

BRCS18N20DP

Rev.D Apr.-2026

/ Descriptions

N TO-252 M M J Q Z 1

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

/ Features

$V_{DS}=200V$ $I_D=18A$ $V_{GS}=\pm 20V$

$R_{DS(on)}@10V \leq 170m\Omega$ (Type.115m Ω)

$R_{DS(on)}@6V \leq 200m\Omega$ (Type.130m Ω)

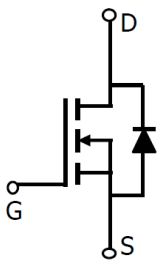
f_{β} HF Product.

/ Applications

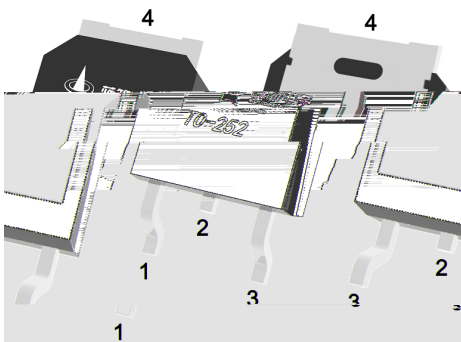
J N A H OHG Z 1

Networking, Load Switch, LED applications.

/ Equivalent Circuit



/ Pinning



PIN1 X G

PIN 2 4 X D

PIN 3 X S

/ Marking

M 1 "

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

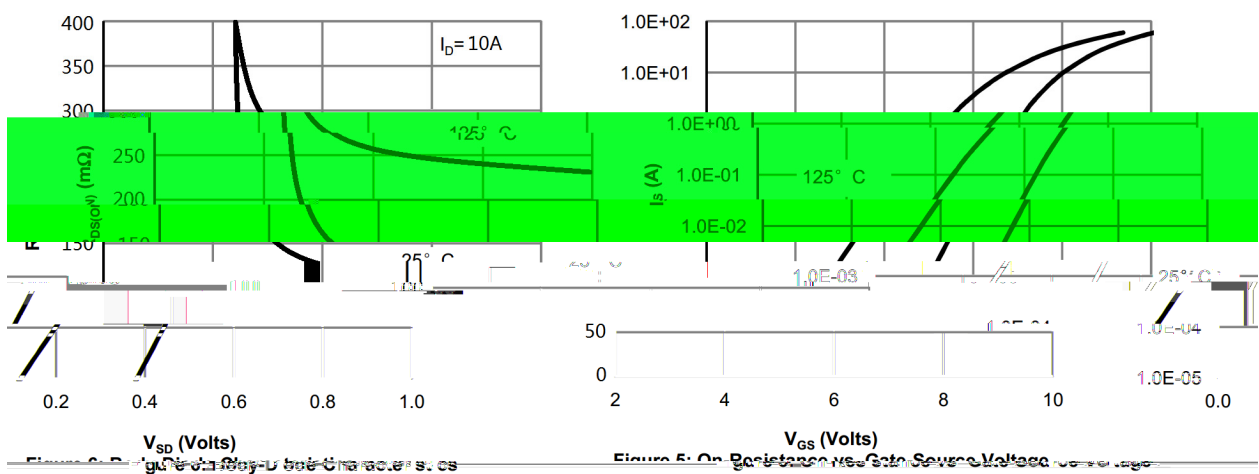
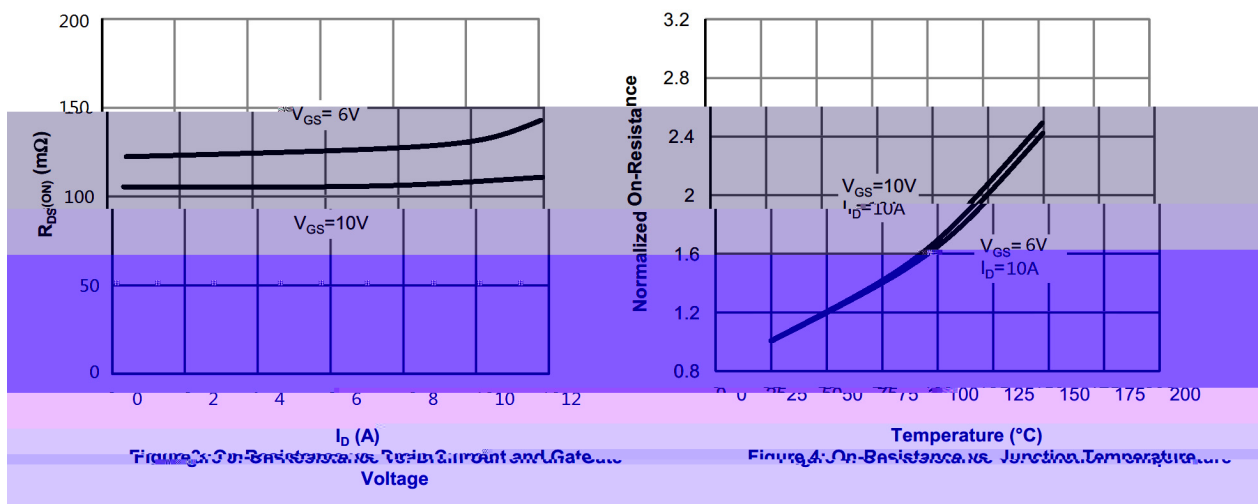
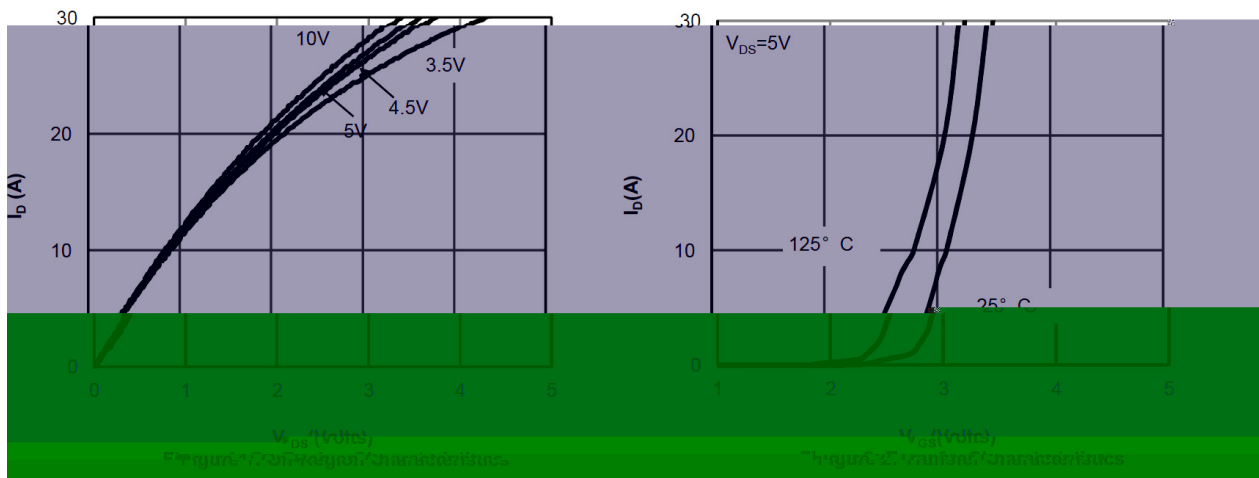
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	200	V
Drain Current	I_D	18	A
Drain Current - Pulsed	I_{DM}	43	A
Gate-Source Voltage	V_{GS}	± 20	V
Single Pulsed Avalanche Energy(L=10mH)	E_{AS}	897	mJ
Avalanche Current(L=10mH)	I_{AS}	11.5	A
Power Dissipation	$P_D(T_C=25^\circ\text{C})$	90	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$
Maximum Junction-to-Ambient	$t \leq 10\text{s}$	20	$^\circ\text{C/W}$
Maximum Junction-to-Ambient	Steady-State		
Maximum Junction-to-Case	Steady-State		
		1.39	

/ Electrical Characteristics(Ta=25)

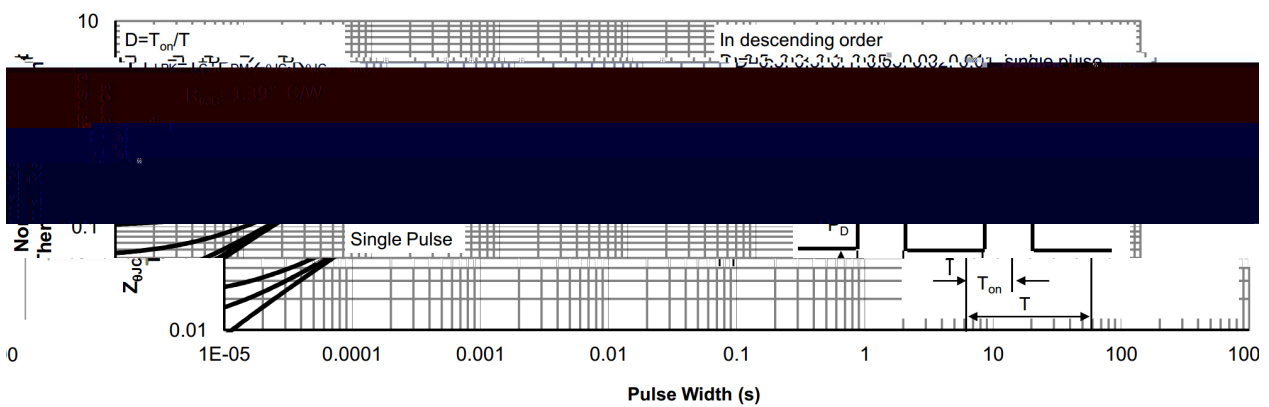
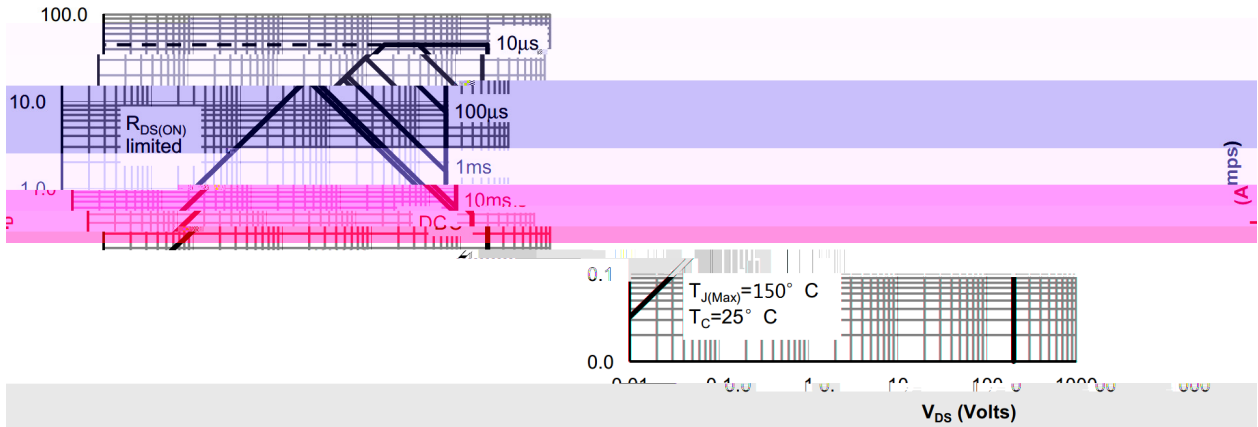
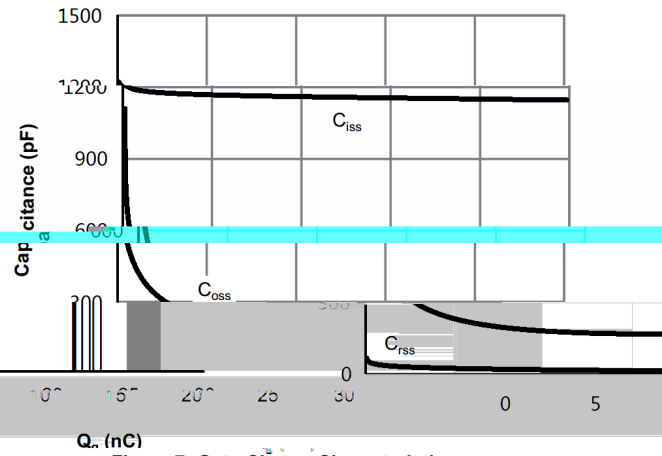
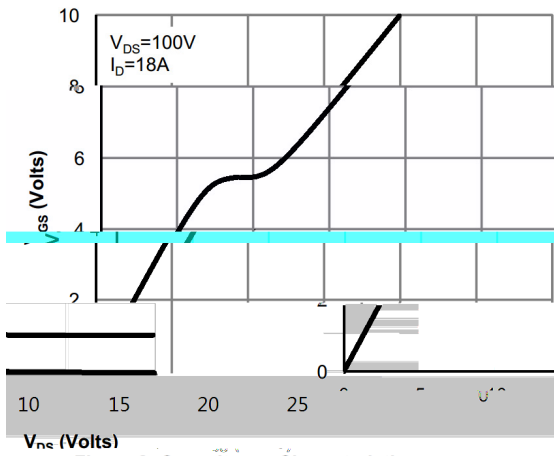
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0\text{V}$ $I_D=250\mu\text{A}$	200	230		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=200\text{V}$ $V_{GS}=0\text{V}$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20\text{V}$ $V_{DS}=0\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu\text{A}$	2.0	3.0	4.0	V
Total gate charge	$R_{DS(on)}$	$V_{GS}=10\text{V}$ $I_D=10\text{A}$		115	170	m Ω
		$V_{GS}=6\text{V}$ $I_D=10\text{A}$		130	200	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0\text{V}$ $I_S=1\text{A}$			1.2	V
Reverse Recovery Time	t_{rr}	$V_{GS}=10\text{V}$ $V_{DS}=75\text{V}$, $I_D=18\text{A}$ $R_{GEN}=3\text{F}$		125		ns
Reverse Recovery Charge	Q_{rr}			0.67		PC
Gate resistance	R_g	$V_{GS}=0\text{V}$ $V_{DS}=0\text{V}$ $f=1\text{MHz}$		1.2		Ω
Input Capacitance	C_{iss}	$V_{DS}=25\text{V}$ $V_{GS}=0\text{V}$ $f=1\text{MHz}$		1130		pF
Output Capacitance	C_{oss}			165		
Reverse Transfer Capacitance	C_{rss}			6		
Total Gate Charge	Q_g	$V_{GS}=10\text{V}$ $V_{DS}=100\text{V}$, $I_D=18\text{A}$		20		nC
Gate Source Charge	Q_{gs}			3.6		
Gate Drain Charge	Q_{gd}			4.9		

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=75V$ $R_{GEN}=3\Omega$ $R_F=37\Omega$				

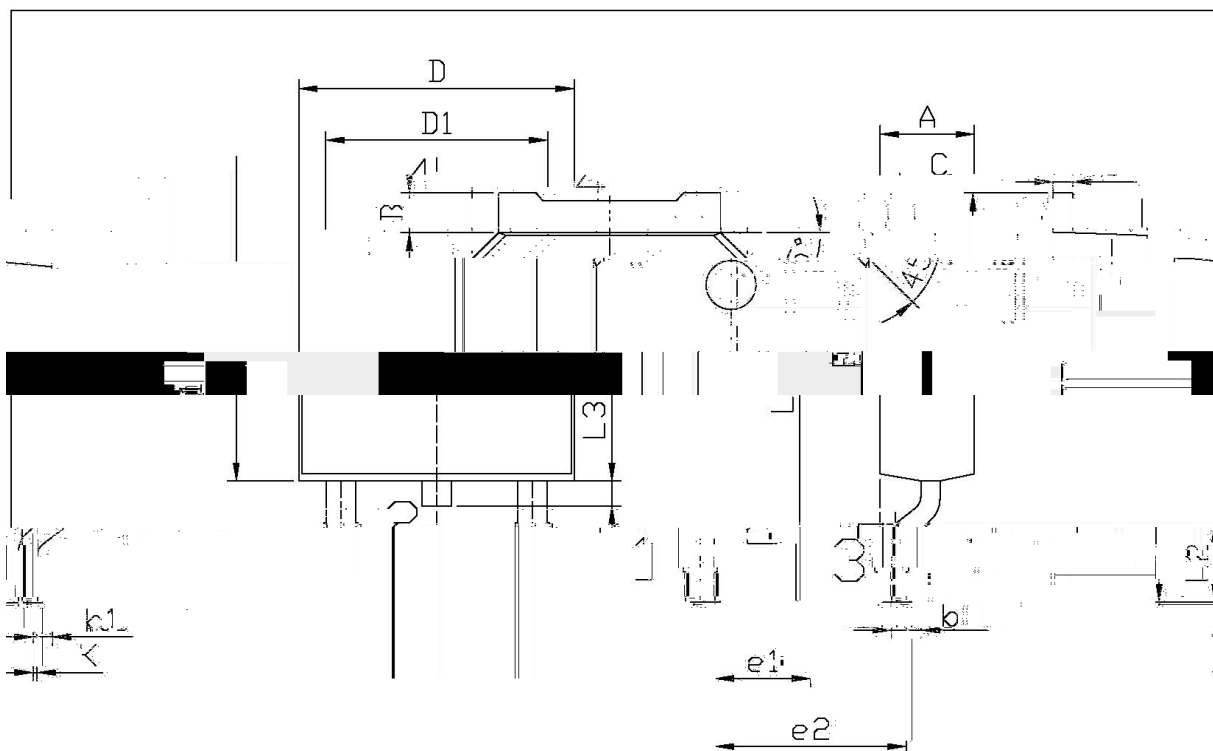
/ Electrical Characteristic Curve



/ Electrical Characteristic Curve



/ Package Dimensions



单位: mm

Symbol		Dimensions In Millimeters		Symbol		Dimensions In Millimeters	
		Min	Max			Min	Max
F	5.05	6.25	5.05	A	12.20	11.2	12.20
e	2.24	2.34		B	0.95	1.2	
g	3.30	2.73			0.70	0.6	
h	0.45	0.55	E1	9.85	10.35		5.0
C	0.15	0.55	I2	1.30	2.00		
	0.90		6.45	6.75	1.3	0.60	
.50	K	0.00	0.10	DI	5.10		

0-252

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