

5 é / Descriptions

TO-252 .> // x N ?ú 3 « | • 'ož
N-CHANNEL MOSFET in a TO-252 Plastic Package.

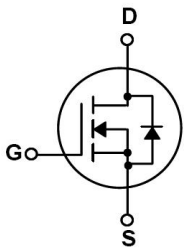
α^a / Features

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

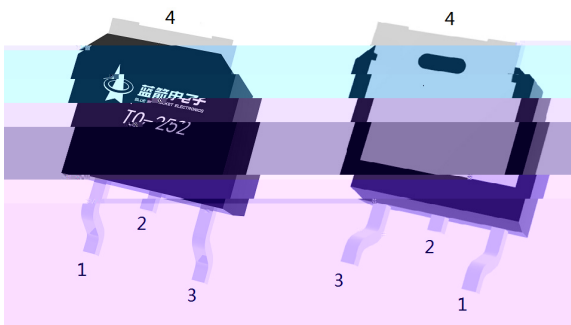
Đ ÷ / Applications

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

Ã W] Ô • / Equivalent Circuit



• Ů - æ / Pinning



PIN 1 y G

PIN 2 y D

PIN 3 y S

PIN 4 y D

, M V / Marking

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See Marking Instructions.

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	40	V
Drain Current	$I_D(T_C=25^\circ\text{C})$	150	A
Drain Current - Pulsed	I_{DM}	304	A
Gate-Source Voltage	V_{GS}	f 20	V
Avalanche Current	I_{AS}	33	A
Single Pulsed Avalanche Energy(L=0.5mH)	E_{AS}	435	mJ
Power Dissipation	$P_D(T_C=25^\circ\text{C})$	120	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	
Thermal Resistance-Junction to Ambient	t 0 10s	$R_{\theta JA}$	20
	Steady-State		50
Thermal Resistance-Junction to Case	Steady-State	$R_{\theta JC}$	1.04

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\text{ A}$	40			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V, V_{GS}=0V$			1.0	A
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$			f 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\text{ A}$	1.0	1.7	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$		2.5	3.0	m
		$V_{GS}=4.5V, I_D=10A$		3.1	5.0	
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=1A$			1.4	V
Gate resistance	R_g	$V_{GS}=0V, f=1MHz, V_{DS}=0V,$		1.16		
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}GS$				

@ f Parameter	... Z Symbol	y i Ú ^ Test Conditions	Â 4 › Min	Á ° › Typ	Â Ý › Max	% y Unit
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V V _{DS} =20V R _L =1 Ω R _{GEN} =3 Ω		11		ns
Turn-On Rise Time	t _r			11		
Turn-Off Delay Time	t _{d(off)}			40		
Turn-Off Fall Time	t _f			10		

Electrical Characteristic Curve

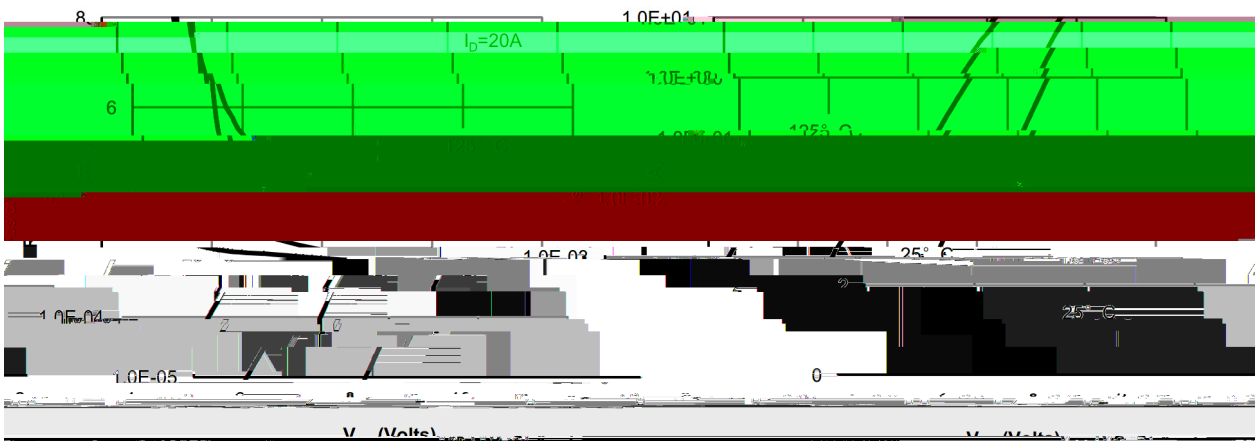
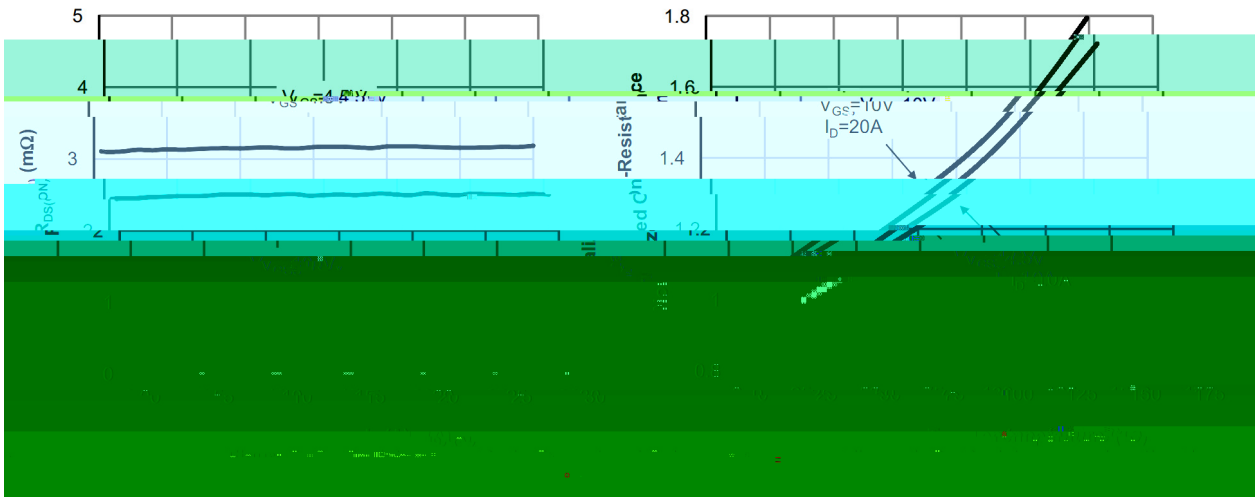
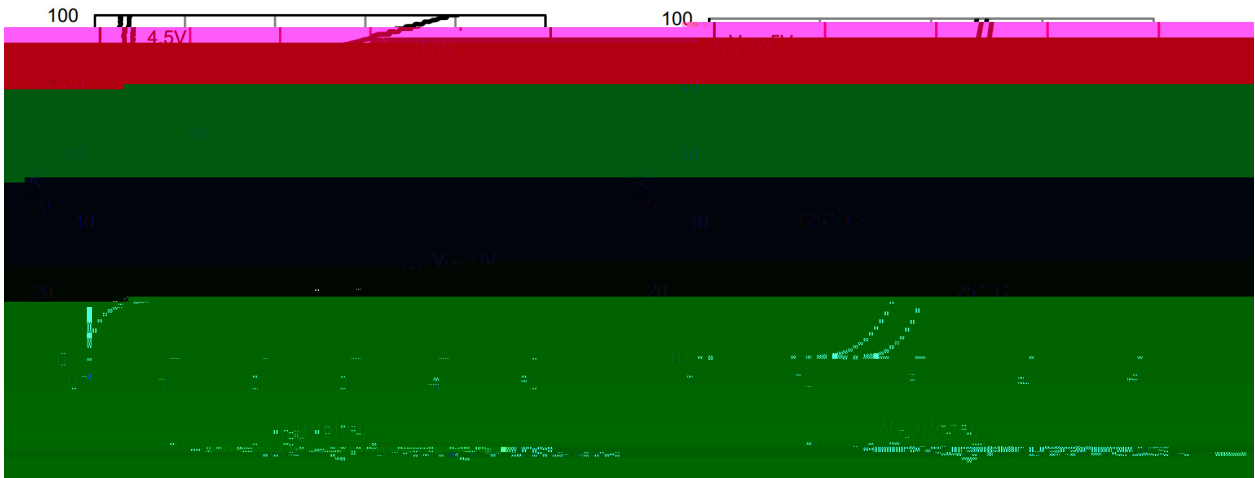
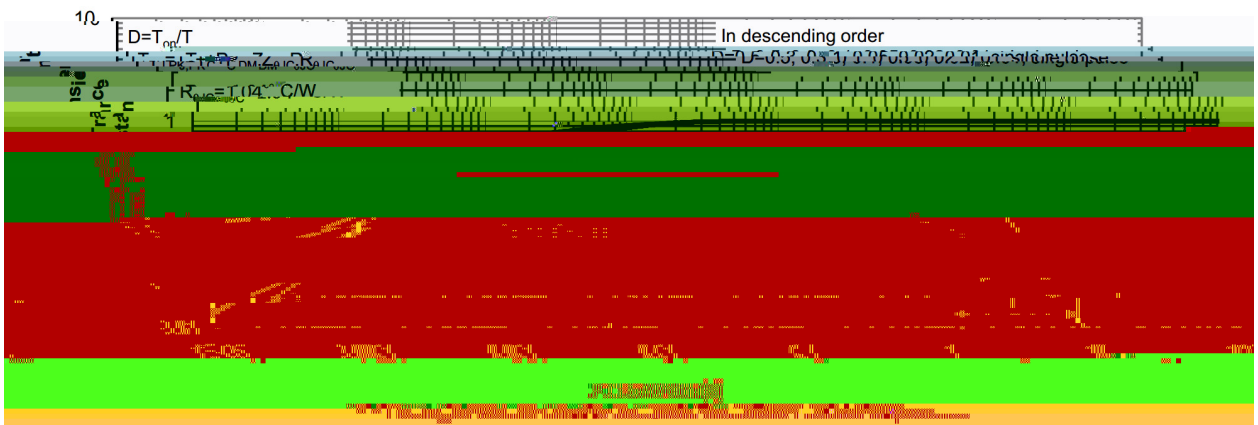
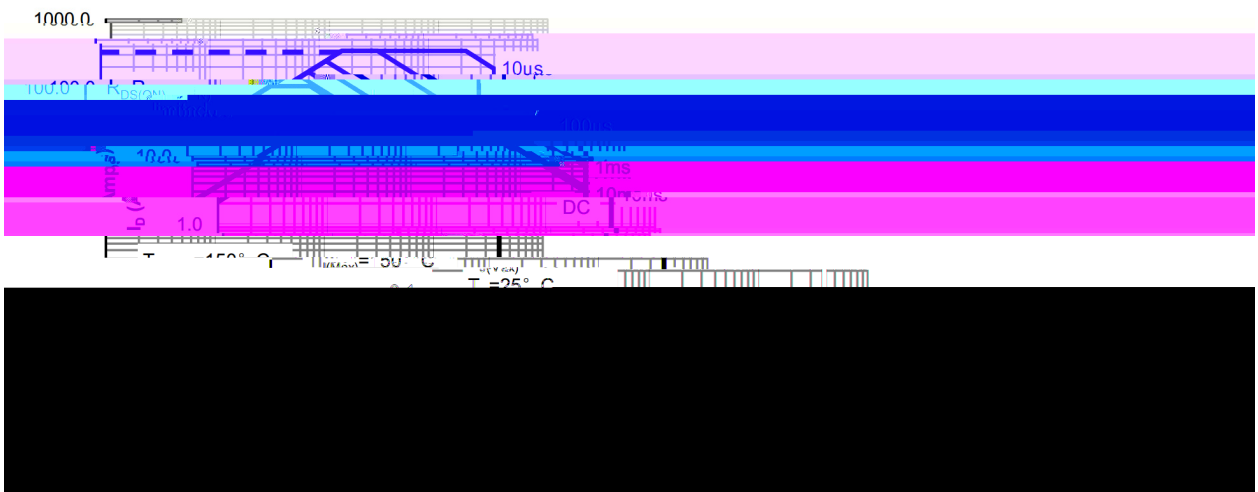
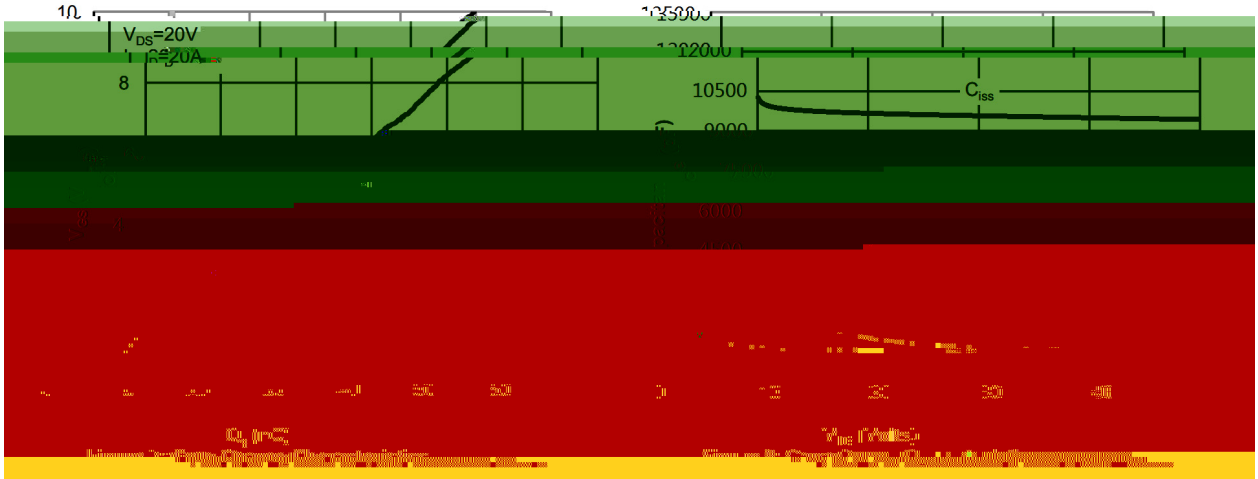


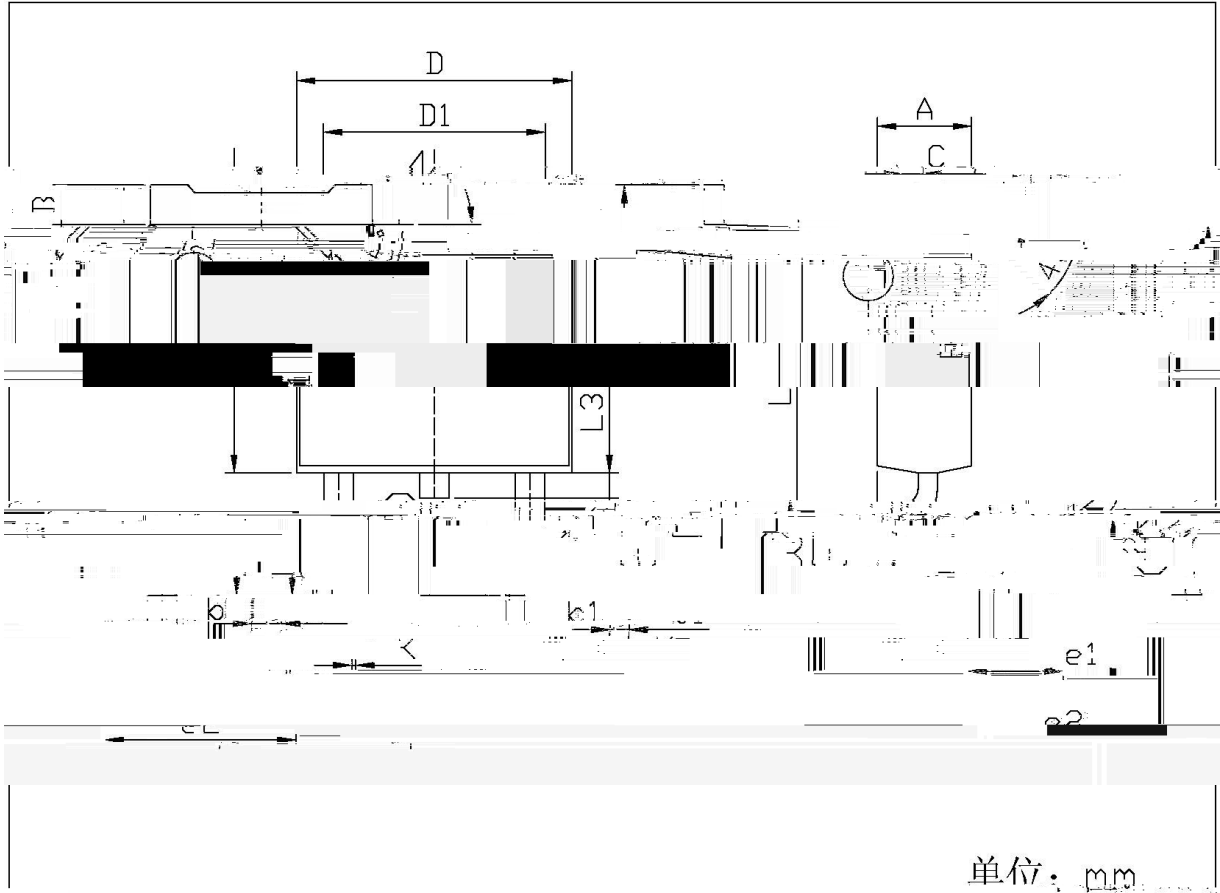
Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve



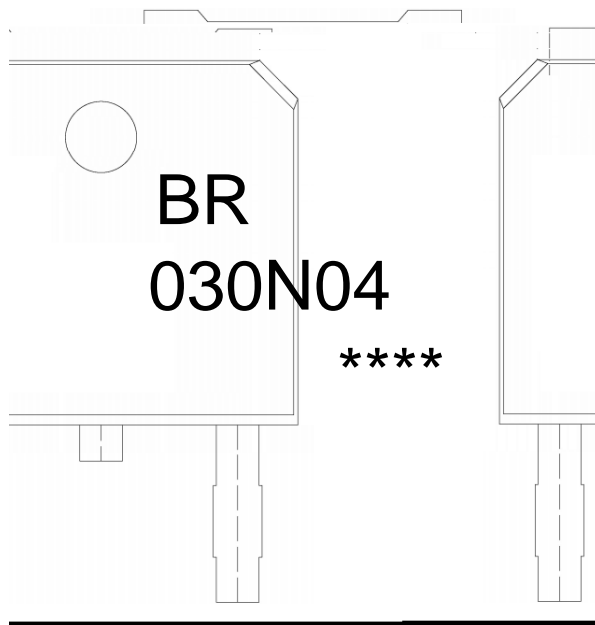
Ø ≡) ϕ / Package Dimensions



Dimensions		Symbol		Dimensions		Symbol	
Min	Max	Min	Max	Min	Max	Min	Max
2.34		B	0.95	1.25	e1	2.24	
7.73			0.70	0.00	e2	4.73	
0.45			0.55	0.00	K	0.25	
0.15			0.55	0.00	L3	0.60	
0.10		DT	5.10	5.50	K2	0.00	

T0-252

, M y f / Marking Instructions



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BR y , [W A
030N04 y ° Z W A
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Note:
BR: Company Code
030N04: Product Type Code
****: Lot No. Code, code change with Lot No

š WD t... • Ž Ć (x /) / : KSVKXGZ[XK 6XULORK LUX / 8 8KLRU] 9URJKXOTM 6

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- 1o• Ä ½ “ † 150 ½180 - k ž • 60 ½90sec;
- 2o• Q › “ † 245 r5 - k ž • 4 Ò 5 r0.5sec;
- 3o• D N ò i Ò 0 , † 2 ½10 - /sec.

Note:

- 1.Preheating:150~180 - , Time:60~90sec.
- 2.Peak Temp.:245 r5 - , Duration:5 r0.5sec.
- 3. Cooling Speed: 2~10 - /sec.

ÂD /Cã p ¯ »] / Resistance to Soldering Heat Test Conditions

“ † y 260 r5 - ž • y 10 r1 sec. Temp.:260±5 Time:10±1 sec

G P á / Packaging SPEC.

2 & x / REEL