

5 é / Descriptions

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

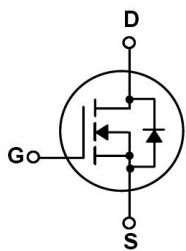
α a / Features

8*₉ u 4 k y > z k) x y 4 k • ¼ , † ½ k —)í D }ož
Low $R_{DS(on)}$, low gate charge, low C_{rss} , fast switching, HF Product.

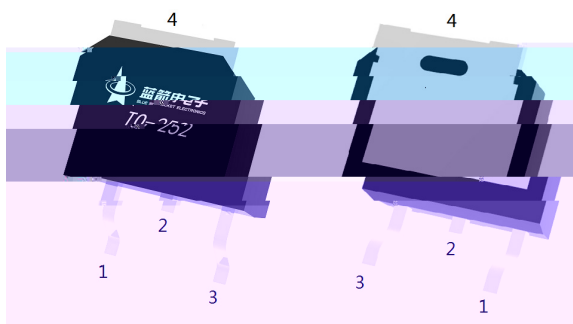
Đ ÷ / Applications

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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



PIN1 y G

PIN 2 y D

PIN 3 y S

PIN 4 y D

, M V / Marking

• - ~ a ¢ ož

See Marking Instructions.

@ f Parameter		... Z Symbol	f > Rating	% y Unit
Drain-Source Voltage		V _{DSS}	40	V
Drain Current		I _D (T _c =25 °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 °C)	120	W
Junction and Storage Temperature Range		T _J , T _{STG}	-55 to 150	
Thermal Resistance-Junction to Ambient	t 0 10s	R _{θJA}	20	/W
	Steady-State		50	
Thermal Resistance-Junction to Case	Steady-State	R _{θJC}	1.04	

@ f Parameter	... Z Symbol	y i Ú ^ Test Conditions	Â 4 > Min	Á ° > Typ	Â Ý > Max	% y Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250 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} =±20V V _{DS} =0V			f 100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250 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 i R _{GEN} =3 i		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

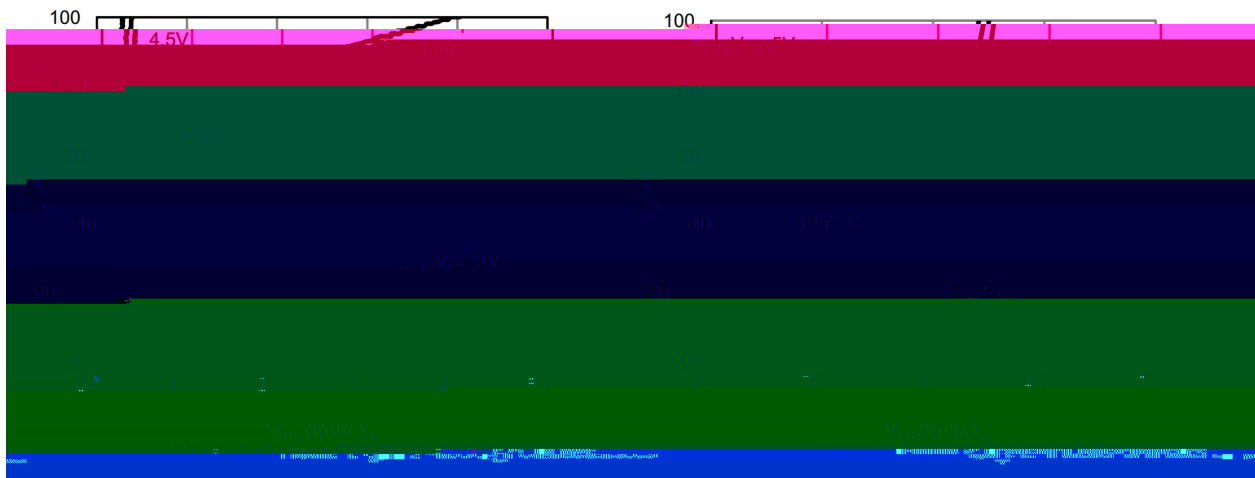
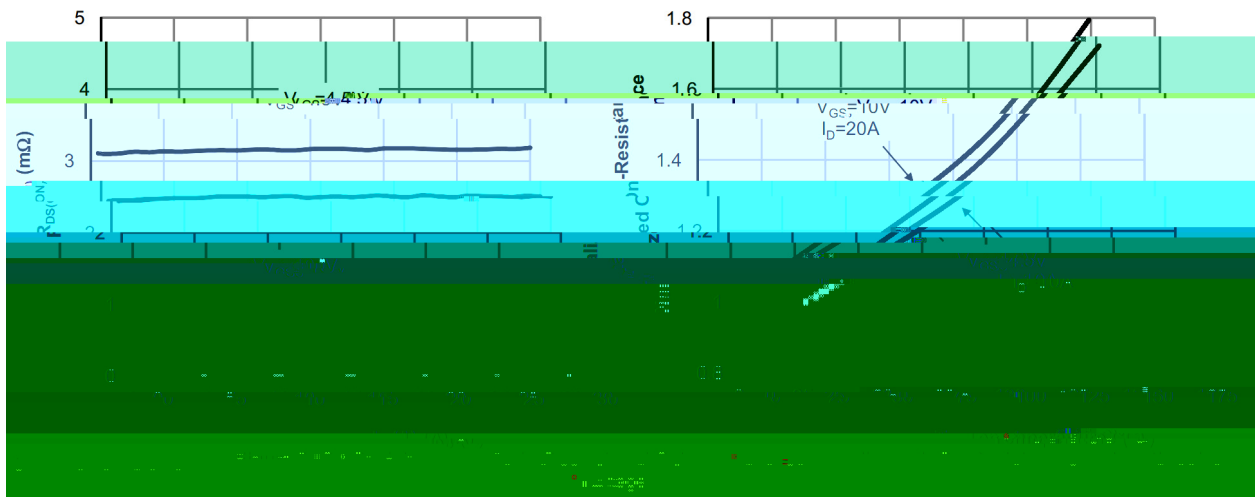
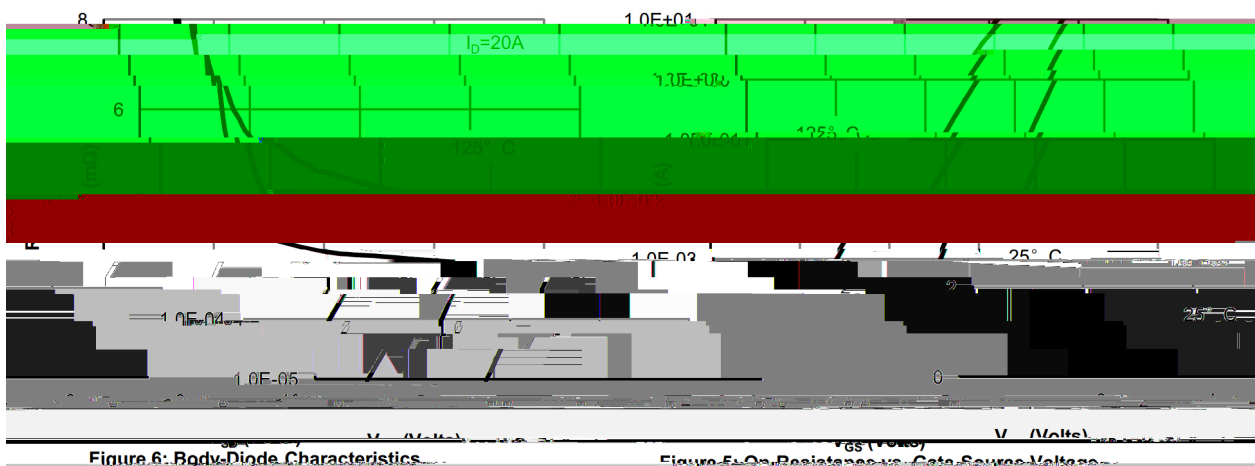
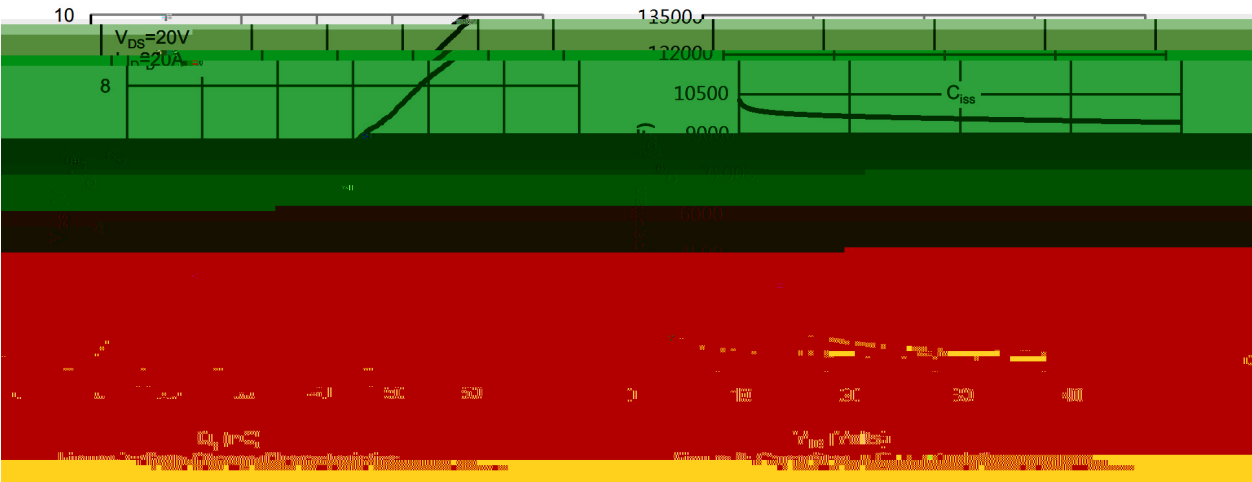
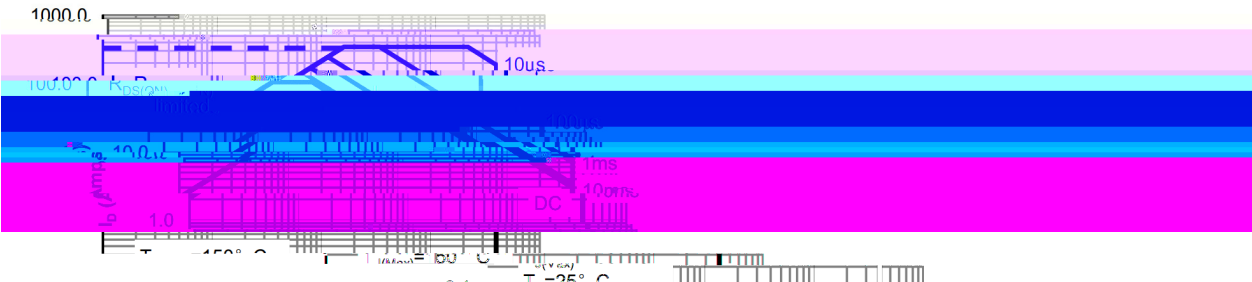
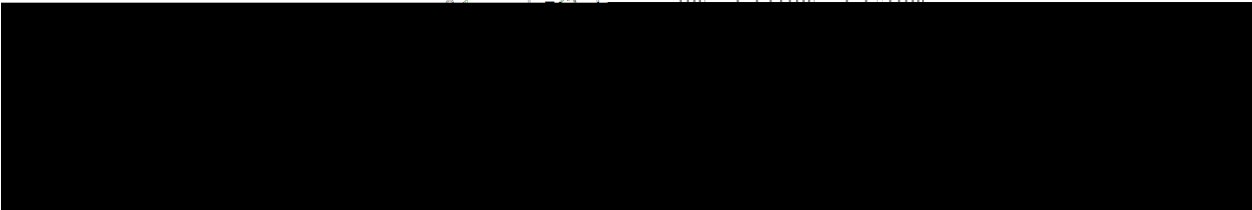
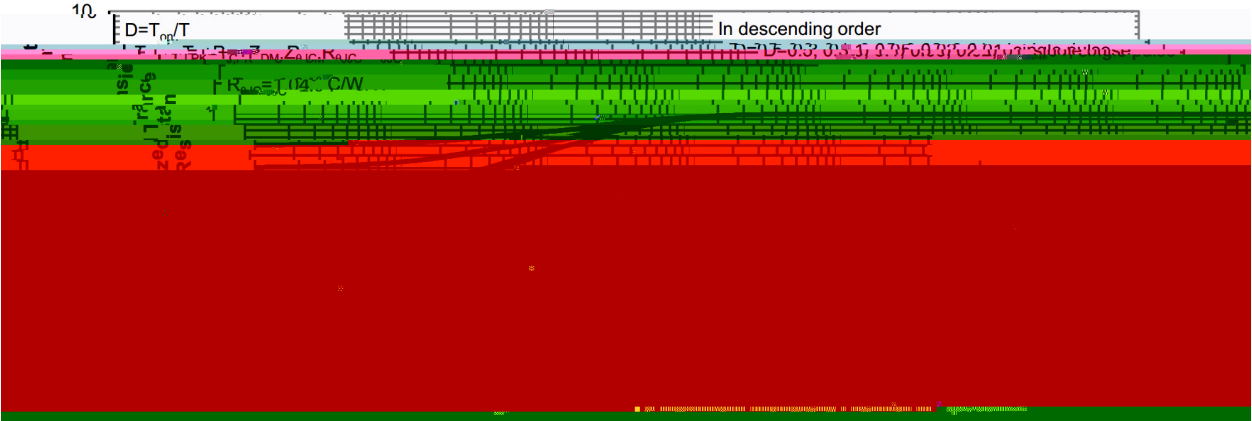


Figure 6: Body Diode Characteristics

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

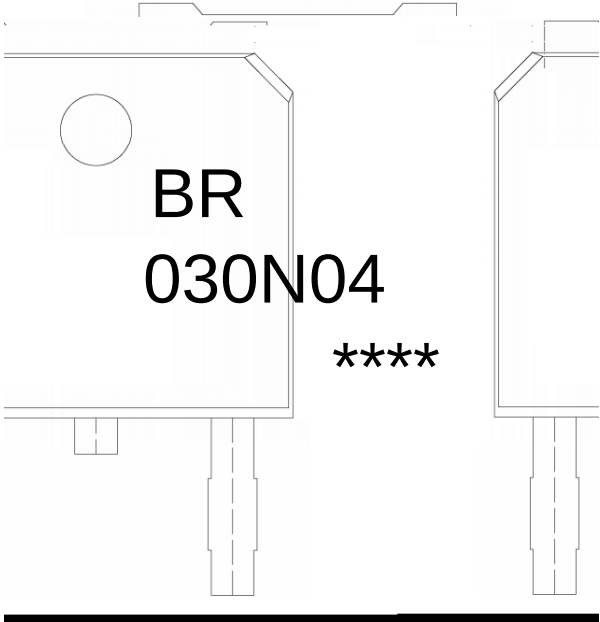
Electrical Characteristic Curve



Dimensions		Millions		Dimensions		In Millions	
Min	Max	Min	Max	Min	Max	Min	Max
2A	2-34	B	0-96	1-25	0-85	10-27	0-45
6	6-65	6-75	13	0-50	0-00	DILT	5-10
							KB
							0-00
							0-10

6 / 8

, M y f / Marking Instructions



^a ¢ y
BR y , [W A
030N04 y ° Z W A
y ÿ D Z W A k š ÿ D Z J

Note:
BR: Company Code
030N04: Product Type Code
*****: Lot No. Code, code change with Lot No

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

ª ¢ y

- 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

3393 8.6.952a.35506648Q49BX18rA52.37q72.215 9%339E B72194100a.851609640q235649746939245P462/H6 r43502345v)1240163560847.85648449.26
R 0 TD .2252 Tc [(/)221 w92 REEL