

BRCS035N06SHZC

Rev.A May.-2024

/ Descriptions

PDFN5 6 N

N-Channel MOSFET in a PDFN5x6 Plastic Package.

/ Features

$V_{DS} (V) = 60V$ $I_D = 111A (V_{GS} = \pm 20V)$

$R_{DS(ON)} @ 10V = 3.6m\Omega (Typ. 3.45m\Omega)$

HF Product.

/ Applications

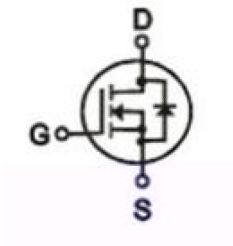
MB/NB/UMPC/VGA

Buck

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Battery Management, High Frequency Point-of-Load Synchronous Buck Converter for MB/NB/UMPC/VGA, Networking DC-DC Power System, Load Switch.

/ 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.

/ Absolute Maximum Ratings($T_a=25$)

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	60	V	
Continuous Drain Current	I_D	111	A	
Pulsed Drain Current	I_{DM}	227	A	
Gate-Source Voltage	V_{GS}	± 20	V	
Power Dissipation	$P_D(T_c=25)$	78	W	
Avalanche energy(L=0.5mH)	E_{AS}	693	mJ	
Avalanche Current(L=0.5mH)	I_{AS}	43	A	
Junction and Storage Temperature Range	T_j, T_{stg}	-55 to 150		
Maximum Junction-to-Ambient	t 10s	R_{JA}	17	/ W
	Steady-State		55	
Maximum Junction-to-Case	Steady-State	R_{JC}	1.6	

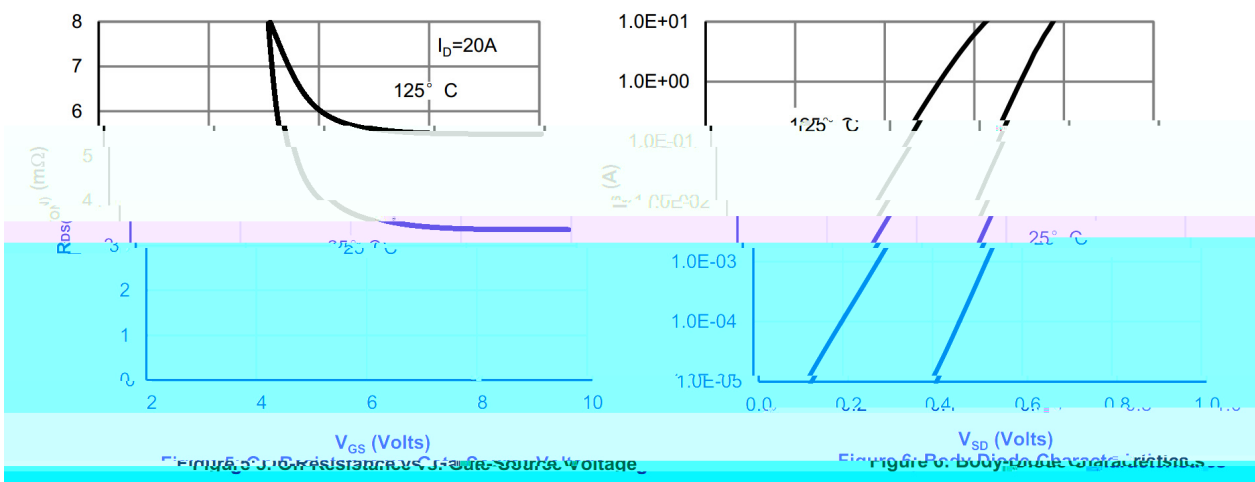
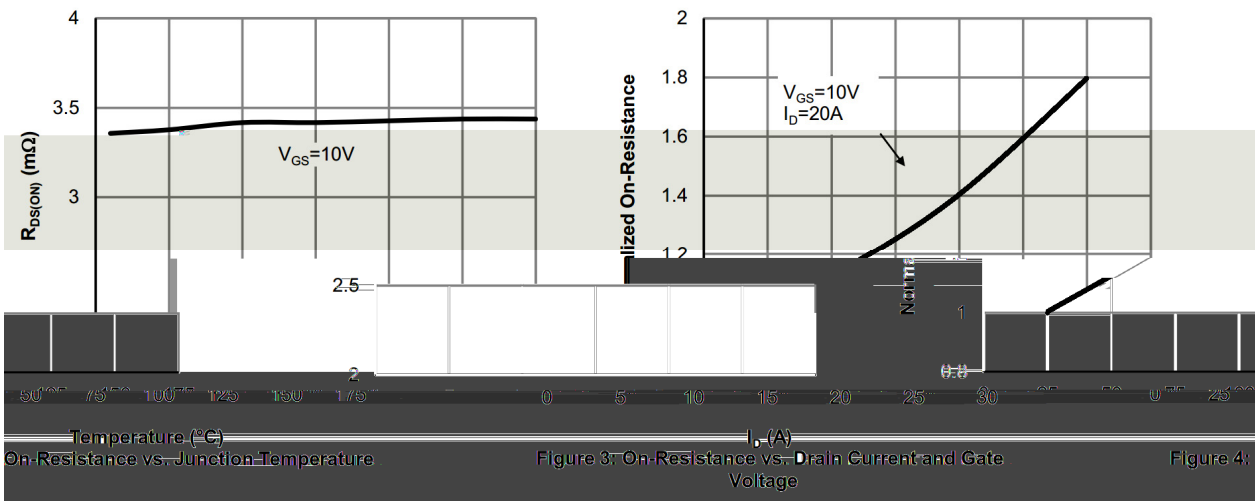
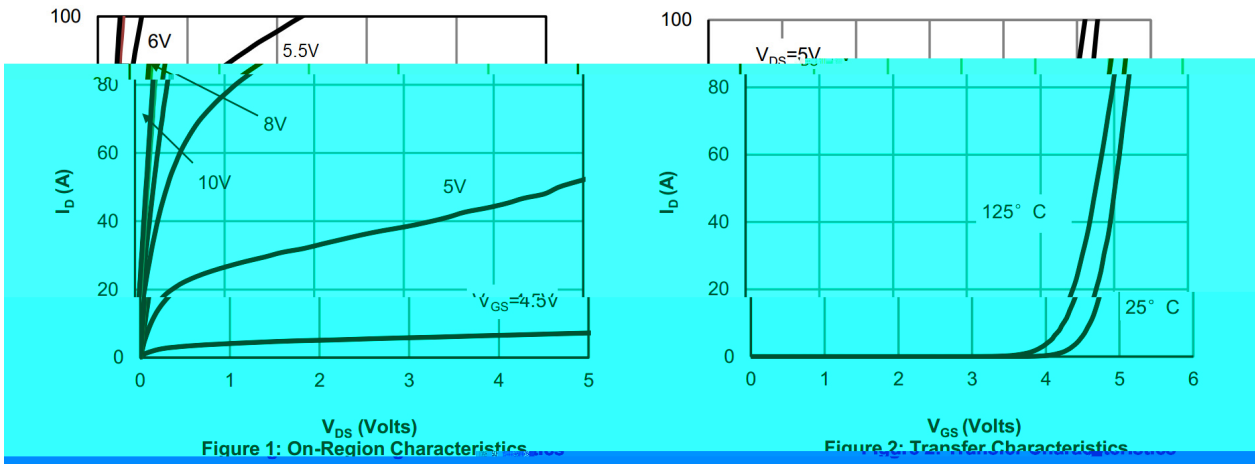
/ Electrical Characteristics($T_a=25$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	60	70		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$			1.0	μA
Gate-Body leakage current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2.0	3.0	4.0	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=20A$		3.45	3.6	m
Diode Forward Voltage	V_{SD}	$I_S=1A, V_{GS}=0V$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1.0MHz$		4400		pF
Output Capacitance	C_{oss}			1400		
Reverse Transfer Capacitance	C_{rss}			73		
Gate resistance	R_g	$V_{GS}=0V, V_{DS}=0V, f=1MHz$		1.1		
Total Gate Charge	Q_g	$V_{GS}=10V, V_{DS}=30V, I_D=20A$		42		nC
Gate Source Charge	Q_{gs}			14		
Gate Drain Charge	Q_{gd}			11		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=30V$ $R_L=1.5$ $R_{GEN}=3$		13		ns
Turn-On Rise Time	t_r			4		
Turn-Off Delay Time	$t_{d(off)}$			47		
Turn-Off Fall Time	t_f			6.5		

/ Electrical Characteristic Curve



/ Electrical Characteristic Curve

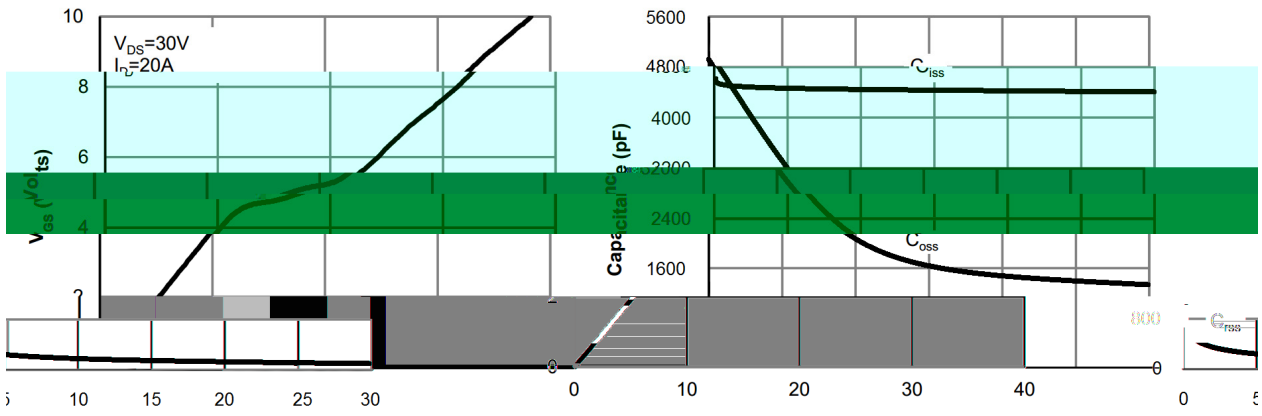


Figure 8: Capacitance Characteristics

Figure 7: Gate-Charge Characteristics

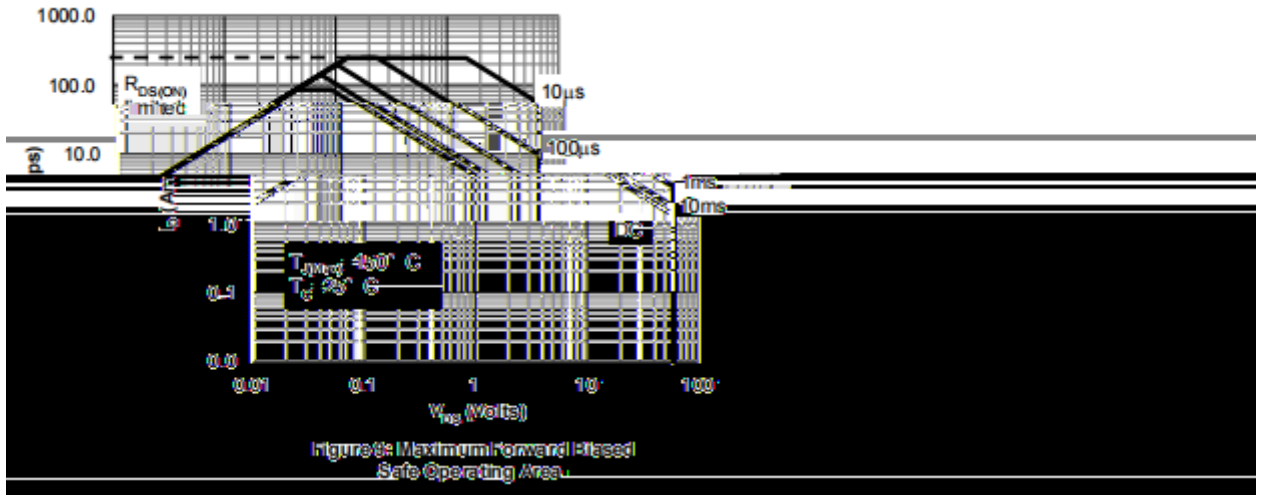
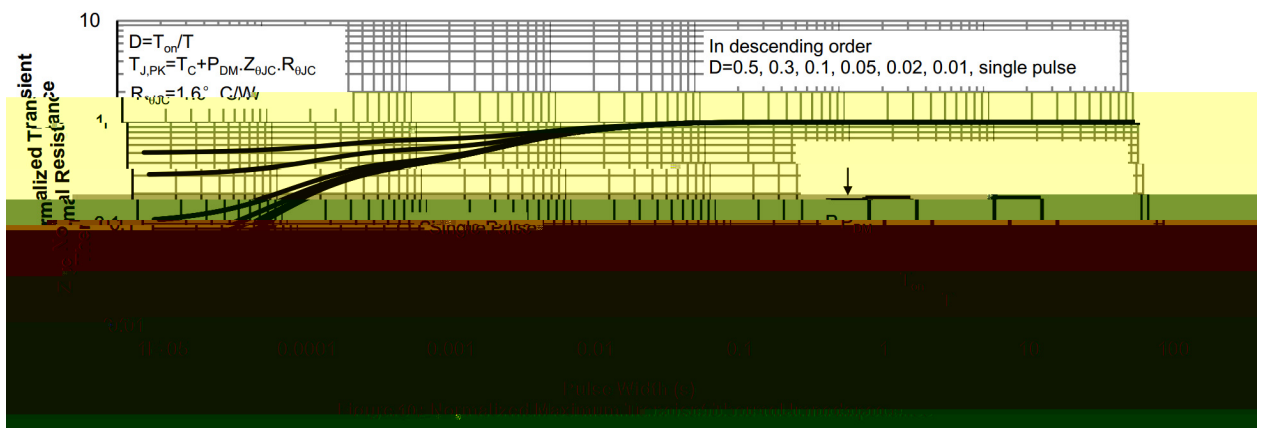


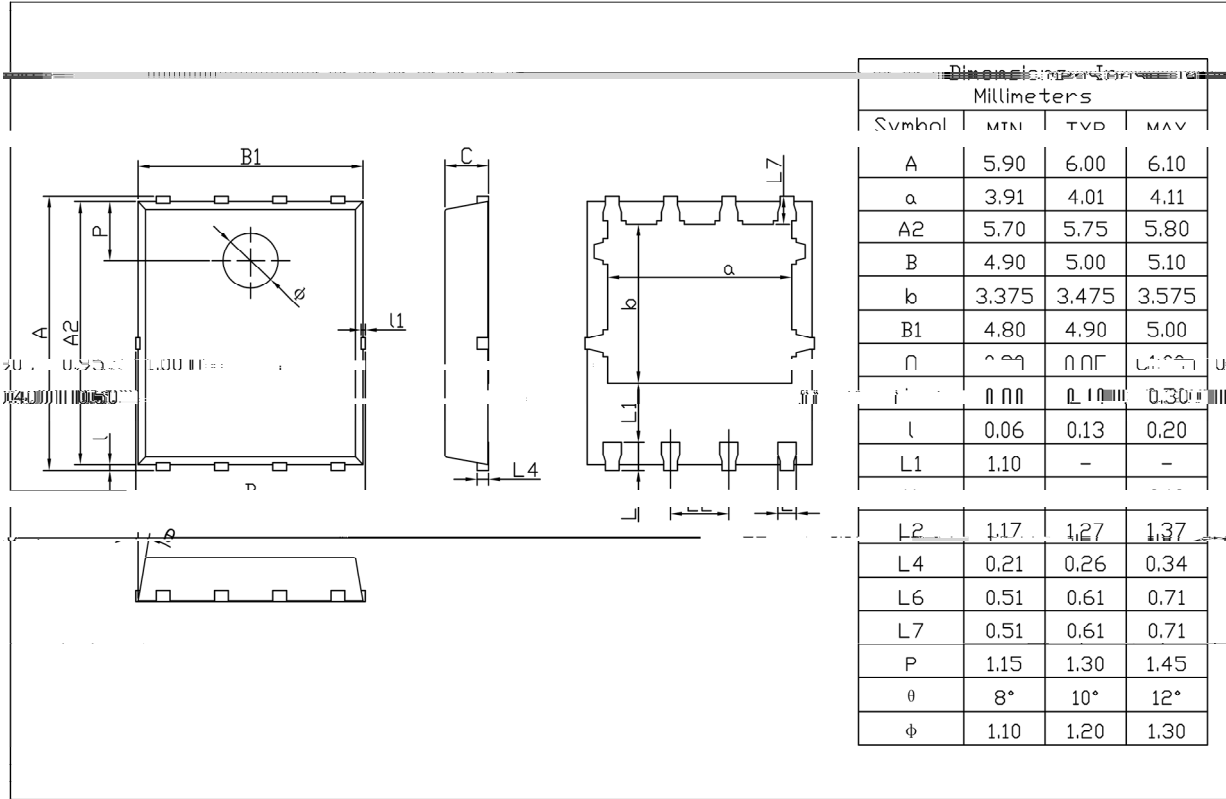
Figure 6: Maximum Forward Biased Safe Operating Area



/ Package Dimensions

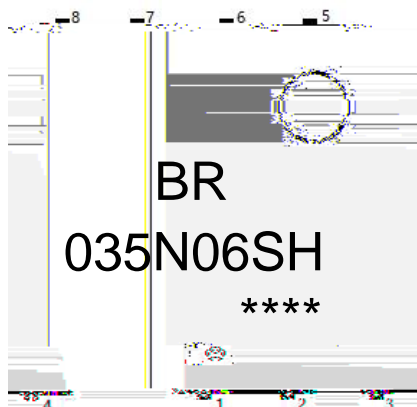
PDFN5 X6

Unit:mm



Rev.01 202209

/ Marking Instructions

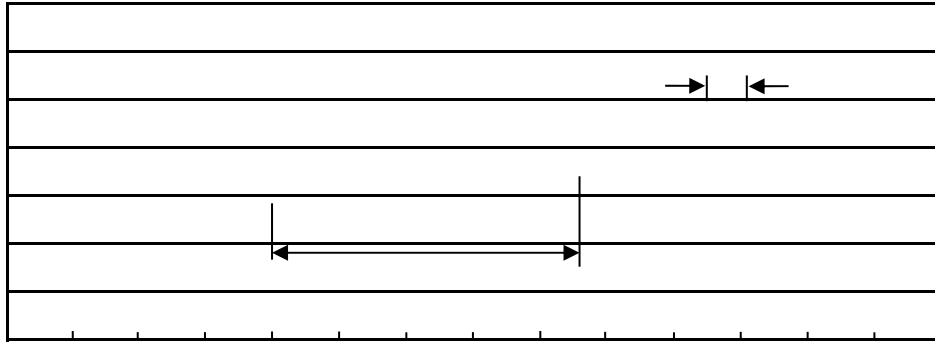


035N06SH

Note

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|----------|---------------------------------------|
| BR | Company Code |
| 035N06SH | Product Type Code |
| ****: | Lot No. Code, code change with Lot No |

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



Note:

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|---|---------|-----------|---|
| 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)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
PDFN5x6	5,000	2	10,000	6	60,000	13"x12	360x360x50	380x335x366

/ Notices