

BRCS20N06DP

Rev.C Jun.-2023

/ Descriptions

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

/ Features

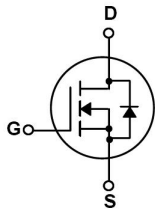
$V_{DS}=60V$; $I_D=20A$
 $R_{DS(on)}@10V$ 37m (Type.25m)
 $R_{DS(on)}@4.5V$ 42m (Type.30m)
HF Product.

/ Applications

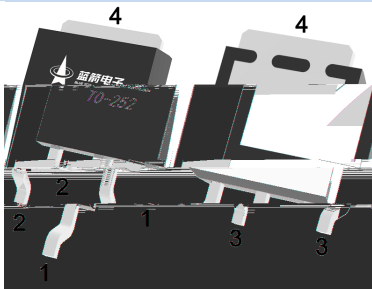
LED

Boost converters and synchronous rectifiers for consumer, telecom, industrial power supplies and LED backlighting.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 D PIN 3 S PIN 4 D

/ Marking

See Marking Instructions.

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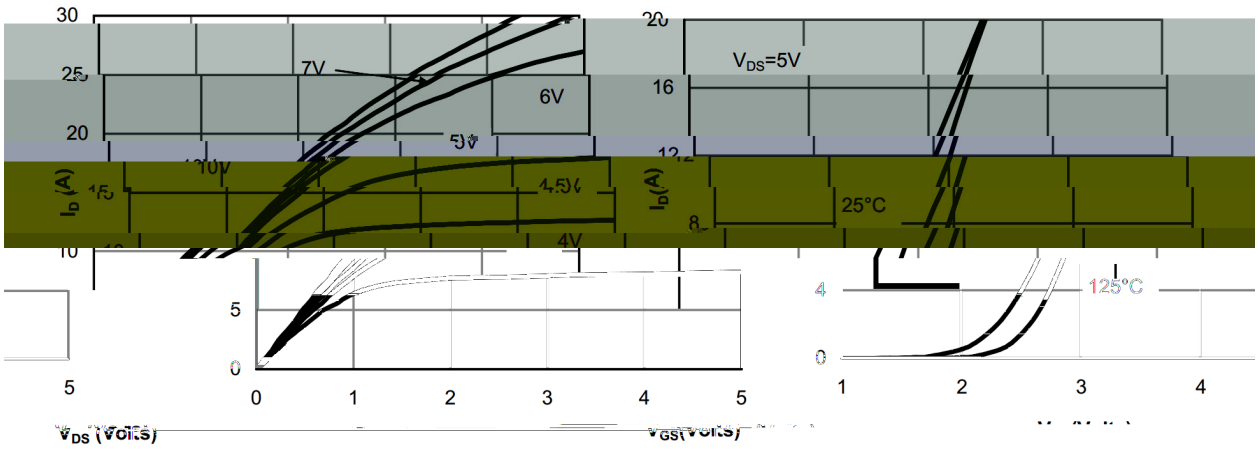
DATA SHEET

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain Current	$I_D(T_C=25^\circ\text{C})$	20	A
Drain Current - Pulsed	I_{DM}	47	A
Gate-Source Voltage	V_{GS}	± 20	V
Avalanche energy(L=0.5mH)	E_{AS}	58	mJ
Avalanche Current(L=0.5mH)	I_{AS}	13	A
Power Dissipation	$P_D(T_C=25^\circ\text{C})$	33.6	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=30V$ $R_L=2.5$ $R_{GEN}=3.0$		4.2		ns
Turn-On Rise Time	t_r			3.4		
Turn-Off Delay Time	$t_{d(off)}$			16		
Turn-Off Fall Time	t_f			2		

/ Electrical Characteristic Curve



On-Region Characteristics Figure 2: Transfer Characteristics Fig 1:

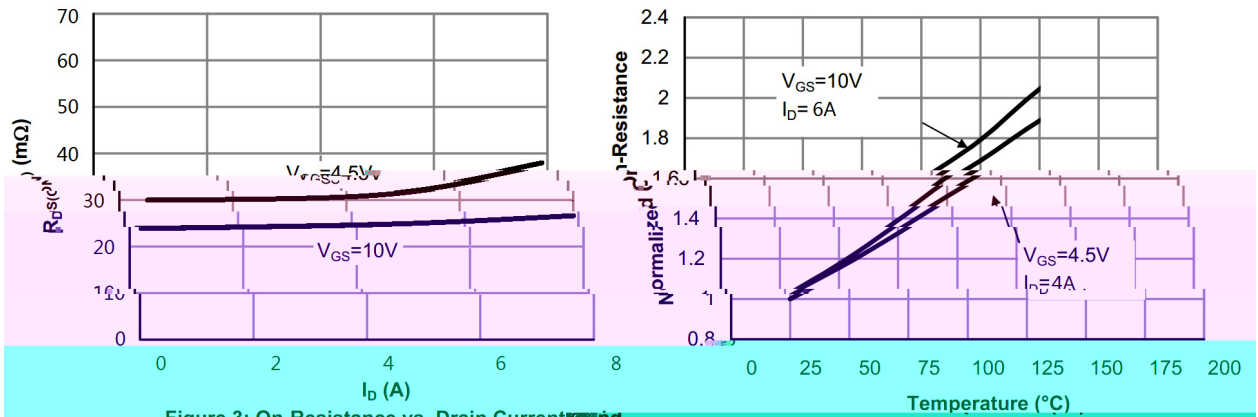


Figure 3: On-Resistance vs. Drain Current and Figure 4: On-Resistance vs. Junction Temperature

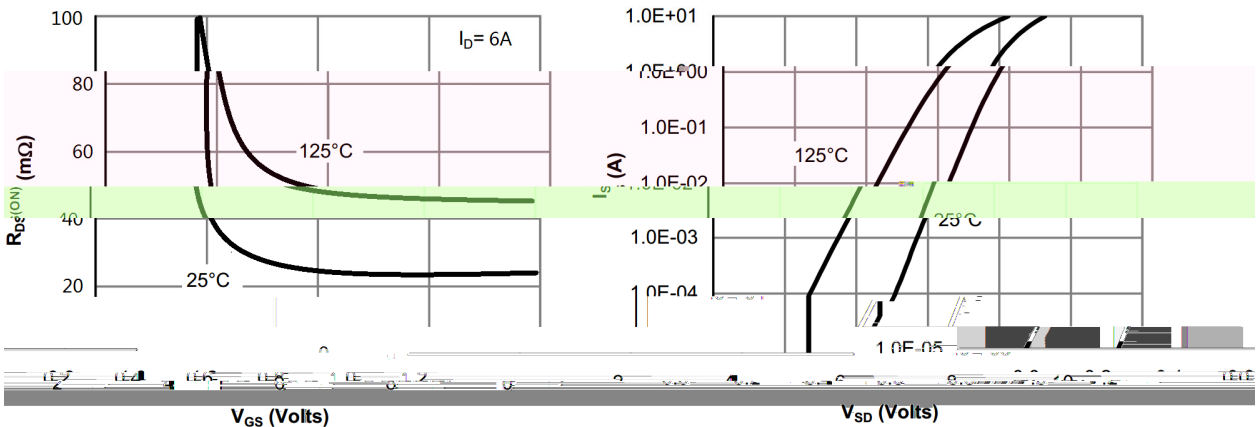


Figure 5: On-Resistance vs. Gate-Source Voltage Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve

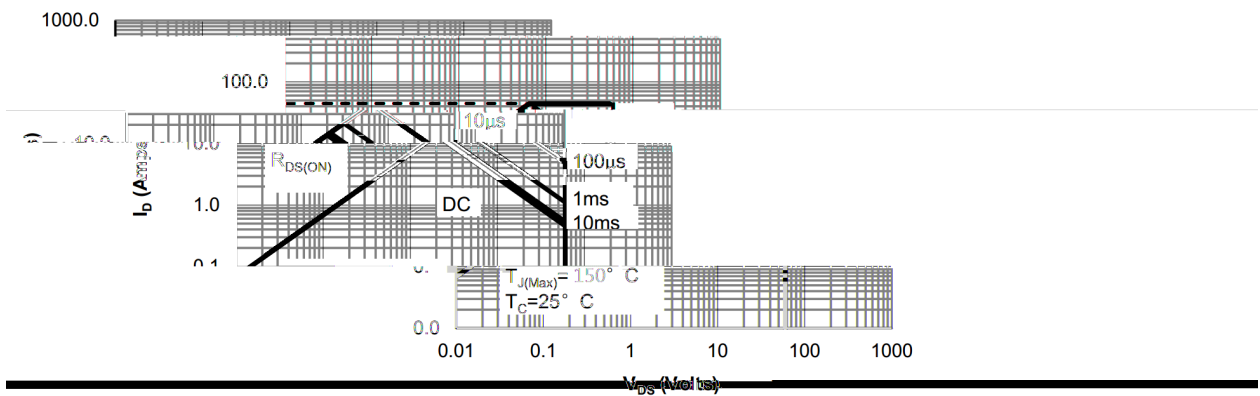
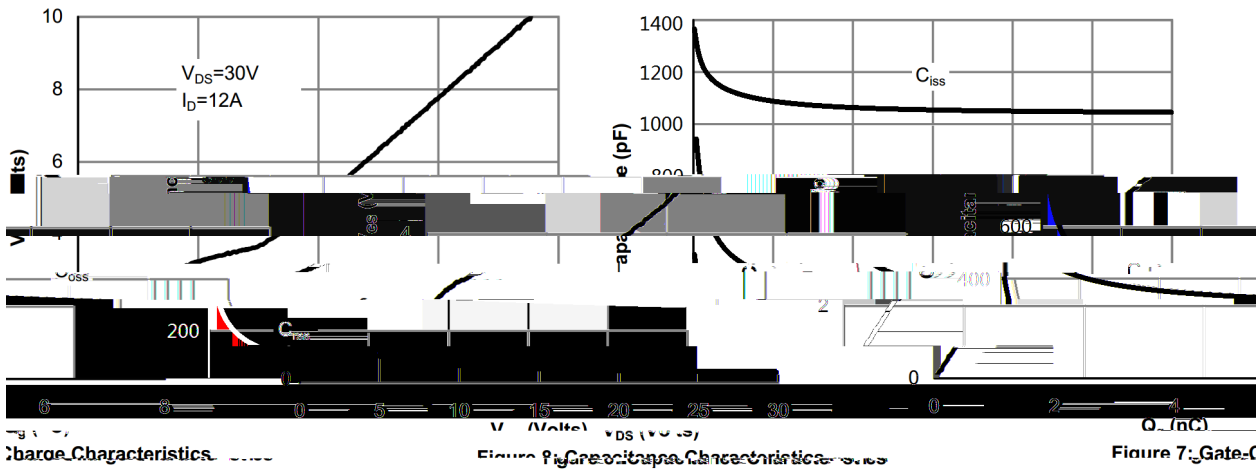


Figure 9: Maximum Forward Biased Safe Operating Area

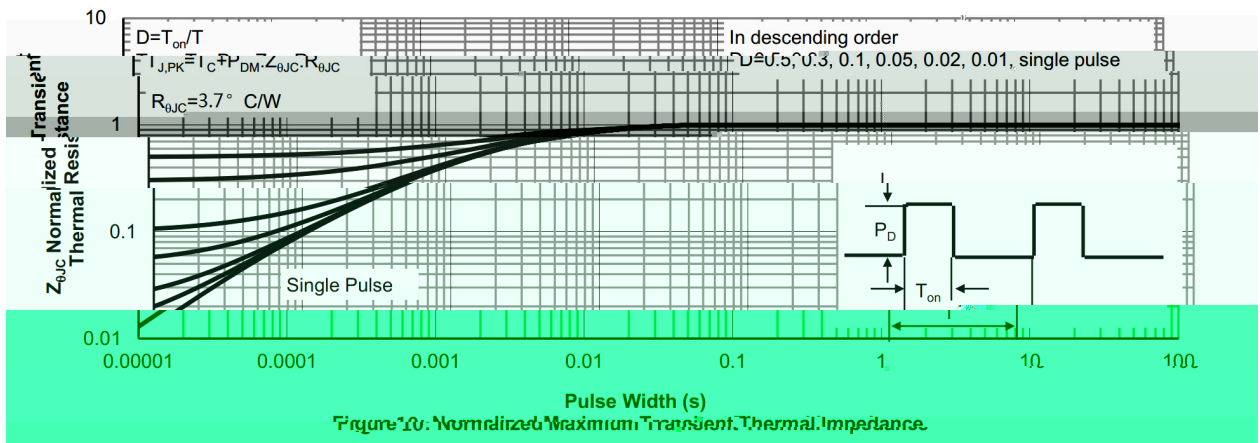
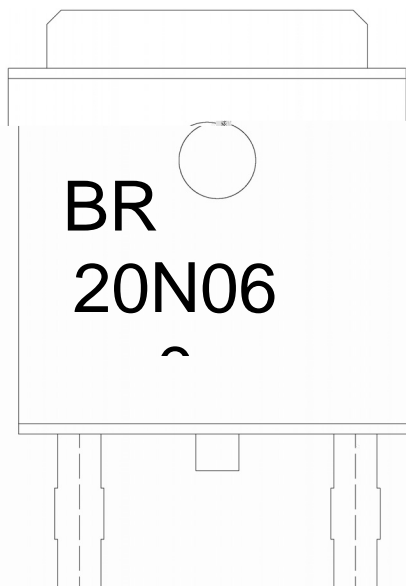


Figure 10: Normalized Maximum Transient Thermal Impedance

/ Marking Instructions



BR

20N06

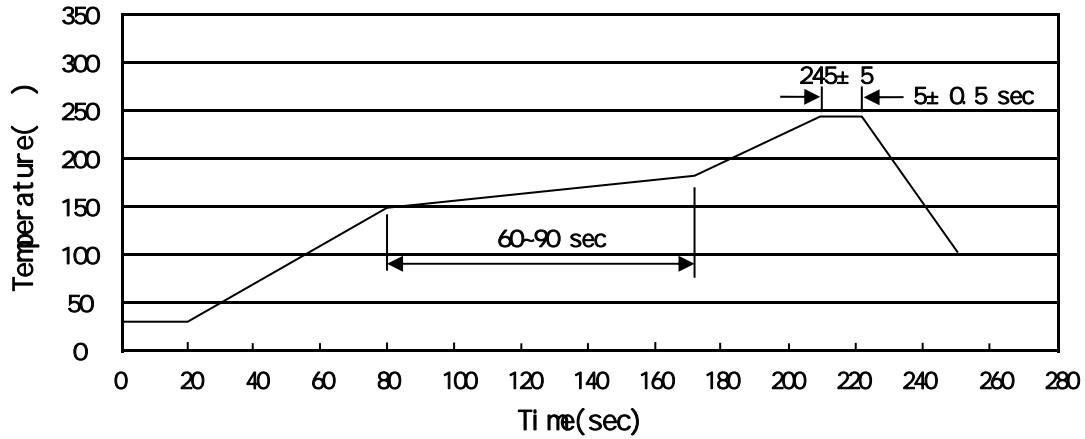
Note:

BR: Company Code

20N06: Product Type

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

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 1 150 180 60 90sec; 1.Preheating:150~180 , Time:60~90sec.
- 2 245 5 5 0.5sec; 2.Peak Temp.:245 5 , Duration:5 0.5sec.
- 3 2 10 /sec. 3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260 5 10 1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
TO-252	2,500	2	5,000	6	30,000	13 x16	360x360x50	380x335x366

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
TO-251/252	75	48	3,600	5	18,000	526x20.5x5.25	555x164x50	575x290x180

/ Notices