TO-252 N MOS

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

V_{DS} (V) = 30V

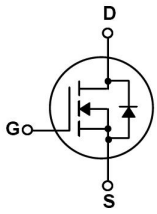
I_D =42A (V_{GS} = ¤ 20V)

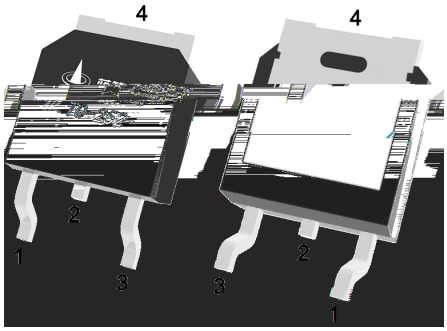
$R_{DS(ON)}$@10V Ů 12.5mR(Typ.11.7mR)

Â HF Product.

DC/DC

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.





PIN1 G PIN 2 D PIN 3 S PIN 4 D

See Marking Instructions.

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	30	V
Drain Current		I_D(Tc=25℃)	42	A
Drain Current - Pulsed		I_{DM}	90	A
Gate-Source Voltage		V_{GS}	±20	V
Single Pulsed Avalanche Energy		E_{AS}	48.4	mJ
Avalanche Current		I_{AS}	11	A
Power Dissipation		P_D(Tc=25℃)	36	W
Operating and Storage Temperature Range		T_J,T_{stg}	-55 to 150	
Junction-to-Ambient	t≤10	$R_{\theta JA}$	27	℃/W
Junction-to-Ambient	Steady-State		60	
Junction-to-Case	Steady-State	$R_{\theta JC}$	3.5	

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=250μA	30	36		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V	V_{GS}=0V			1	μA
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	1.5	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V	I_D=20A		11.7	12.5	mΩ
		V_{GS}=4.5V	I_D=10A		19	24	mΩ
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V	I_S=1A			1.2	V
Input Capacitance	C_{iss}	V_{DS}=25V f=1.0MHz	V_{GS}=0V		635		pF
Output Capacitance	C_{oss}				200		
Reverse Transfer Capacitance	C_{rss}				75		
Gate resistance	R_g	V_{GS}=0V f=1MHz	V_{DS}=0V		1.8		Ω
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V I_D=20A	V_{DS}=20V		8.1		nC
Total Gate Charge	$Q_{g(4.5V)}$				3.6		
Gate Source Charge	Q_{gs}				2.5		
Gate Drain Charge	Q_{gd}				1.8		

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}=3.0Ω		4.5		ns
Turn-On Rise Time	t_r			8.1		
Turn-Off Delay Time	$t_{d(off)}$			15.5		
Turn-Off Fall Time	t_f			3.5		

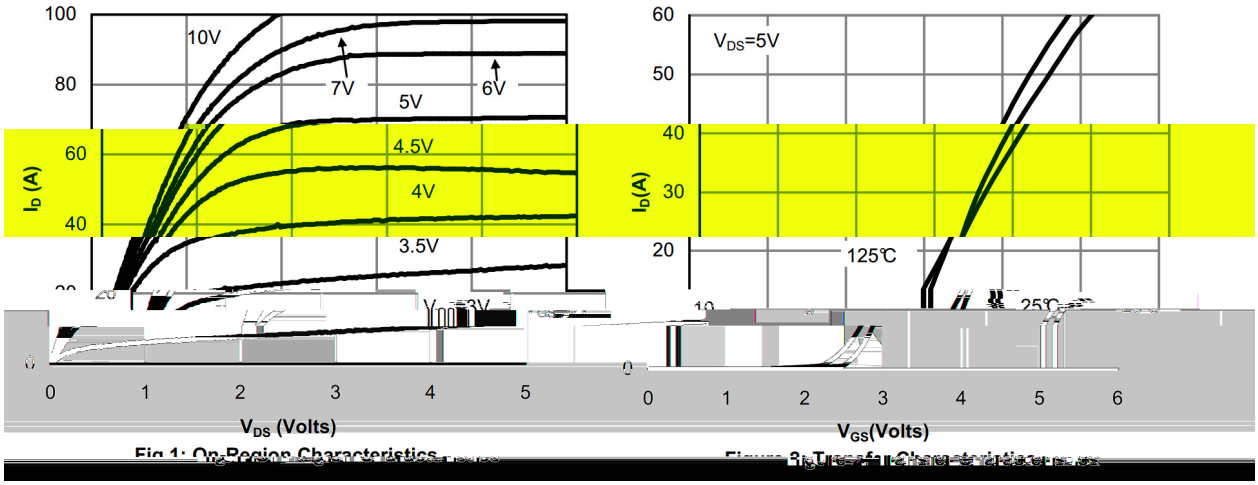
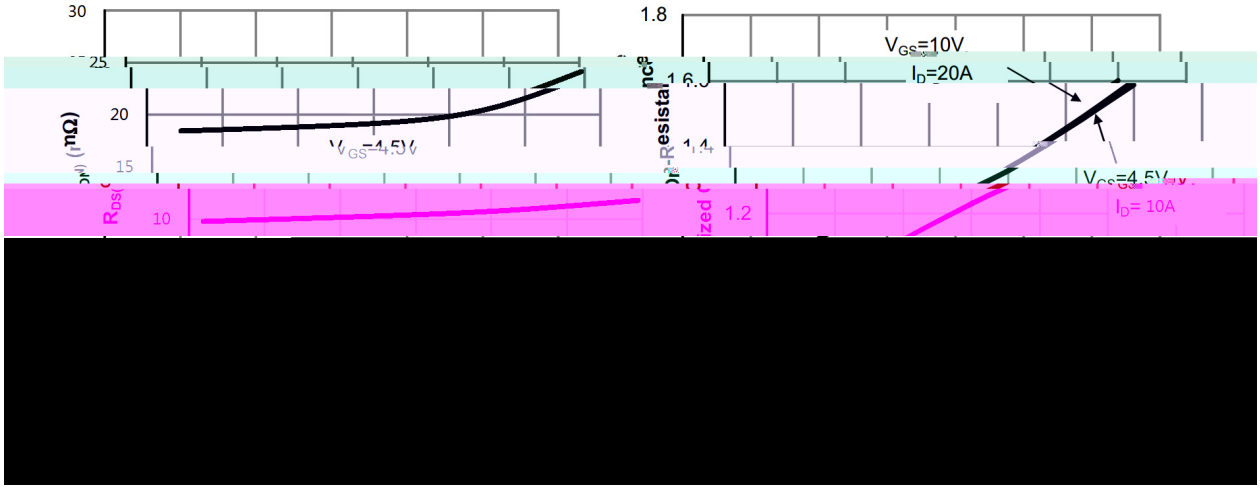


Fig 1: On-Region Characteristics

Figure 3: Transfer Characteristics



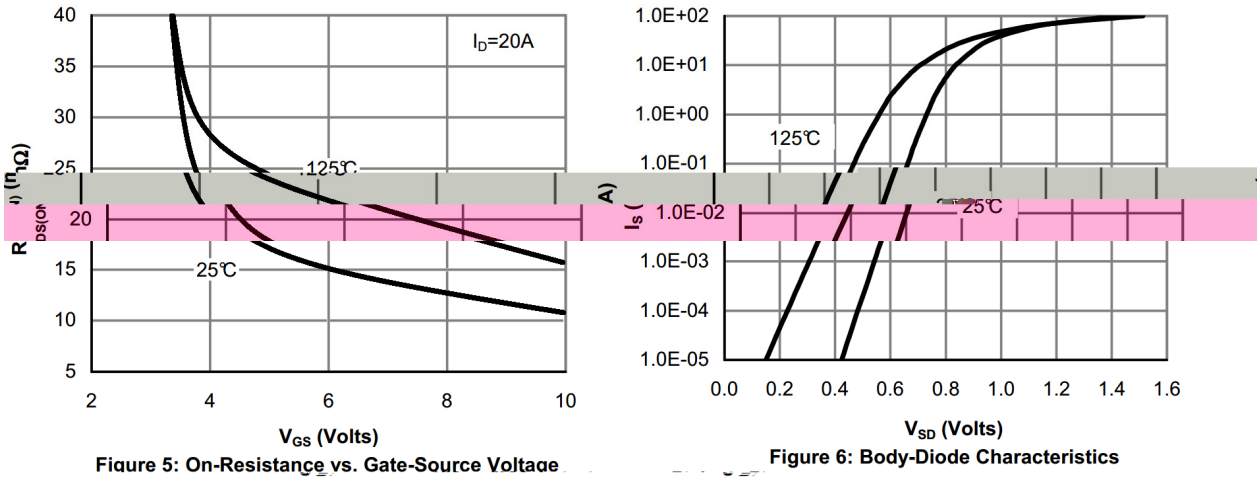
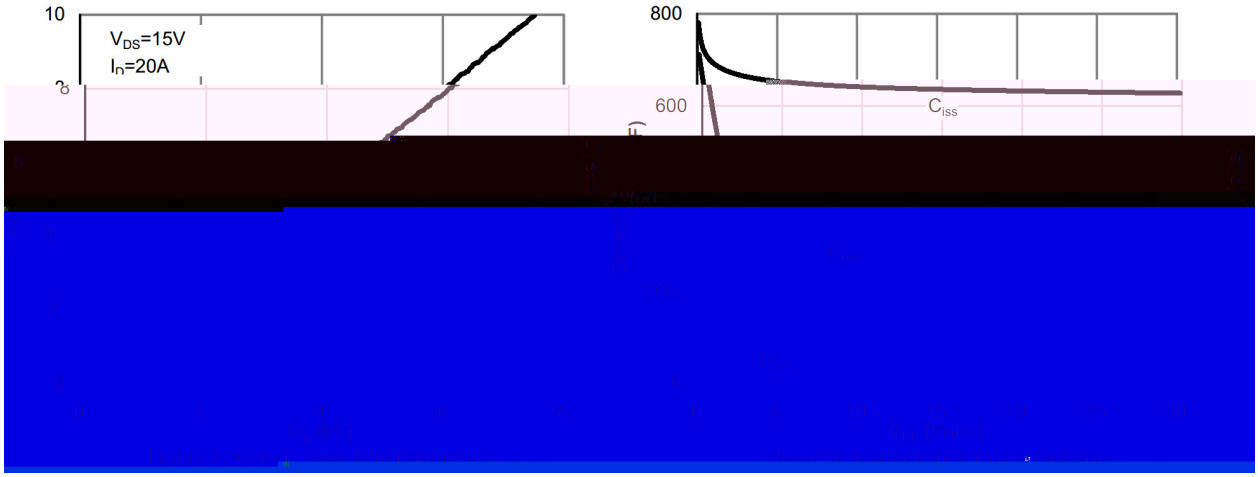


Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6: Body-Diode Characteristics



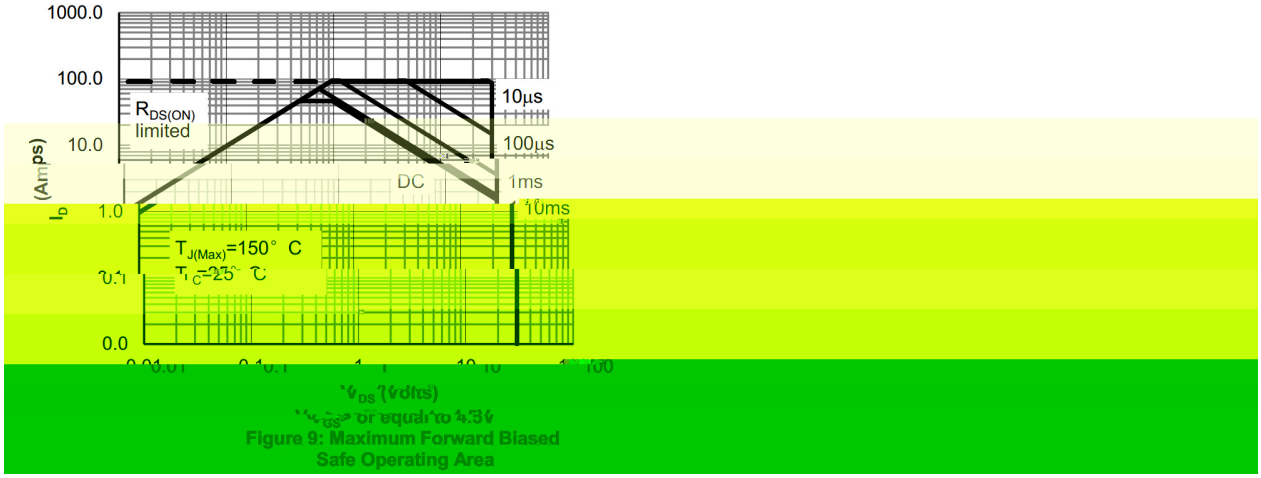
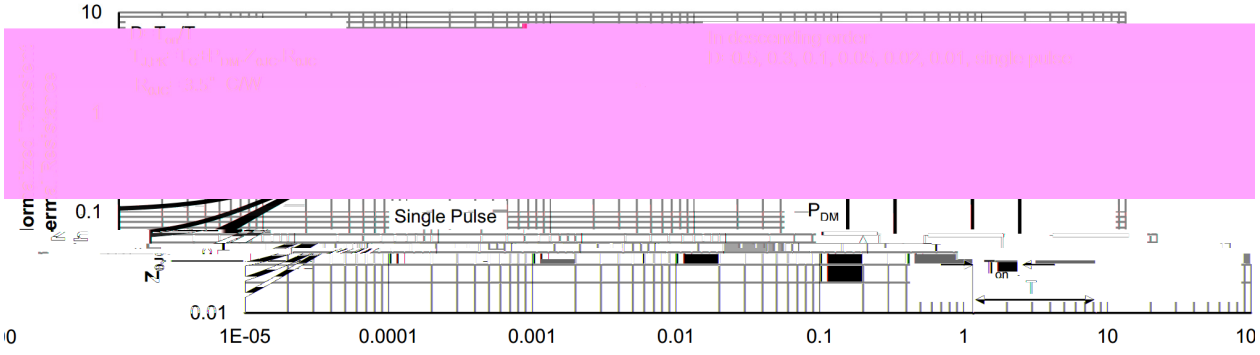
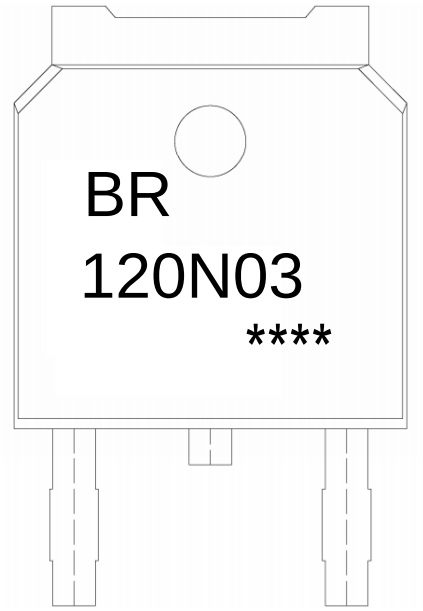


Figure 9: Maximum Forward Biased Safe Operating Area



Pulse Width (s)

Figure 10: Normalized Maximum Transient Thermal Impedance



BR

120N03

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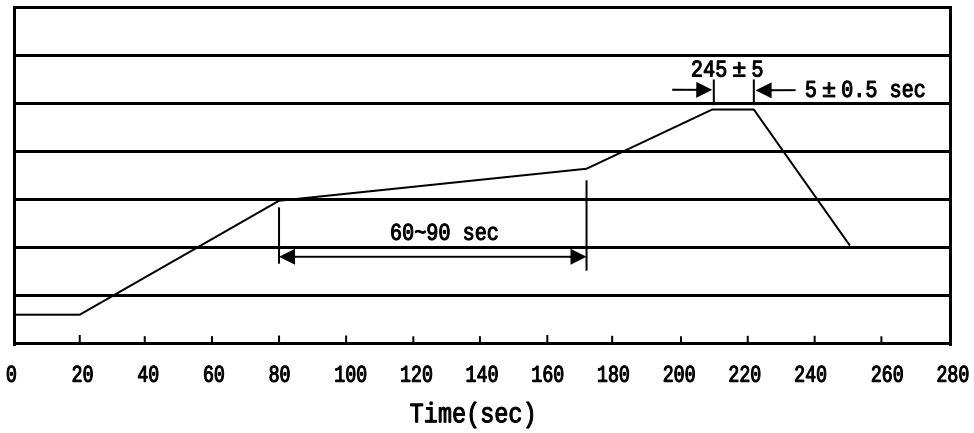
Note:

BR:	Company Code
120N03:	Product Type
****:	Lot No. Code, code change with Lot No



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.

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ REEL

Package Type	Units					Dimension		(unit mm³)
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
TO-252	2,500	2	5,000	6	30,000	13 ρ ×16	360×360×50	380×335×366

/ TUBE

Package Type	Units					Dimension		(unit mm³)
	Units/Tube /	Tubes/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Tube	Inner Box	Outer Box
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180