

BRCS30P10IP

Rev.A Sep.-2018

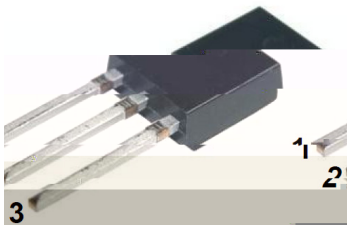
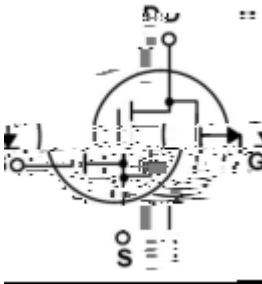
TO-251 P MOS P-CHANNEL MOSFET in a TO-251 Plastic Package.

$R_{DS(on)}$ C_{rss}

Low $R_{DS(on)}$, low gate charge, low C_{rss} , fast switching.

DC/DC

Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.



PIN1

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Capacitance	C_{iss}	$V_{DS}=-25V$ $V_{GS}=0V$ $f=1.0MHz$		5110		pF
Output Capacitance	C_{oss}			198		
Reverse Transfer Capacitance	C_{rss}			131		
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		3.87		
Total Gate Charge	$Q_g(10V)$	$V_{GS}=-10V$ $V_{DS}=-50V$ $I_D=-20A$		16.5	25	nC
Total Gate Charge	$Q_g(4.5V)$			7	12	
Gate Source Charge	Q_{gs}			4.5		
Gate Drain Charge	Q_{gd}			2.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=-10V$ $V_{DS}=-50V$ $R_L=2.5$ $R_{GEN}=23$		7		ns
Turn-On Rise Time	t_r			8		
Turn-Off Delay Time	$t_{d(off)}$			20		
Turn-Off Fall Time	t_f			3		
Body Diode Reverse Recovery Time	t_{rr}	$I_F=-20A$ $dI/dt=500A/ms$		30		ns
Body Diode Reverse Recovery Charge	Q_{rr}	$I_F=-20A$ $dI/dt=500A/ms$		145		nC
Maximum Junction-to-Ambient ^A	R_{JA}	$t \leq 10s$		16	20	/W
Maximum Junction-to-Ambient ^{AD}		steady-State		41	50	/W
Maximum Junction-to-Case	R_{JC}	steady-State		2.2	2.8	/W

A. The value of R_{JA} 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 allowed junction temperature of $150^{\circ}C$. The value in any given application depends on the user's specific board design, and the maximum temperature of $150^{\circ}C$ may be used if the PCB allows it.

B. The power dissipation PD is based on $T_{J(MAX)}=150^{\circ}C$, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heatsinking is used.

C. Repetitive rating, pulse width limited by junction temperature (e.g. $t=50\mu s$), $T_{J(MAX)}$

/ Electrical Characteristic Curve

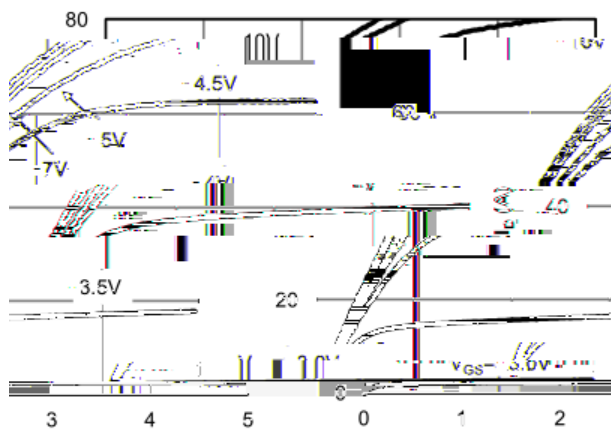


Fig 1: On-Region Characteristics

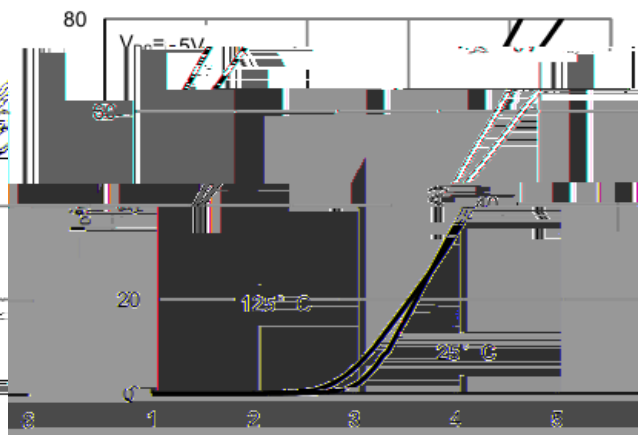


Figure 2: Transfer Characteristics

/ Electrical Characteristic Curve

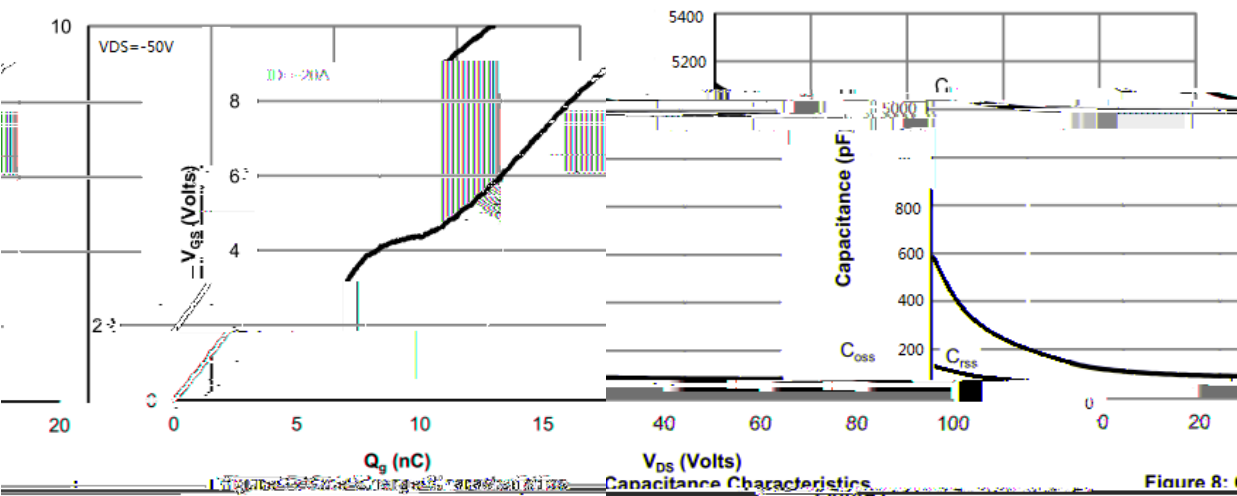
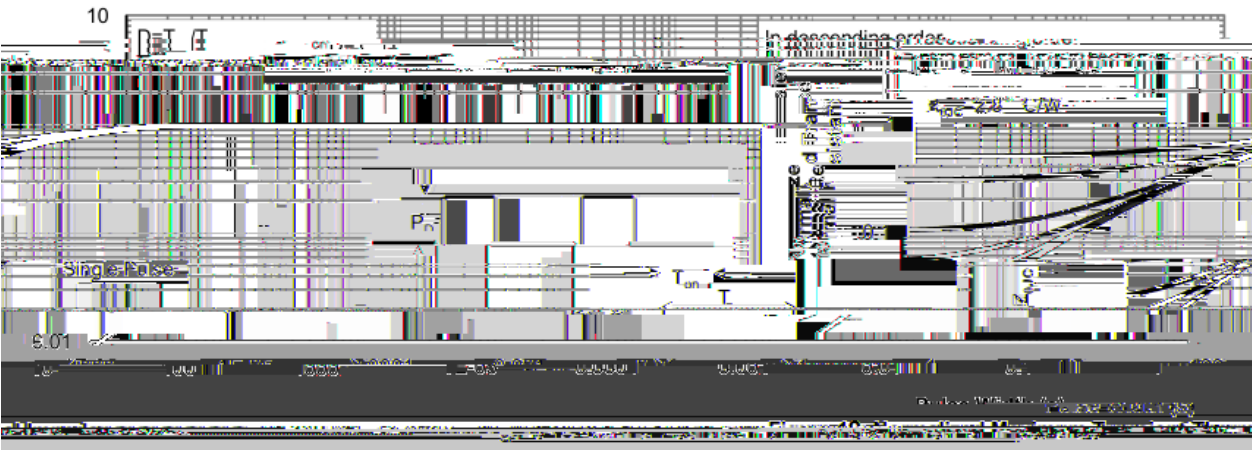
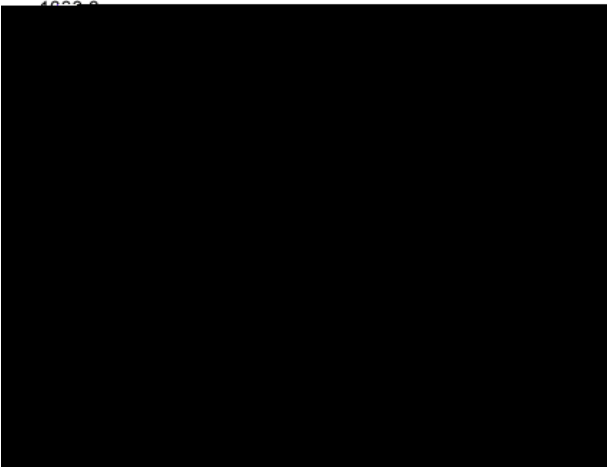
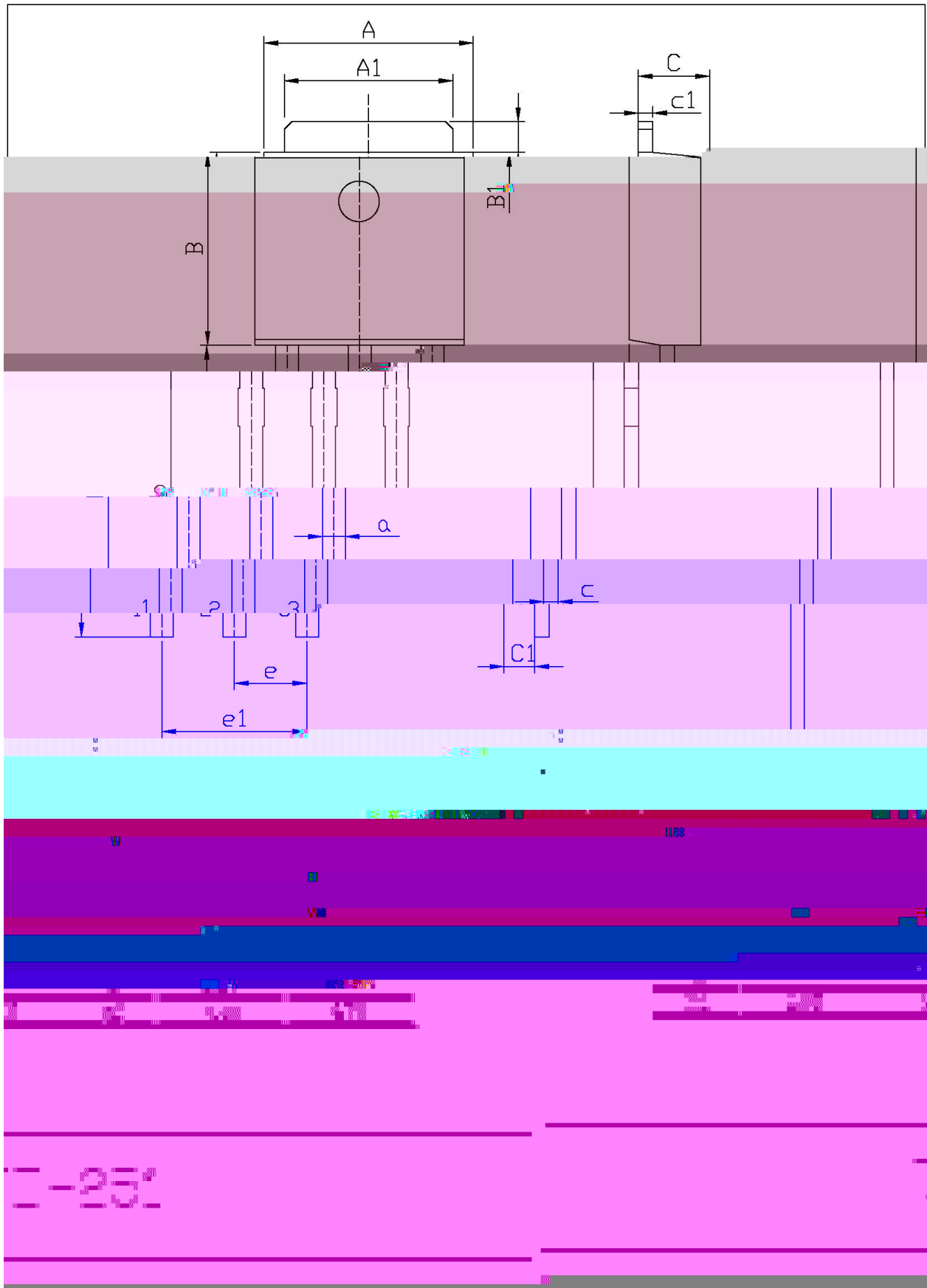


Figure 8:



/ Package Dimensions



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DATA SHEET


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


Note:

- 1 25 150 60 90sec;
- 2 255±5 5±0.5sec;
- 3 2 10 /sec.

- 1.Preheating:25~150 , Time:60~90sec.
- 2.Peak Temp.:255±5 , Duration:5±0.5sec.
3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

270±5

10±1 sec.

Temp.:270±5

Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		

/ TUBE

Package Type	Units					Dimension (unit mm ³)		

/ Notices