

Rev.A Sep.-2022

TO-252 N MOS

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

$V_{DS} (V) = 40V$

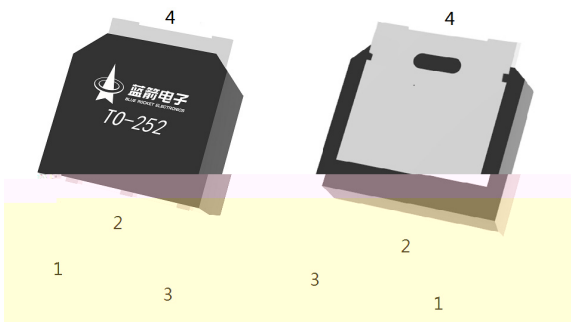
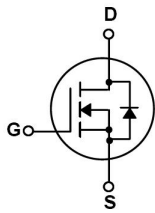
$I_D = 54A (V_{GS} = 20V)$

$R_{DS(ON)} @ 10V \ 8mR (Typ. 7.5mR)$

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

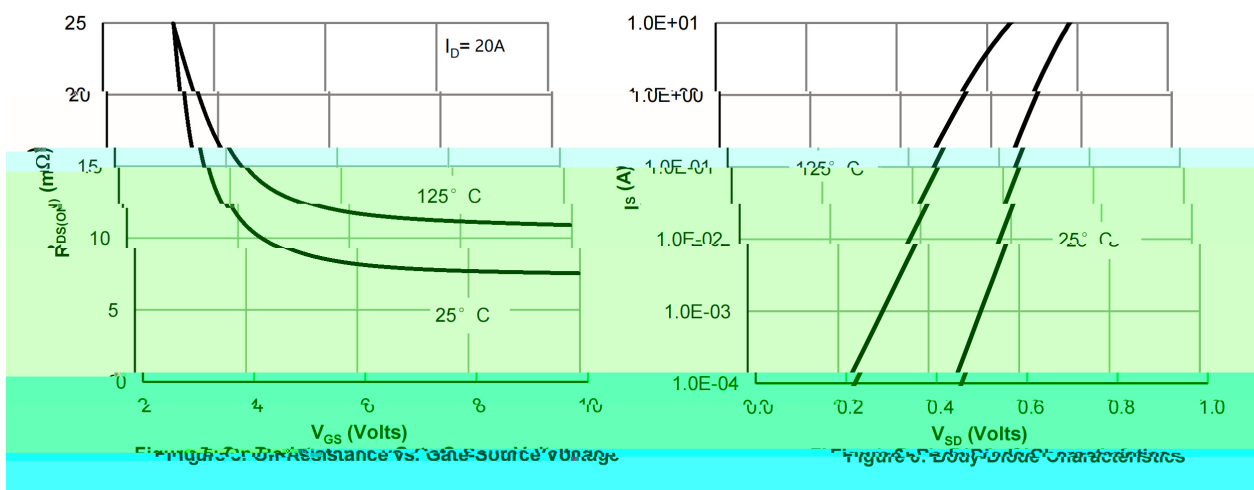
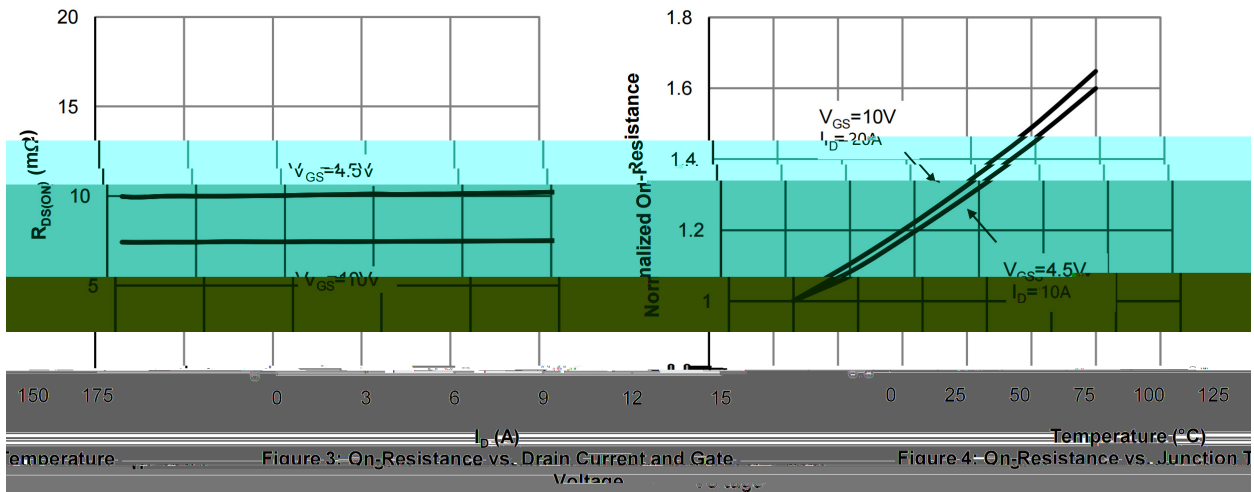
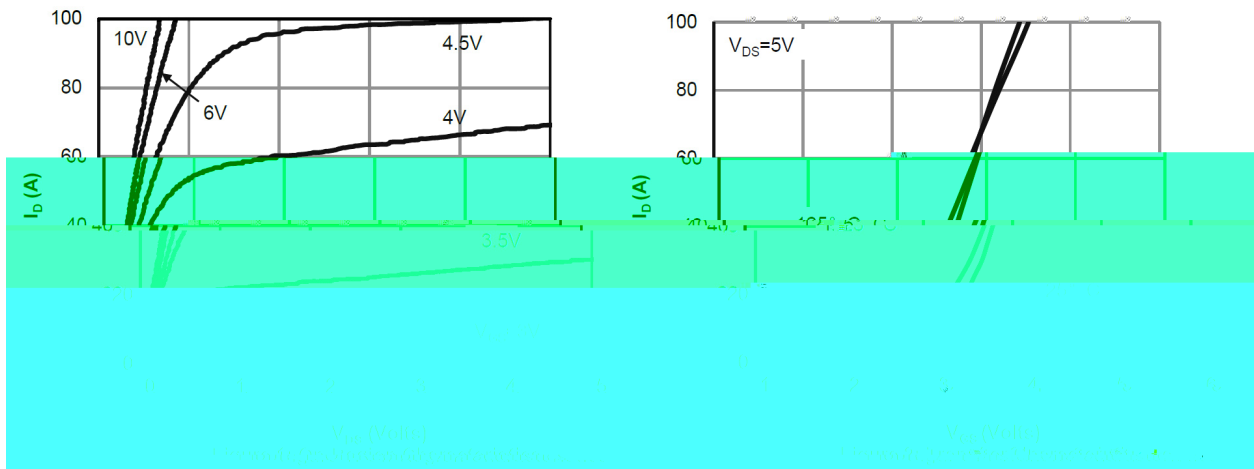
PIN 4 D

See Marking Instructions.

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	40	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	54	A
Drain Current - Pulsed		I_{DM}	113	A
Gate-Source Voltage		V_{GS}	± 20	V
Single Pulsed Avalanche Energy		E_{AS}	67.6	mJ
Avalanche Current		I_{AS}	13	A
Power Dissipation		$P_D(T_c=25^\circ\text{C})$	39	W
Operating and Storage Temperature Range		T_J, T_{stg}	-55 to 150	
Junction-to-Ambient	$t = 10$	$R_{\theta JA}$	25	/W
Junction-to-Ambient	Steady-State		55	
Junction-to-Case	Steady-State	$R_{\theta JC}$	3.2	

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$	$I_D=250\mu A$	40	47		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V$	$V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$	$V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu A$	1.0	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$	$I_D=20A$		7.5	8	m Ω
		$V_{GS}=4.5V$	$I_D=10A$		10	13	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$	$I_S=1A$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $f=1.0MHz$	$V_{GS}=0V$		850		pF
Output Capacitance	C_{oss}				115		
Reverse Transfer Capacitance	C_{rss}				30		
Gate resistance	R_g	$V_{GS}=0V$ $f=1MHz$	$V_{DS}=0V$		2.4		Ω
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $I_D=20A$	$V_{DS}=20V$		21		nC
Total Gate Charge	$Q_{g(4.5V)}$				8.6		
Gate Source Charge	Q_{gs}				5.7		
Gate Drain Charge	Q_{gd}				3		

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=20V$ $R_L=1.0\Omega$ $R_{GEN}=3.0\Omega$				



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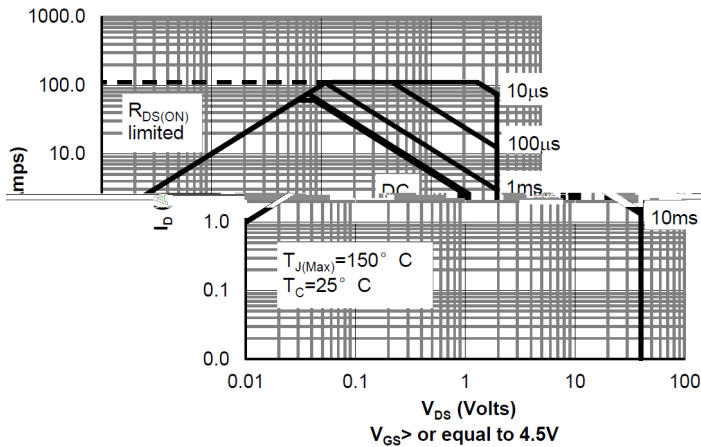
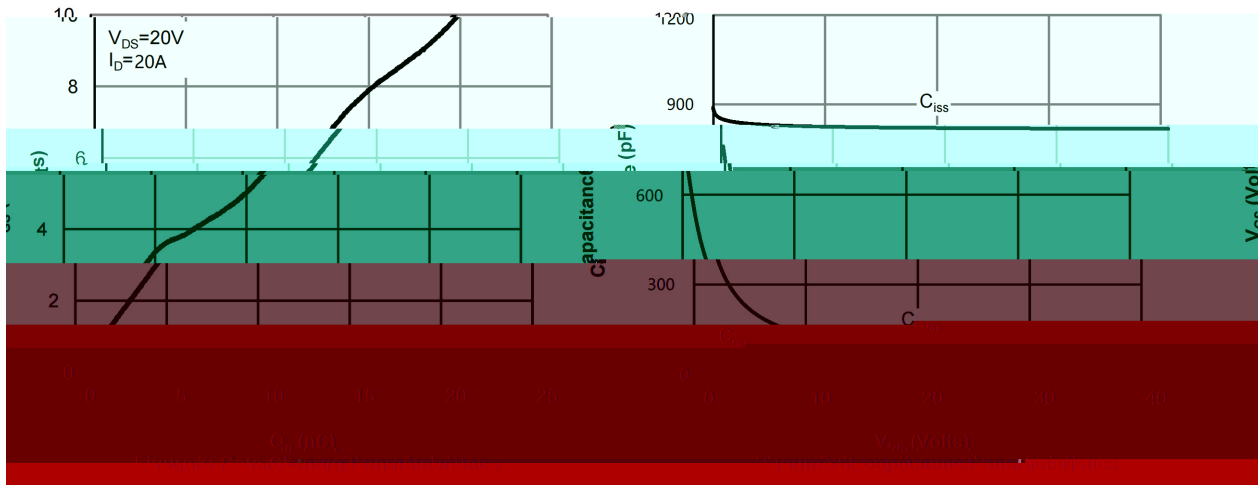


Figure 9: Maximum Forward Biased Safe Operating Area

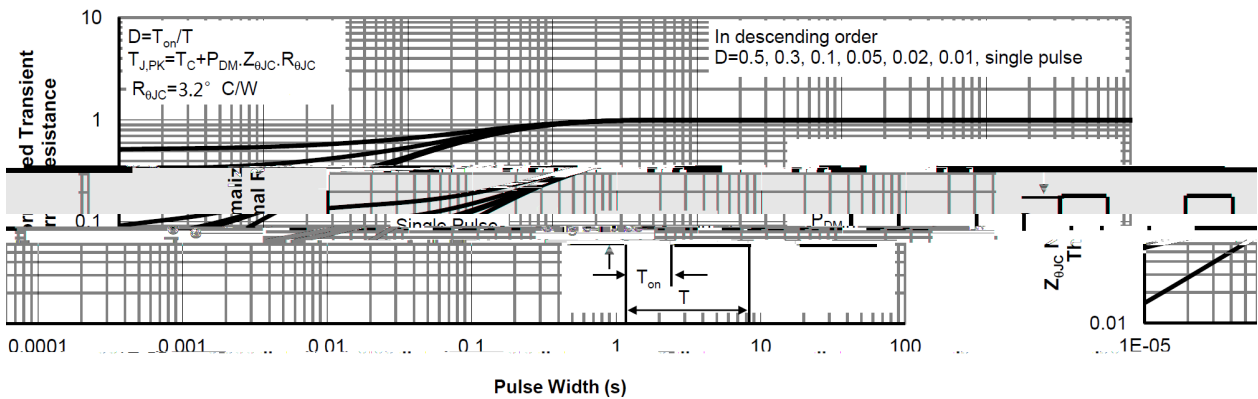
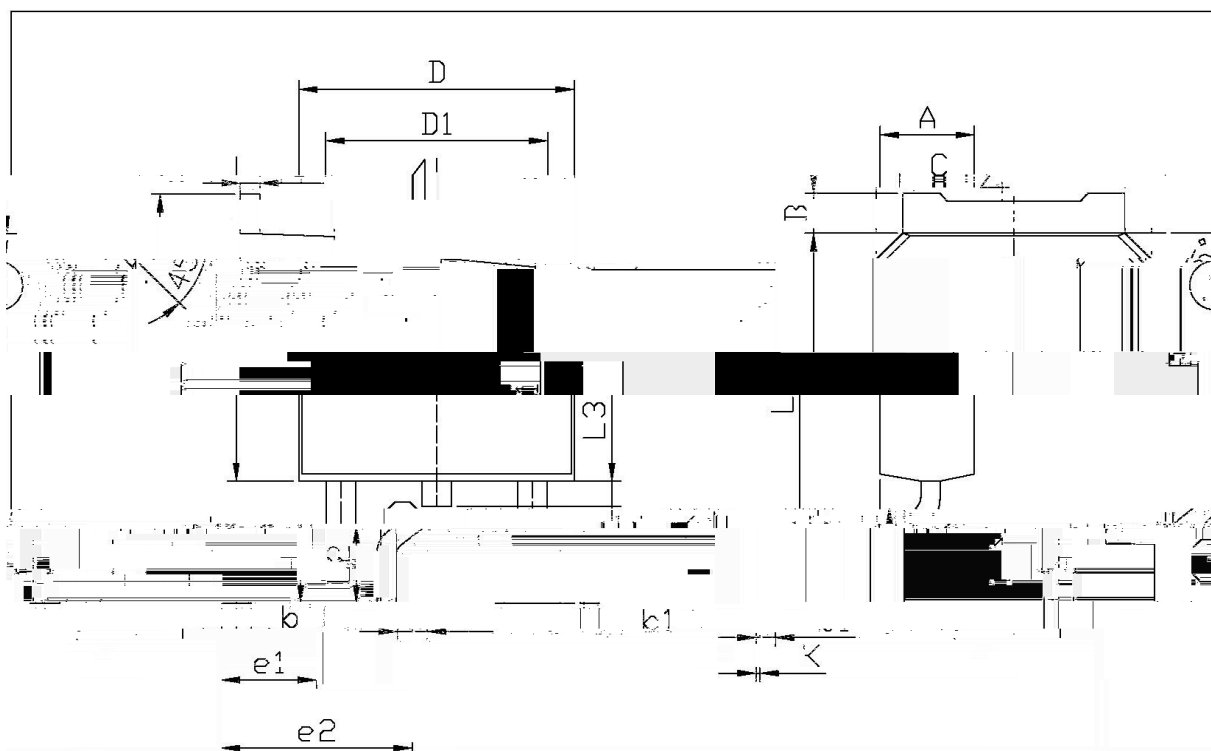


Figure 10: Normalized Maximum Transient Thermal Impedance

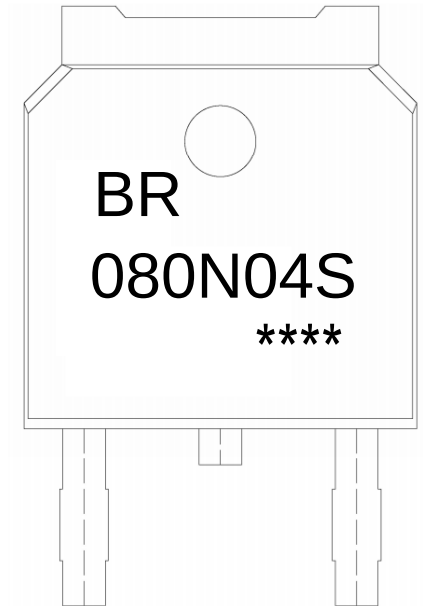


单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
6.35		7.20	2.40	1.25	5.95
2.24	2.34		0.95	1.25	e1
4.49	4.79	5.30	0.70	0.90	0.90
L1	9.85	10.35	b1	0.45	0.55
c	0.45	0.55	2.00	1.70	2.00
0.90		6.45	6.75	1.3	0.60
R	0.00	0.10	D1	5.10	5.50

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BR

080N04S

Note:

BR: Company Code

080N04S: Product Type

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

Temperature Profile for IR Reflow Soldering(Pb-Free)

- 1

150 180

60 90sec;
- 2

245±5

5±0.5sec;
- 3

2 10 /sec.
- Note:

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