

/ Descriptions

PDFN5×6      P  
P-Channel MOSFET in a PDFN5×6 Plastic Package.

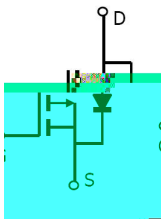
/ Features

$V_{DS} (V) = -100V$        $I_D = -73A (V_{GS} = \pm 20V)$   
 $R_{DS(ON)} @ -10V \leq 19m\Omega (Typ. 17m\Omega)$   
 $R_{DS(ON)} @ -4.5V \leq 21m\Omega (Typ. 18.5m\Omega)$   
HF Product.

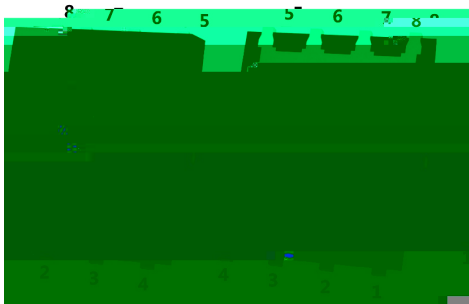
/ Applications

DC-DC  
Motor drivers, DC-DC Converte.

/ Equivalent Circuit



/ Pinning



PIN1 2 3 S PIN4 G PIN5 6 7 8 D

| Pin | 极性 |
|-----|----|
| 1   | S  |
| 2   | S  |
| 3   | S  |
| 4   | G  |
| 5   | D  |
| 6   | D  |
| 7   | D  |
| 8   | D  |

/ Marking

See Marking Instructions.



## / Electrical Characteristics(Ta=25 Unless Otherwise Noted)

| Parameter                      | Symbol         | Test Conditions                                                                       | Min  | Typ   | Max       | Unit       |
|--------------------------------|----------------|---------------------------------------------------------------------------------------|------|-------|-----------|------------|
| Drain-Source Breakdown Voltage | $BV_{DSS}$     | $I_D = -250\mu A, V_{GS} = 0V$                                                        | -100 |       |           | V          |
| Drain Leakage Current          | $I_{DSS}$      | $V_{DS} = -80V, V_{GS} = 0V$                                                          |      |       | -1        | $\mu A$    |
| Gate Leakage current           | $I_{GSS}$      | $V_{DS} = 0V, V_{GS} = \pm 20V$                                                       |      |       | $\pm 100$ | nA         |
| Gate Threshold Voltage         | $V_{GS(th)}$   | $V_{DS} = V_{GS}, I_D = -250\mu A$                                                    | -1.0 |       | -2.5      | V          |
| On-State Resistance            | $R_{DS(on)}^a$ | $V_{GS} = -10V, I_D = -30A$                                                           |      | 17    | 19        | m $\Omega$ |
|                                |                | $V_{GS} = -4.5V, I_D = -20A$                                                          |      | 18.5  | 21        |            |
| Diode Forward Voltage          | $V_{SD}^a$     | $I_S = -30A, V_{GS} = 0V$                                                             |      |       | -1.3      | V          |
| Reverse Recovery Time          | $t_{rr}$       | $I_D = -30A, V_{GS} = 0V$<br>$dI_{SD}/dt = 100A/\mu s$                                |      | 41    |           | nS         |
| Reverse Recovery Charge        | $Q_{rr}$       |                                                                                       |      | 75    |           | nC         |
| Input Capacitance              | $C_{iss}$      | $V_{GS} = 0, V_{DS} = -50V$<br>$f = 1MHz$                                             |      | 14265 |           | pF         |
| Output Capacitance             | $C_{oss}$      |                                                                                       |      | 301   |           |            |
| Reverse Transfer Capacitance   | $C_{rss}$      |                                                                                       |      | 30    |           |            |
| Total Gate Charge              | $Q_g$          | $V_{GS} = -10V, V_{DS} = -50V$<br>$I_D = -30A$                                        |      | 245   |           | nC         |
| Gate-Source Charge             | $Q_{gs}$       |                                                                                       |      | 56    |           |            |
| Gate-Drain Charge              | $Q_{gd}$       |                                                                                       |      | 27    |           |            |
| Turn-on Delay Time             | $t_{d(ON)}$    | $V_{GS} = -10V, V_{DS} = -50V$<br>$R_L = 1.66\Omega, R_G = 3.9\Omega$<br>$I_D = -30A$ |      | 13    |           | ns         |
| Turn-on Rise Time              | $t_r$          |                                                                                       |      | 49    |           |            |
| Turn-off Delay Time            | $t_{d(OFF)}$   |                                                                                       |      | 329   |           |            |
| Turn-off Fall Time             | $t_f$          |                                                                                       |      | 115   |           |            |

## Notes

a : Pulse test ; pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ 

b : Guaranteed by design, not subject to production testing

**BRCS200P10ZC**

/ Electrical Characteristic Curve

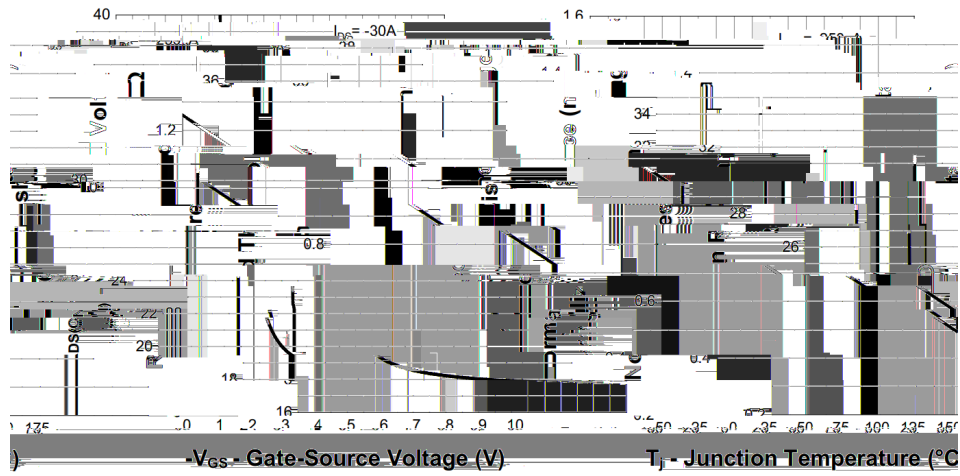
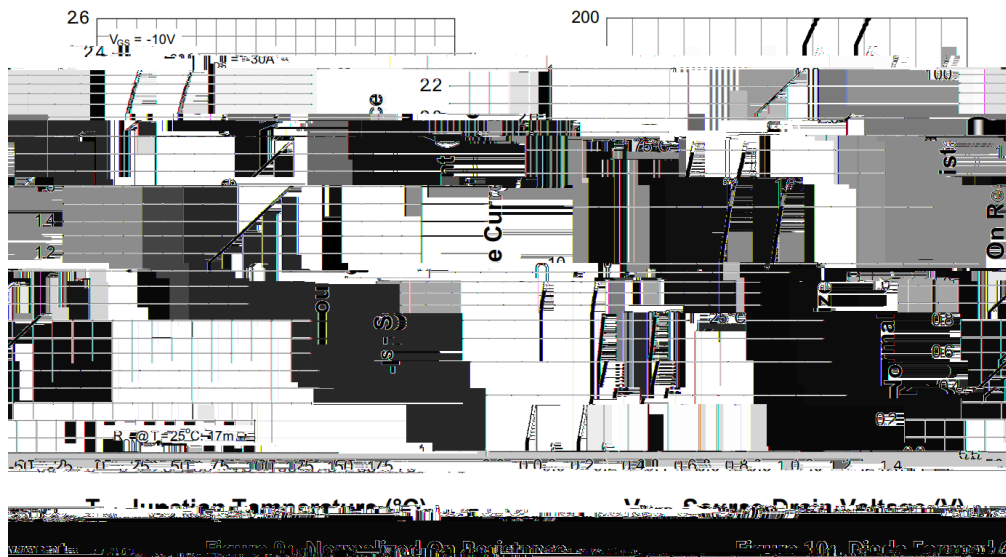


Figure 7: Transfer Characteristics

Figure 8: Normalized Threshold V



**BRCS200P10ZC**



(     ) / 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.