

BRCS100N06DP

Rev.C Apr.-2025



DATA SHEET

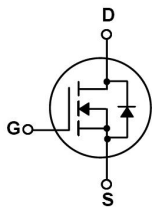
N TO-252

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

Low gate charge, low crss, fast switching, HF Product.

DC/DC

These devices are well suited for high efficiency switching DC/DC converters and switch mode power supplies.



/ Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	100	A
Peak Drain Current	I_{DM}	380	A
Gate-Source Voltage	V_{GS}	± 20	V
Single Pulsed Avalanche Energy	E_{AS}	602	mJ
Avalanche Current	I_{AS}	38.9	A
Total Power Dissipation	$P_D(T_c=25^\circ\text{C})$	60	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$
Thermal Resistance-Junction to Case	$R_{\theta JC}$	2.1	/W
Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	62.5	

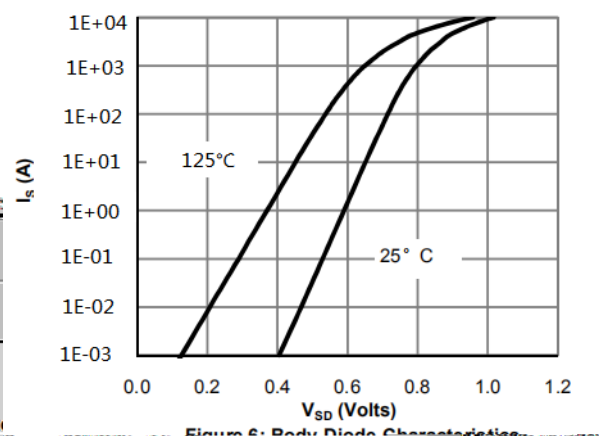
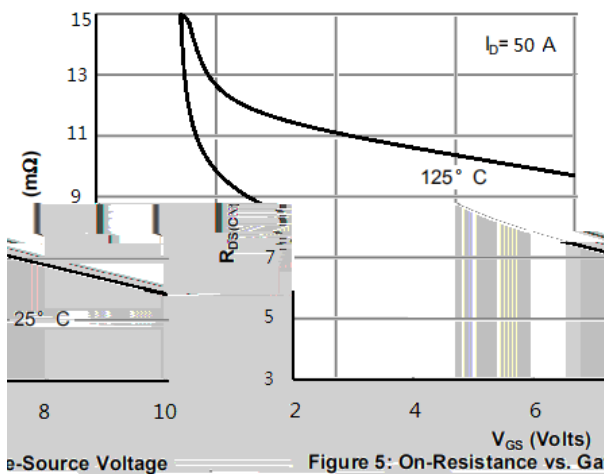
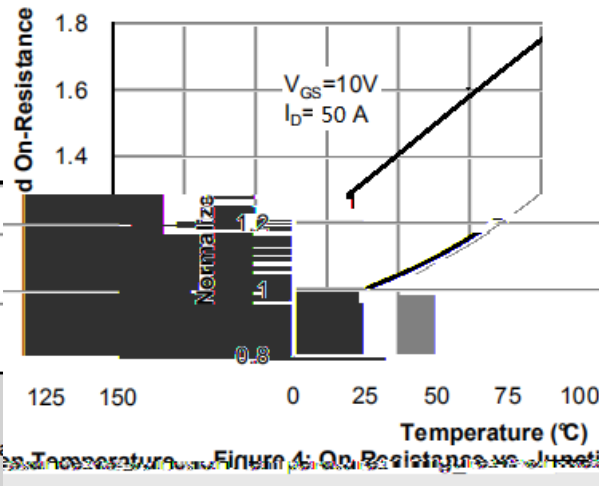
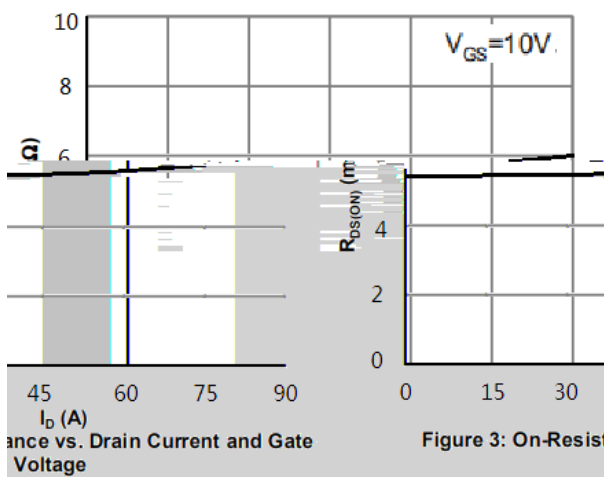
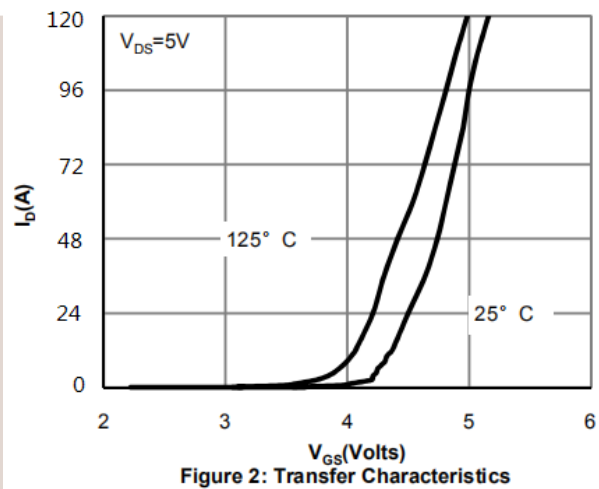
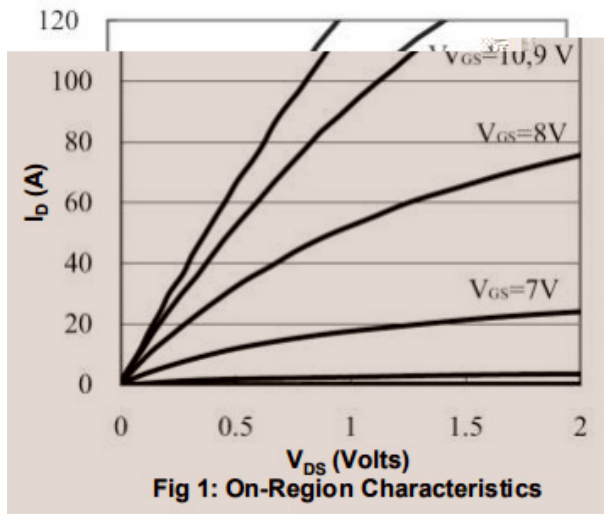
/ Electrical Characteristics($T_a=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=250\text{ A}$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V$ $V_{GS}=0V$			1	A
		$V_{DS}=60V$ $V_{GS}=0V$ $T_J=125^\circ\text{C}$			10	A
Gate-Body leakage current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\text{ A}$	2	2.6	4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=50A$		5.9	7	$m\Omega$

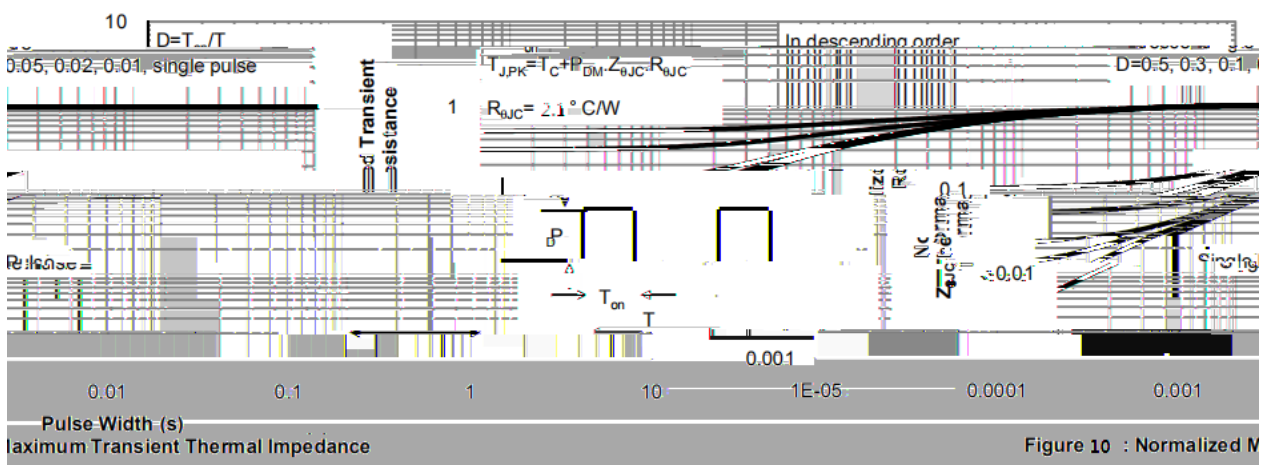
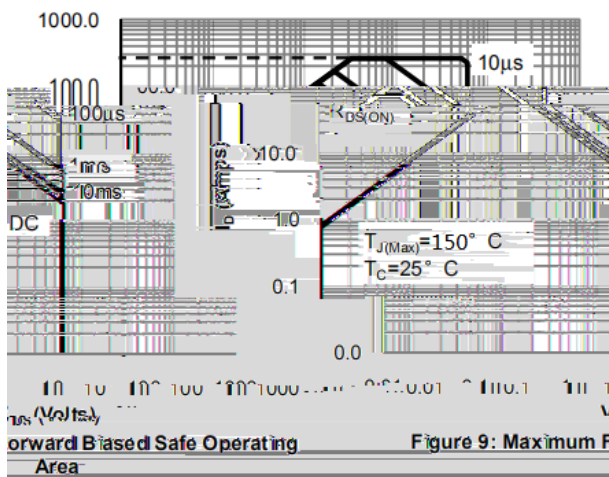
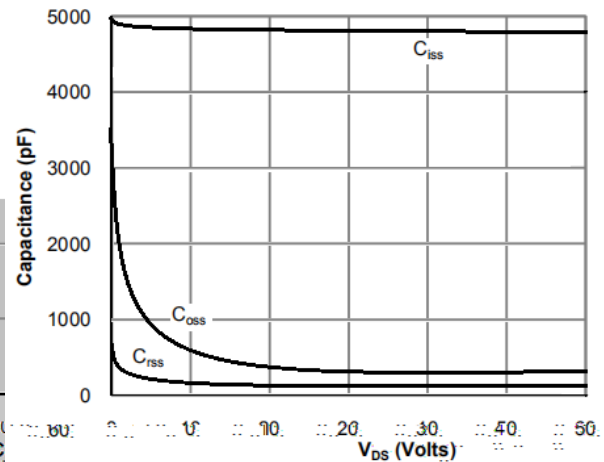
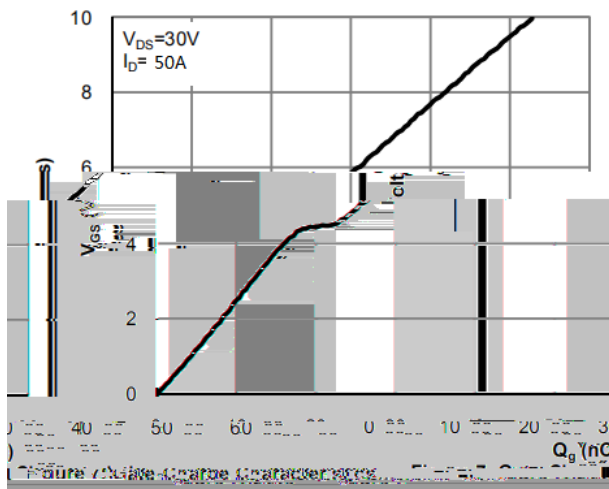
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Diode Forward Voltage	V_{SD}	$I_S=1A$ $V_{GS}=0V$		0.6	1.2	V
Input Capacitance	C_{iss}	$V_{GS}=0V$ $V_{DS}=25V$, $f=1.0MHz$		4920		pF
Output Capacitance	C_{oss}			295		
Reverse Transfer Capacitance	C_{rss}			133		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$, $f=1MHz$		1.2		
Total Gate Charge	$Q_g(10V)$	$V_{GS}=10V$ $V_{DS}=30V$ $I_D=50A$		53	75	nC
Total Gate Charge	$Q_g(4.5V)$			22	31	
Gate Source Charge	Q_{gs}			17		
Gate Drain Charge	Q_{gd}			5		
Turn-On DelayTime	$t_{D(on)}$	$V_{DD}=30V$ $I_D=50A$ $V_{GS}=10V$ $R_G=2.5$		18		ns
Turn-On Rise Time	t_r			20		
Turn-Off DelayTime	$t_{D(off)}$			33		
Turn-Off Fall Time	t_f			4		

A. The value of R_{qJA} is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^{\circ}C$. The Power dissipation PDSM is based on R_{qJA} and the maximum $\eta(f)=2.17227(a)1.857ed\text{ core}21.5803useful\text{ }Q\text{ setting }TDu4.6(3.117-1.385723-2\text{ }P)I17.09720.48-8il17.017T15$ and $\eta(f)=2.17227(a)1.857ed\text{ core}21.5803useful\text{ }Q\text{ setting }TDu4.6(3.117-1.385723-2\text{ }P)I17.09720.48-8il17.017T15$ and $\eta(f)=2.17227(a)1.857ed\text{ core}21.5803useful\text{ }Q\text{ setting }TDu4.6(3.117-1.385723-2\text{ }P)I17.09720.48-8il17.017T15$

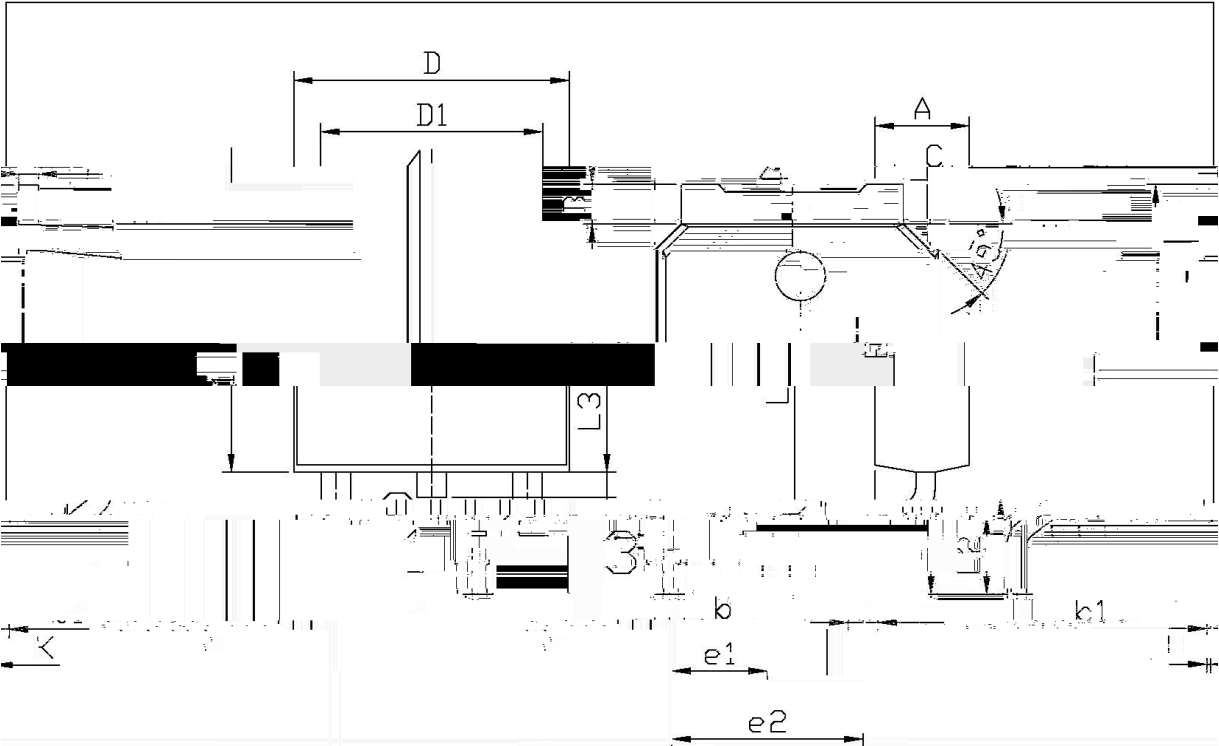
/ Electrical Characteristic Curve



/ Electrical Characteristic Curve



/ Package Dimensions



单位: mm

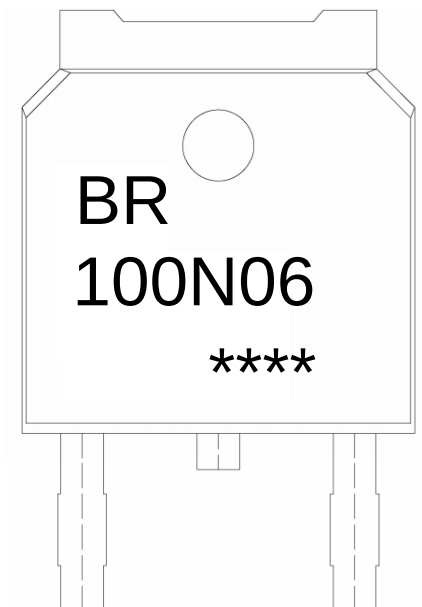
Symbol		Dimensions In Millimeters		Symbol		Dimensions In Millimeters	
		Min	Max			Min	Max
25	6.25		4	2.20	2.40	E	5.0
24	2.34		"B	0.95	1.25	e1	2.0
10	1.73		b1	0.70	0.80	L1	4.0
	9.85	10.35			0.45	0.55	
	0.3	0.60	0.90		1.70	2.00	
50	K	0.00	0.10	DL	6.45	6.75	5.0

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/ Marking Instructions



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100N06

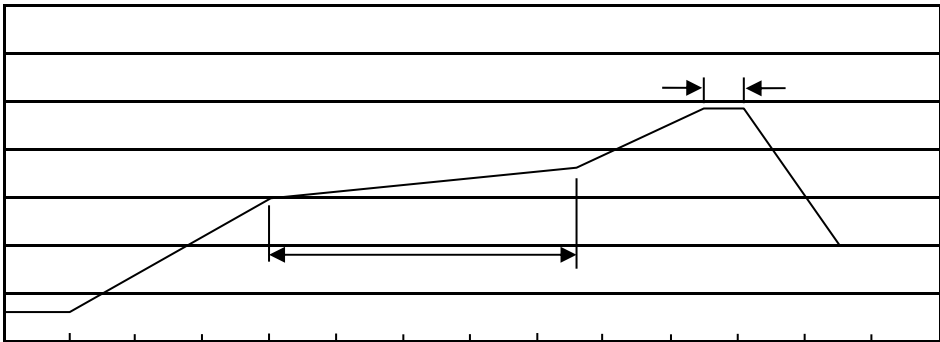
Note:

BR: Company Code

100N06: Product Type Code

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

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



- Note:
- 1 150 180 60 90sec;

2 245±5 5±0.5sec;

3 2 10 /sec.
- 1.Preheating:150~180 , Time:60~90sec.

2.Peak Temp.:245±5 , Duration:5±0.5sec.

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 ×16	360×360×50	380×335×366

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices