

/ Descriptions

TO-252 N MOS

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

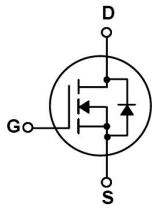
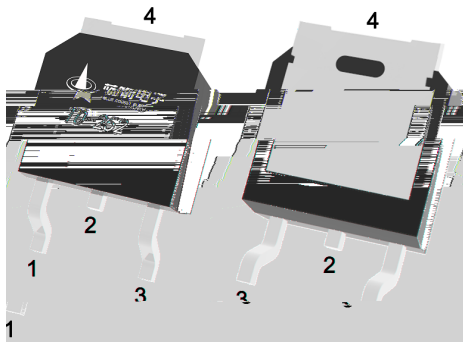
/ Features $V_{DS}(V) = 30V$ $I_D=122A(V_{GS} = \pm 20V)$ $R_{DS(ON)}@10V$ 3.5m (Typ. 3.2m) $R_{DS(ON)}@4.5V$ 6.5m (Typ. 5.1m)

HF Product.

/ Applications

DC/DC

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

/ Equivalent Circuit**/ Pinning**

PIN1 G

PIN 2 D

PIN 3 S

PIN 4 D

/ Marking

See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	122	A
Peak Drain Current	I_{DM}	260	A
Gate-Source Voltage	V_{GS}	20	V
Avalanche Current	I_{AS}	26.5	A
Single Pulsed Avalanche Energy	E_{AS}	653	mJ
Total Power Dissipation	$P_D(T_c=25^\circ\text{C})$	88	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	
Thermal resistance, junction - ambient	R_{JA}	50	/W
Thermal resistance, junction - case	R_{JC}	1.42	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	BV_{DSS}	$V_{GS}=0V$ $I_D=250\text{ A}$	30	33		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$ $V_{GS}=0V$			1	A
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\text{ A}$	1.0	1.5	3.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		3.2	3.5	m
		$V_{GS}=4.5V$ $I_D=10A$		5.1	6.5	m
Diode Forward Voltage	V_{SD}	$I_S=20A$ $V_{GS}=0V$			1.2	V
Reverse Recovery Time	t_{rr}	$I_D = 20\text{ A}$ $V_{DS}=15V$				

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V, \quad V_{DS}=15V, \quad I_D=20A$		43.6		nC
Total Gate Charge	$Q_{g(4.5V)}$			19.9		
Gate Source Charge	Q_{gs}			4.4		
Gate Drain Charge	Q_{gd}			9.4		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V \quad V_{DS}=15V$ $R_L=0.75 \quad R_{GEN}=3$		12.1		ns
Turn-On Rise Time	t_r			82.5		ns
Turn-Off Delay Time	$t_{d(off)}$			36.9		ns
Turn-Off Fall Time	t_f			8.6		ns

/ Electrical Characteristic Curve

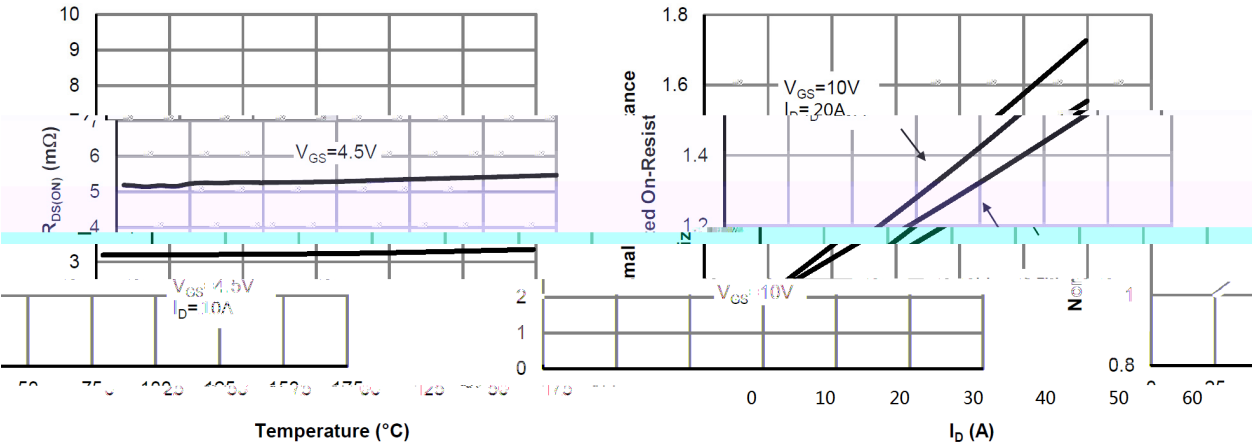
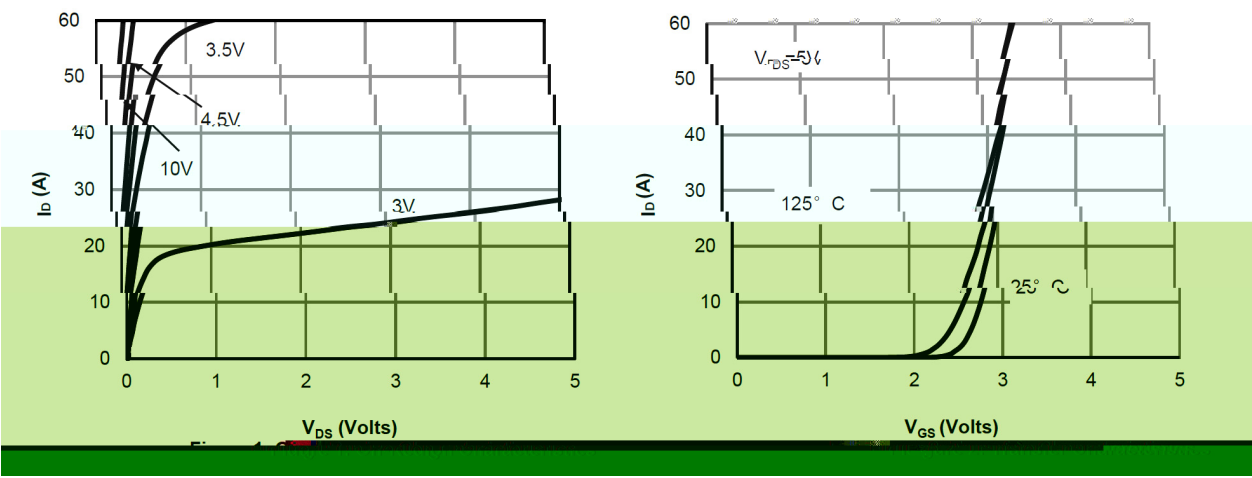


Figure 4: On-Resistance vs. Junction Temperature

Figure 3: On-Resistance vs. Drain Current and Gate Voltage

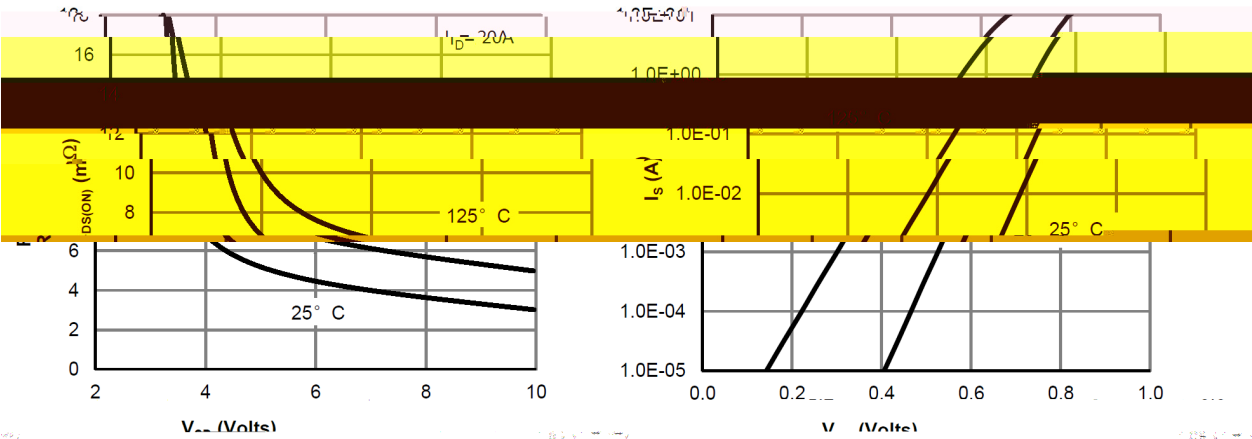
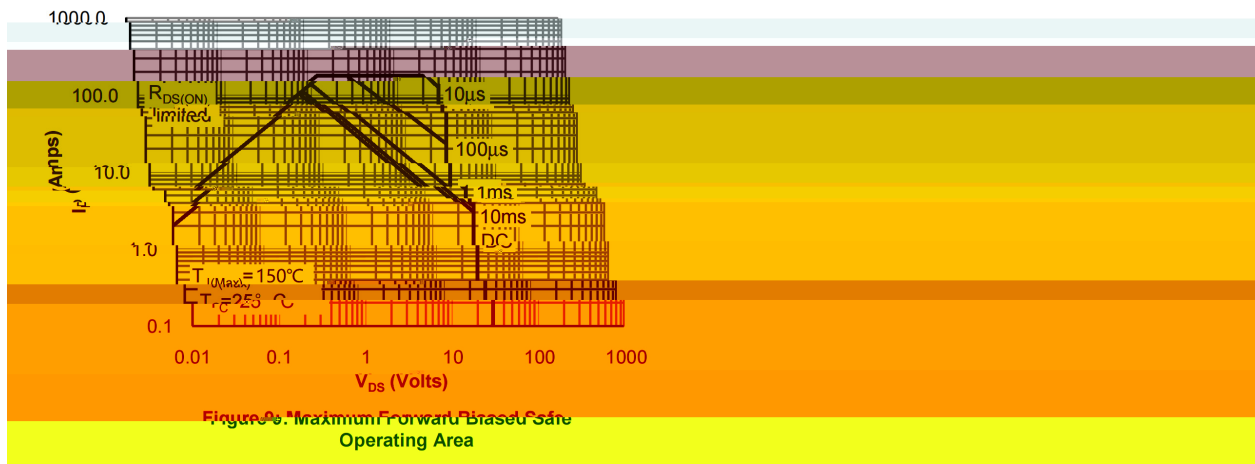
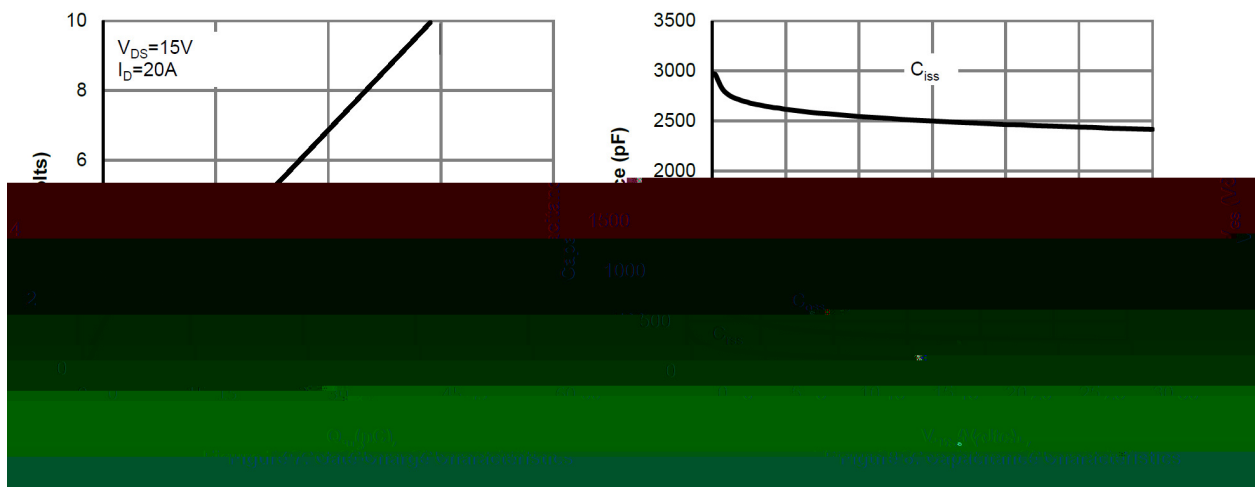


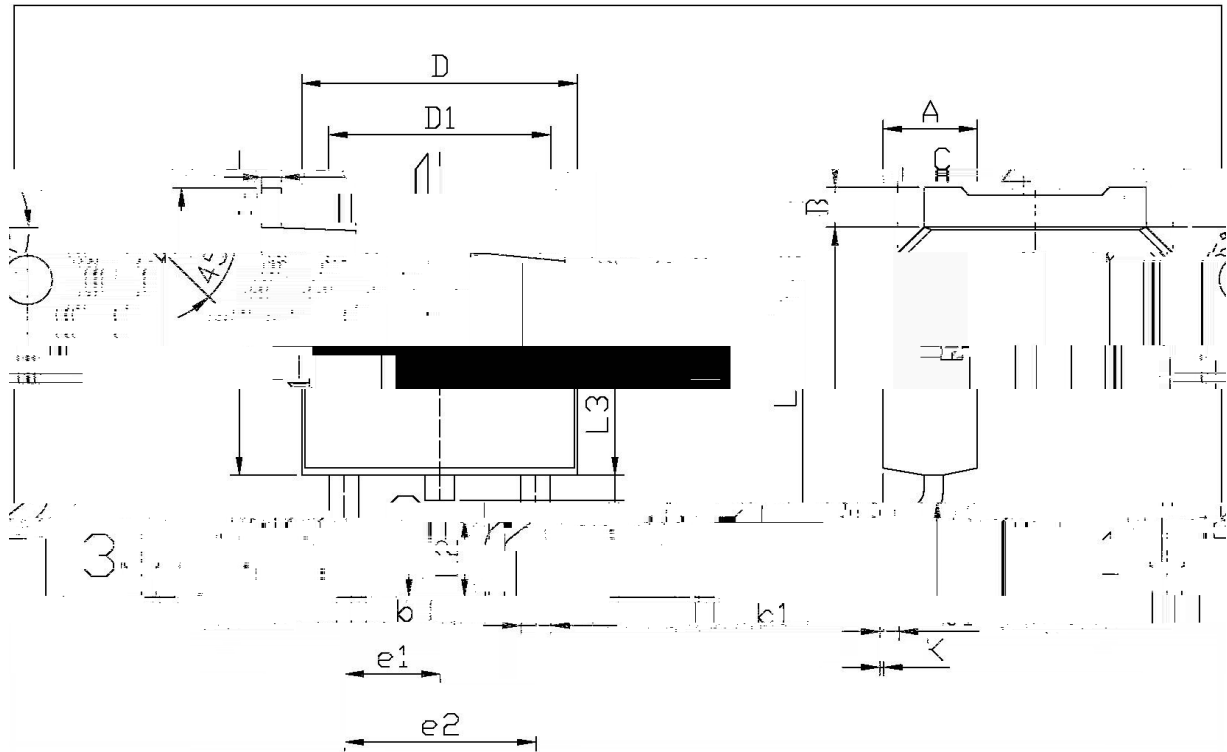
Figure 6: Body-Diode Characteristics

Figure 5: On-Resistance vs

/ Electrical Characteristic Curve



/ Package Dimensions

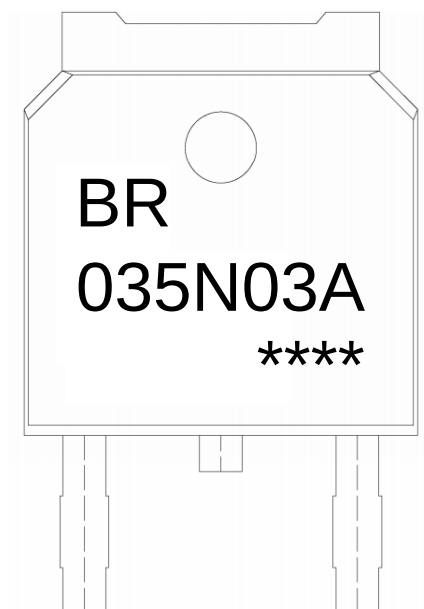


单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
E	5.95	6.25	B	0.95	1.25
e1	2.24	2.34	L1	9.85	10.35
e2	4.73	4.73	L2	1.70	2.00
L1	0.55	0.55	D	6.45	6.75
C	0.45	0.45	J1	5.10	5.10
0.60	0.60	0.90			
0.50	0.50	0.50			

T0-252

/ Marking Instructions



BR

035N03A

Note:

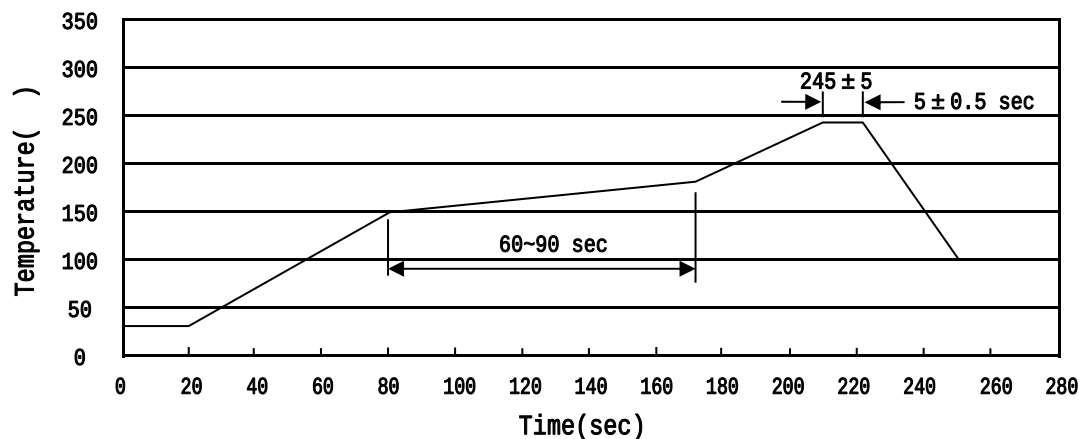
BR: Company Code

035N03A: Product Type Code

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



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Note:

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|---|-------|-----|----|-----------|---|
| 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	Units					Dimension (unit mm ³)		
	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 ×16	360×360×50	380×335×366

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
	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

/ Notices

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