

/ Descriptions

TO-252 N MOS

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

/ Features

 $V_{DS} (V) = 40V$ $I_D = 54A (V_{GS} = \pm 20V)$ $R_{DS(ON)} @ 10V \leq 8mR (Typ. 7.5mR)$

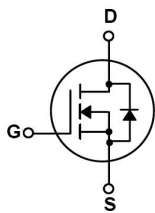
A HF Product.

/ Applications

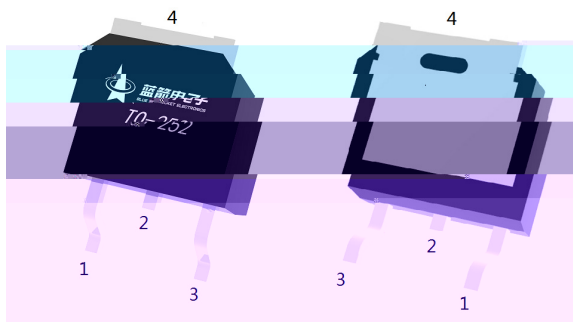
DC/DC

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.

/ Absolute Maximum Ratings(Ta=25)

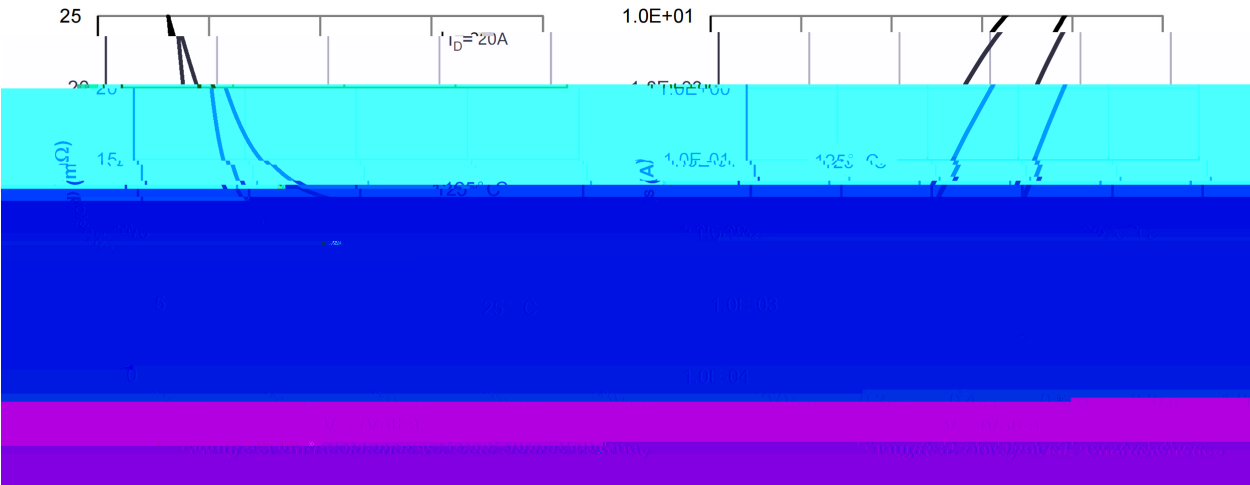
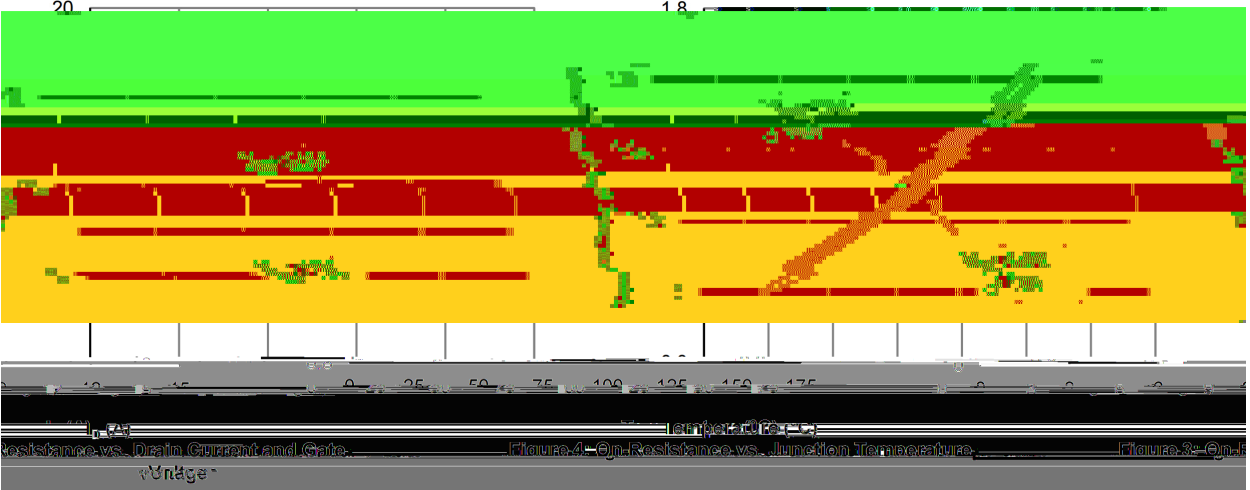
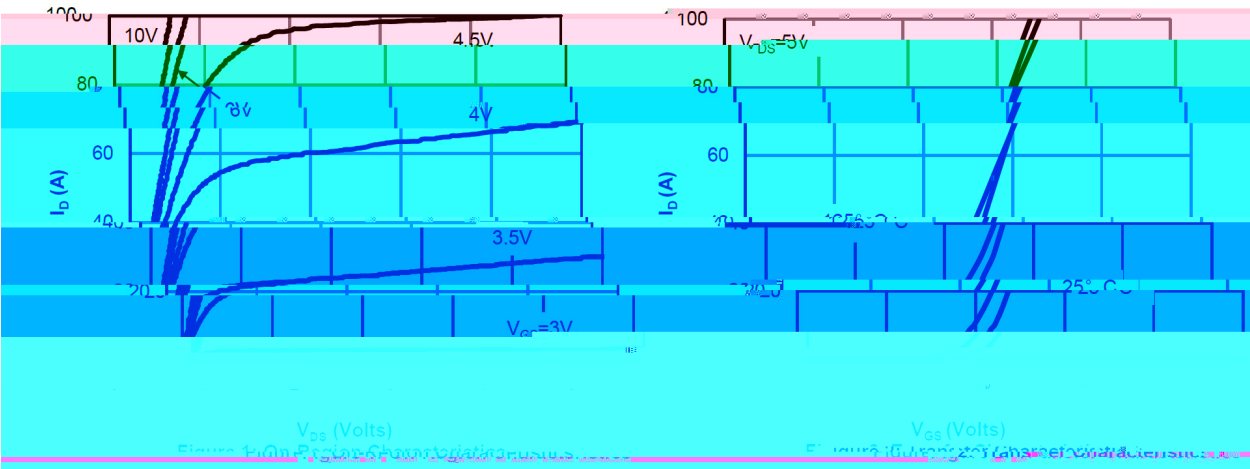
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	40	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	54	A
Drain Current - Pulsed		I_{DM}	113	A
Gate-Source Voltage		V_{GS}	± 20	V
Single Pulsed Avalanche Energy		E_{AS}	67.6	mJ
Avalanche Current		I_{AS}	13	A
Power Dissipation		$P_D(T_c=25^\circ\text{C})$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

/ Electrical Characteristics(Ta=25)

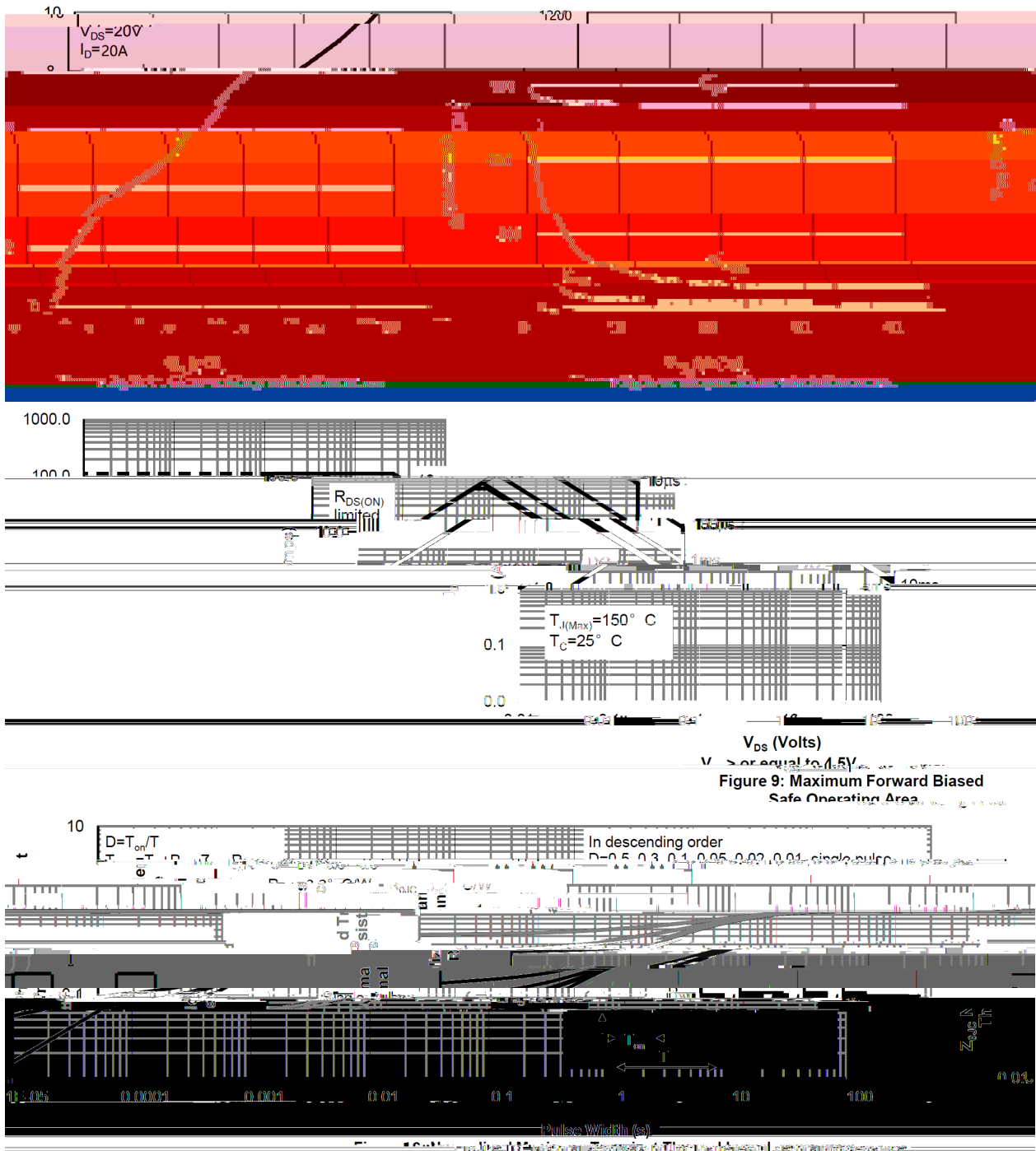
Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$	$I_D=250\text{ A}$	40	47		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V$	$V_{GS}=0V$			1	A
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$	$V_{DS}=0V$			± 0.1	A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\text{ A}$	1.0	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$	$I_D=20A$		7.5	8	m
		$V_{GS}=4.5V$	$I_D=10A$		10	13	m
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		
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	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=20V$ $R_L=1.0$ $R_{GEN}=3.0$ $=10$ $T_{da}0s5$ $T_c(=195$ $I_{6R}=10V2$ 35 $)74$				

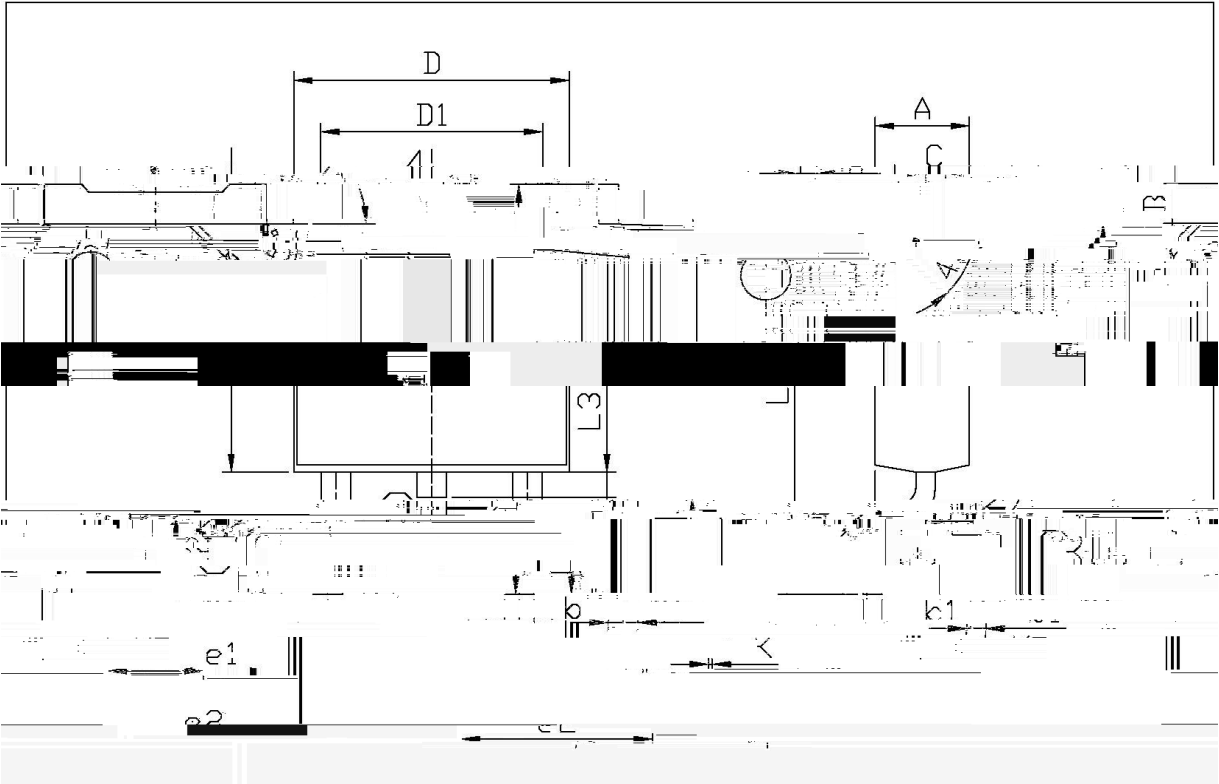
/ Electrical Characteristic Curve



I Electrical Characteristic Curve



/ Package Dimensions

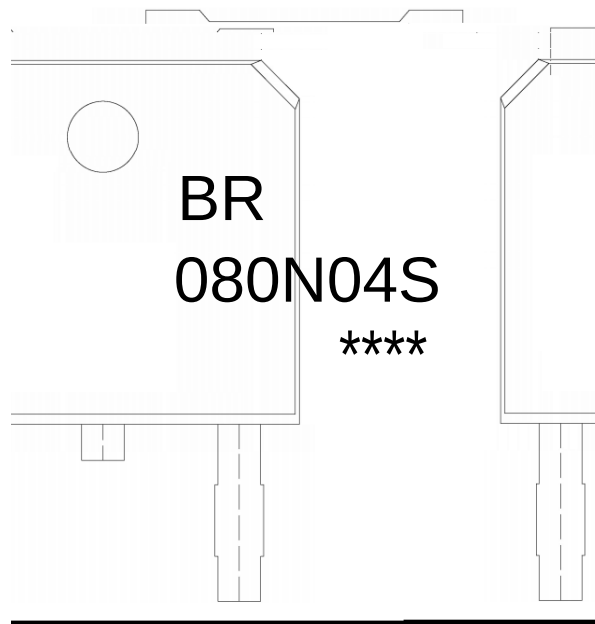


单位: mm

Dimensions, Millimeters		Dimensions, Inches	
Min	Max	Min	Max
0.95	1.25	0.037	0.049
0.70	0.90	0.028	0.035
0.55	0.85	0.022	0.033
0.45	0.75	0.018	0.029
0.10	0.15	0.004	0.006
D1	5.10	0.201	0.201
D	5.50	0.217	0.217
A	1.80	0.071	0.071
B	0.60	0.024	0.024
e1	2.24	0.088	0.088
e2	2.34	0.092	0.092
C	0.00	0.000	0.000

T0-252

/ Marking Instructions



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)**
