

/ Descriptions

N TO-252

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

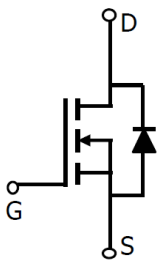
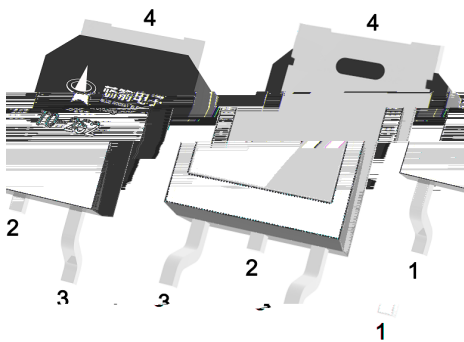
/ Features $V_{DS}=200V$ $I_D=18A$ $V_{GS}=\pm 20V$ $R_{DS(on)}@10V \leq 170m\Omega$ (Type.115m Ω) $R_{DS(on)}@6V \leq 200m\Omega$ (Type.130m Ω)

HF Product.

/ Applications

OHG

Networking, Load Switch, LED applications.

/ Equivalent Circuit**/ Pinning**

PIN1 G PIN 2 4 D PIN 3 S

/ Marking

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		$P_D(T_C=25)$	90	W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^{\circ}C$
Maximum Junction-to-Ambient	$t \leq 10s$	$R_{\theta JA}$	20	$^{\circ}C/W$
Maximum Junction-to-Ambient	Steady-State		50	
Maximum Junction-to-Case	Steady-State	$R_{\theta JC}$	1.39	

/ Electrical Characteristics(Ta=25)

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

BRCS18N20DP

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DATA SHEET

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

/ Electrical Characteristic Curve

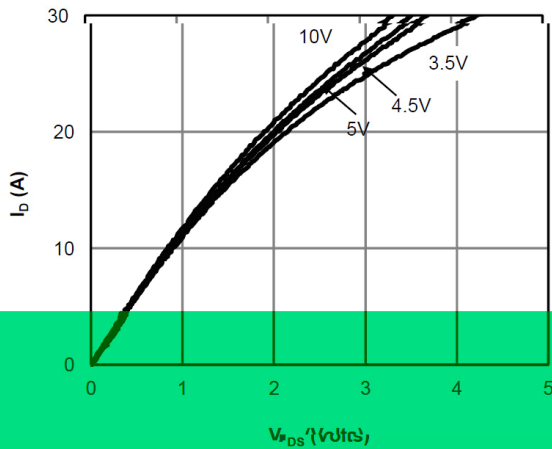


Figure 1: Drain Current vs. Drain-Source Voltage

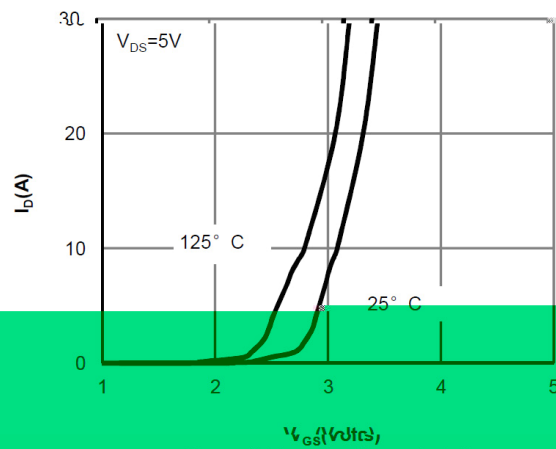


Figure 2: Drain Current vs. Gate-Source Voltage

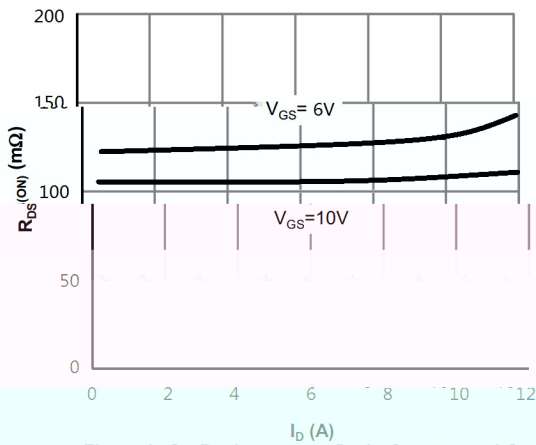


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

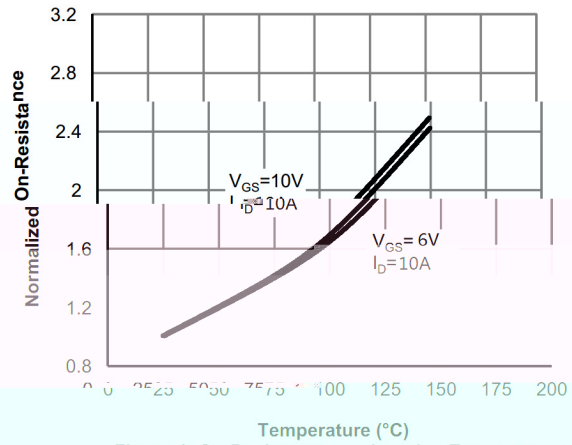


Figure 4: On-Resistance vs. Junction Temperature

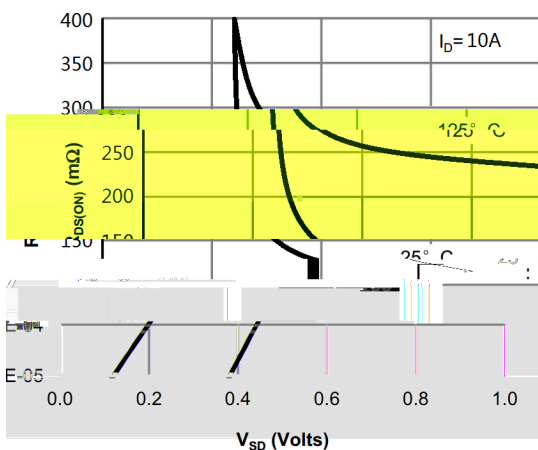


Figure 5: On-Resistance vs. Drain-Source Voltage

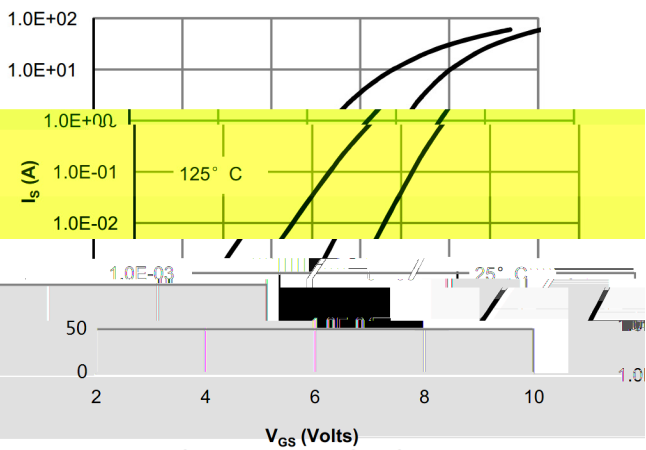
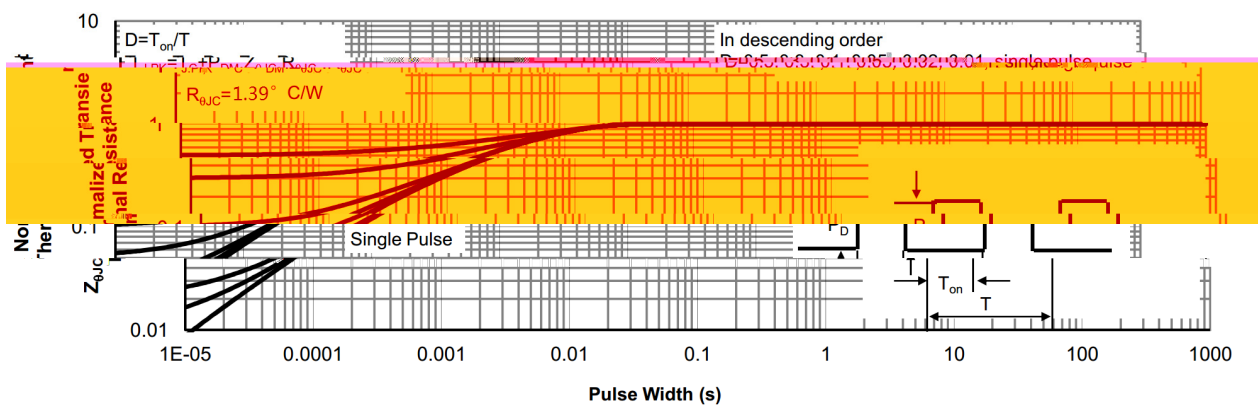
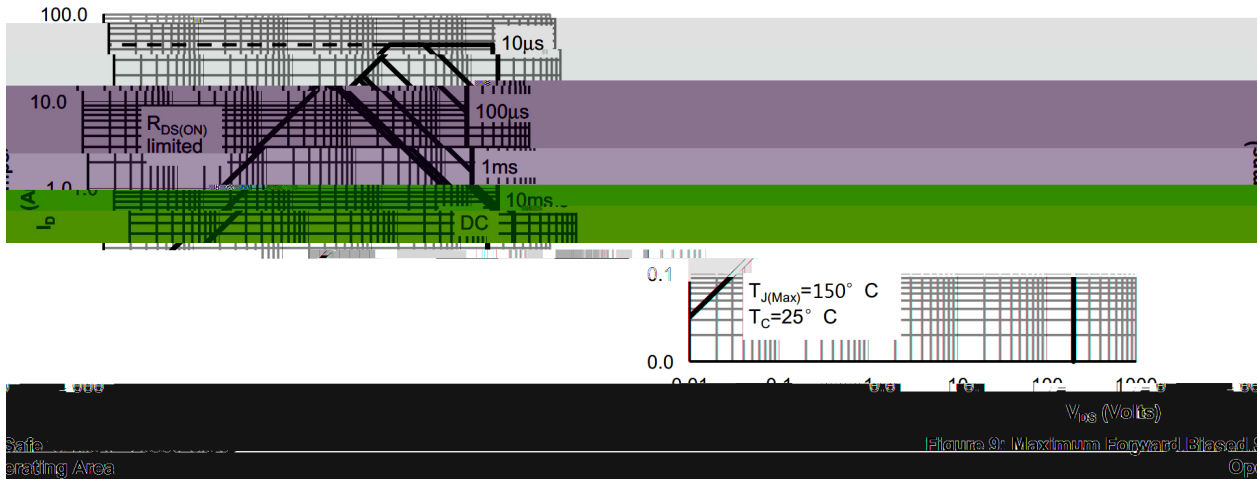
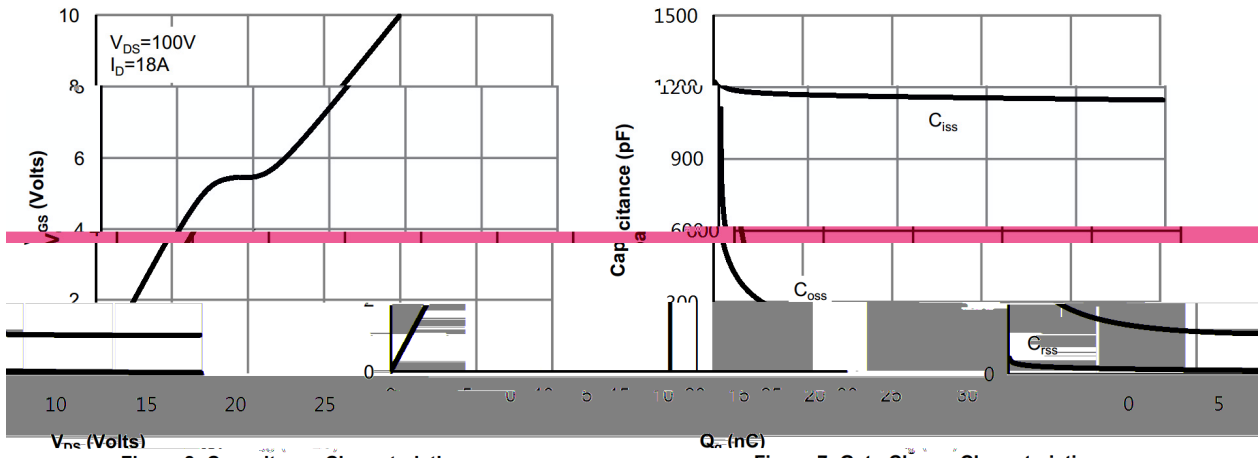
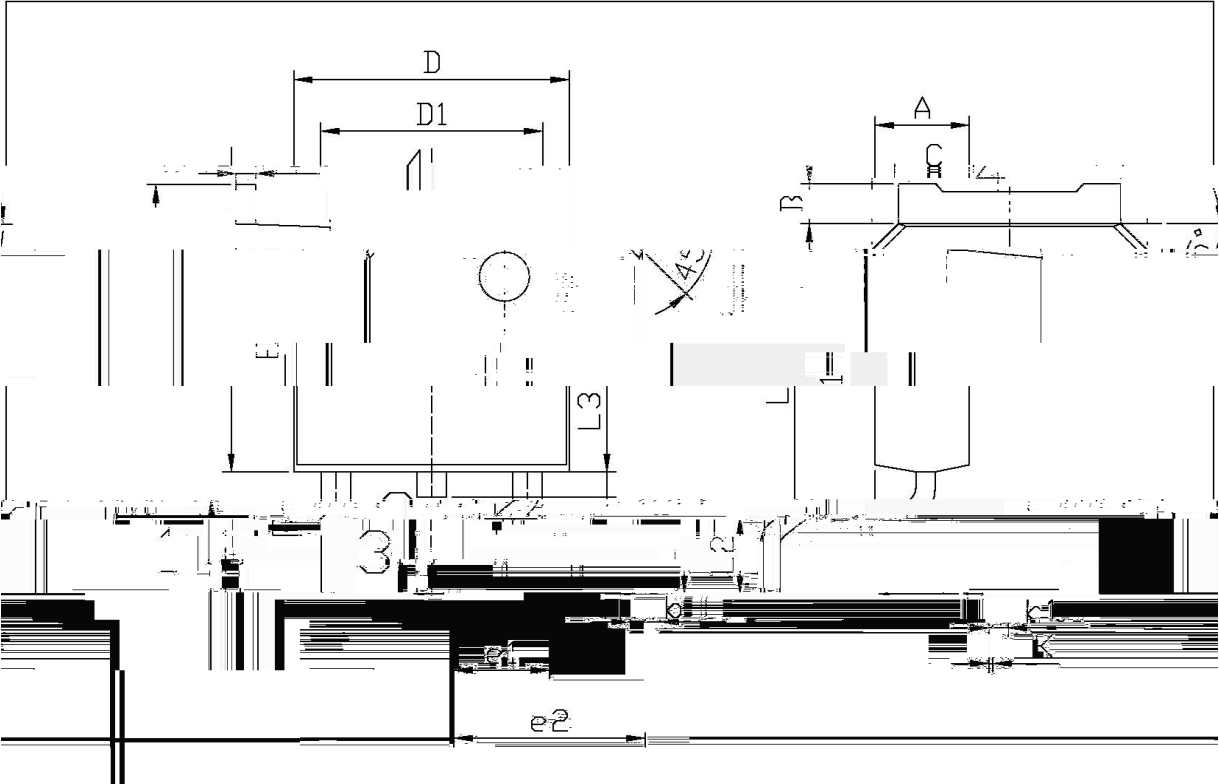


Figure 6: On-Resistance vs. Gate-Source Voltage

/ Electrical Characteristic Curve



/ Package Dimensions

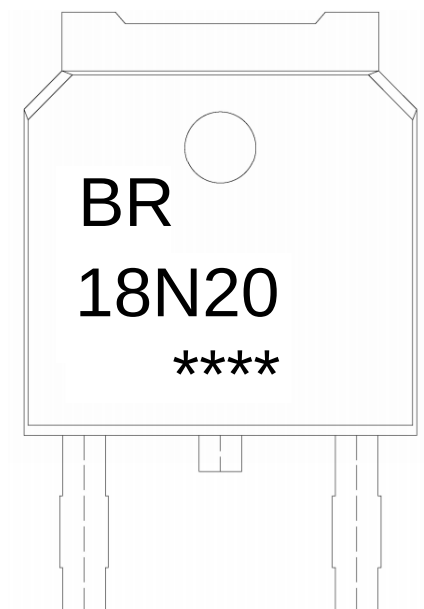


单位: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
6.25	2.20	2.20	2.40	5.95	
2.34	B=1	0.95	1.25	e1	2.24
e2	1.72	2.30	0.70	0.90	0.30
L1	9.85	10.35	b1	0.45	0.55
C	0.45	0.55	J2	1.70	2.00
3/005	0.60	0.90	D	6.45	6.75
5.80	6.60	7.10		7.10	

T0-252

/ Marking Instructions



EU

4; Q53

Note:

BR: Company Code

18N20: Product Type Code

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

BRCS18N20DP