM}	138	A
Gate-Source Voltage		V_{GS}	±20	V
Avalanche Current		I_{AS}	7.0	A
Single Pulsed Avalanche Energy(L=0.5mH)		E_{AS}	24.5	mJ
Power Dissipation		P_D(Tc=25℃)	73	W
Storage 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	$R_{\theta JC}$	1.7	

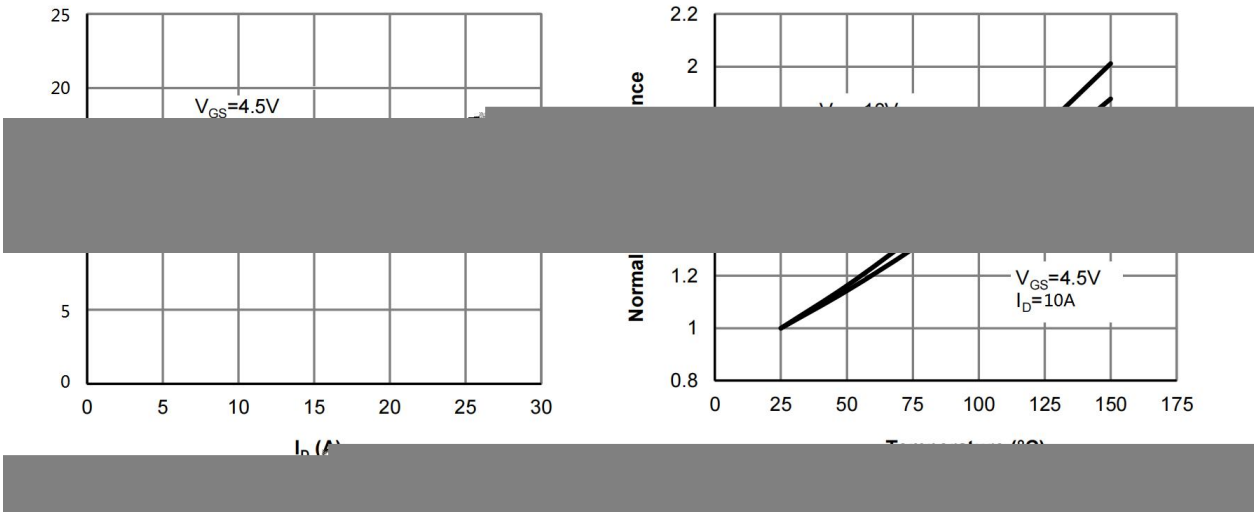
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	100	108		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=100V V_{GS}=0V			1.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	1.5	1.8	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=20A		13	15	mΩ
		V_{GS}=4.5V I_D=10A		18	25	
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		1.5		Ω
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		1140		pF
Output Capacitance	C_{oss}			600		
Reverse Transfer Capacitance	C_{rss}			60		
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V, V_{DS}=50V, I_D=20A		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		

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





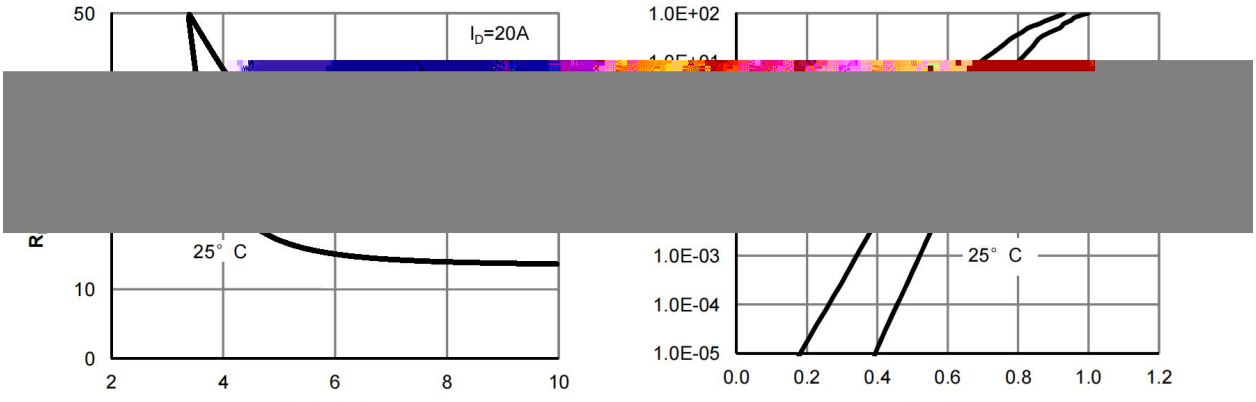
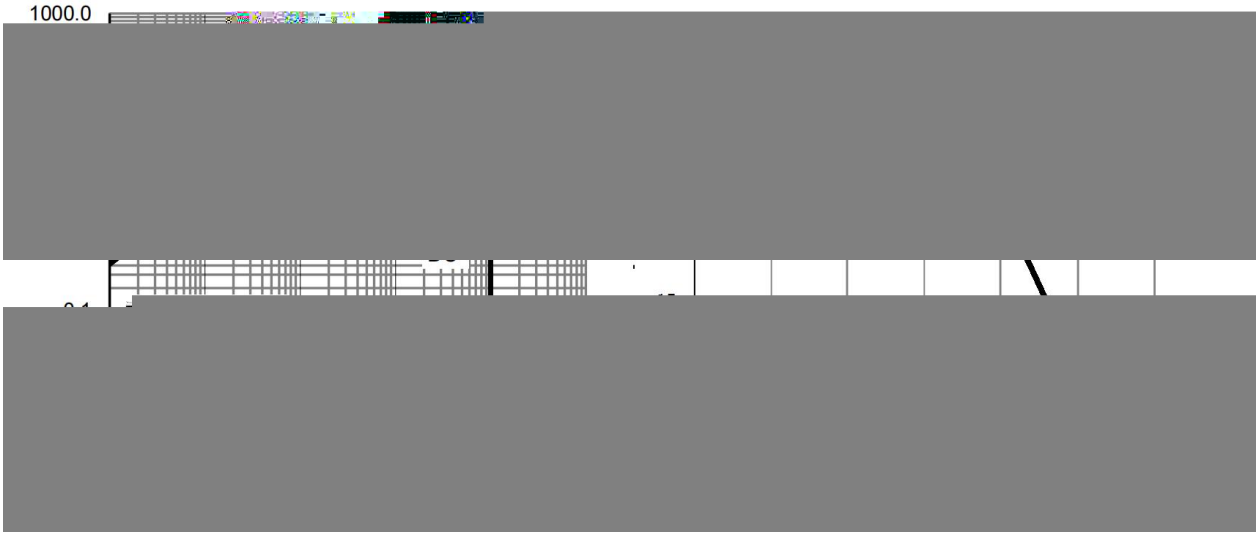
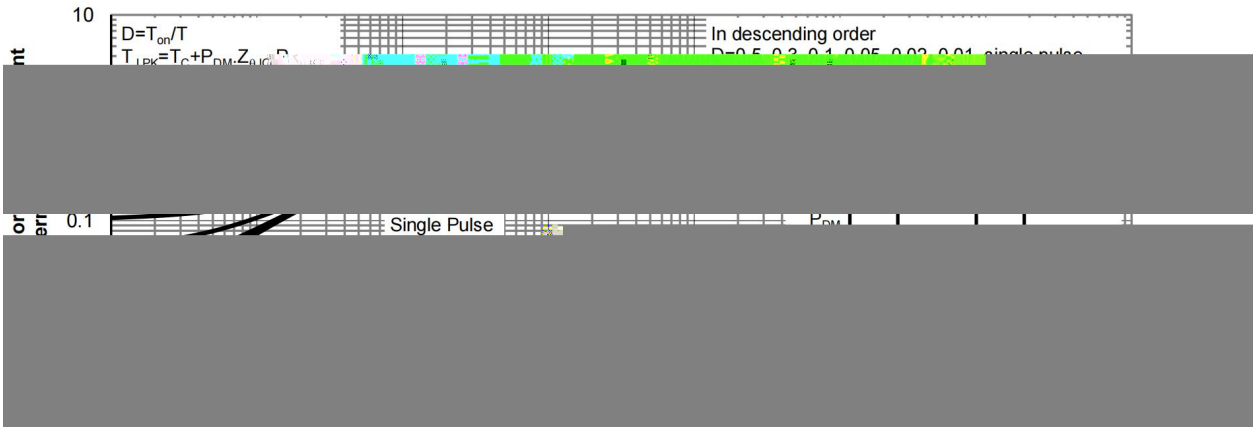


Figure 5: On-Resistance vs. Gate-Source Voltage

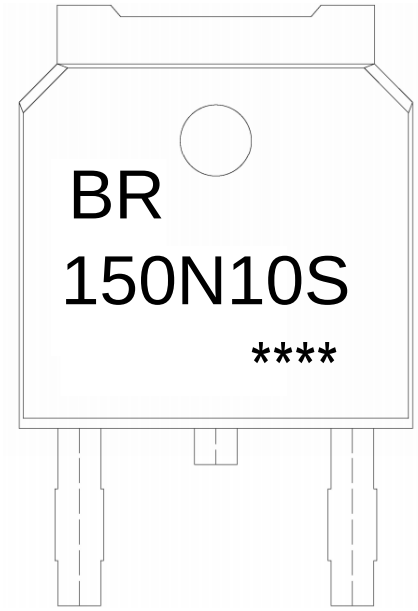
Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve





/ Marking Instructions



BR

150N10S

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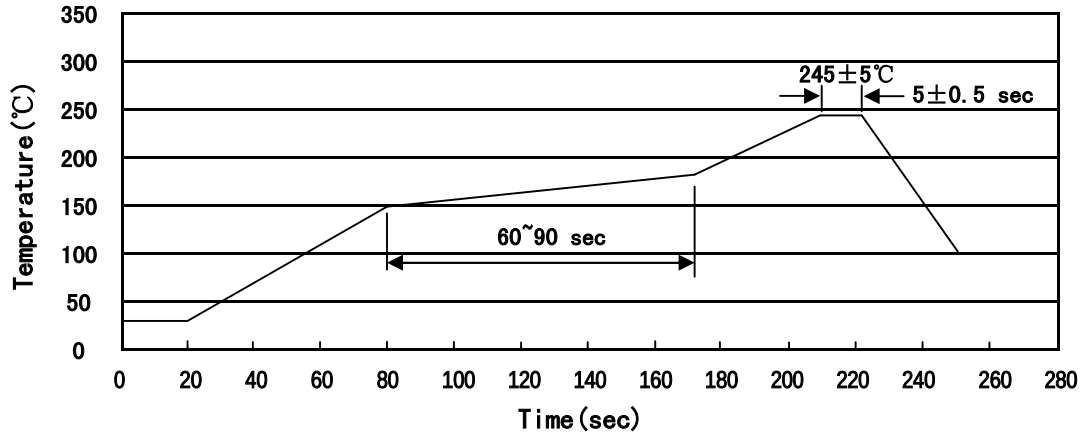
Note:

BR:	Company Code
150N10S:	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 只/箱	Tube 套管	Inner Box 盒	Outer Box 箱
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices