BRCS012N03SZC

Rev.B Oct.-2025

DATA SHEET

/ Descriptions

PDFN5×6 N

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

/ Features

V_{DS}(V)=30 V I_D=212A

$R_{DS(ON)}$@10V≤1.3mΩ(Typ.1.2mΩ)

$R_{DS(ON)}$@4.5V≤2.5mΩ(Typ.1.8mΩ)

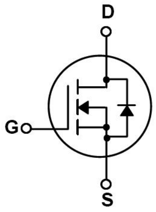
HF Product.

/ Applications

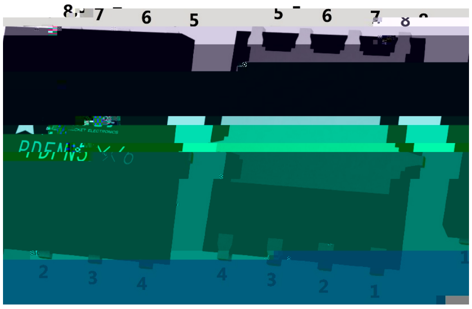
LED

This device is ideal for boost converters and synchronous rectifiers for consumer,telecom, industrial power supplies and LED backlighting.

/ Equivalent Circuit



/ Pinning



PIN1 2 3 S PIN4 G PIN5 6 7 8 D

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(T_c=25)

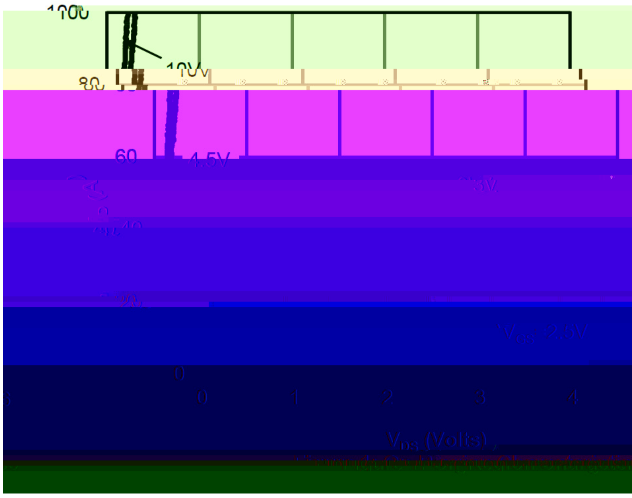
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Drain Current		I_D	212	A
Drain Current - Pulsed		I_{DM}	345	A
Gate-Source Voltage		V_{GS}	±20	V
Single Pulsed Avalanche Energy		E_{AS}	703	mJ
Avalanche Current		I_{AS}	37.5	A
Power Dissipation		P_D	100	W
Operating and Storage Temperature Range		T_J,T_{stg}	-55 to 150	
Junction-to-Ambient	$t \leq 10$	$R_{\theta JA}$	20	/W
Junction-to-Ambient	Steady-State		60	
Junction-to-Case	Steady-State	$R_{\theta JC}$	1.25	

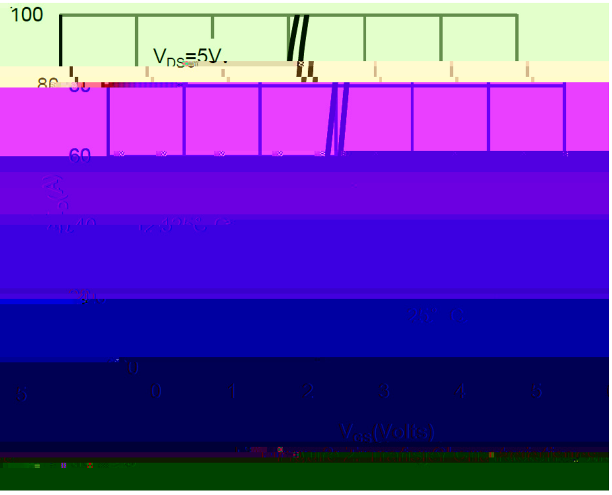
/ Electrical Characteristics(Tc=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V V_{GS}=0V			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	1.1		2.2	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS}=10V I_D=30A		1.2	1.3	mΩ
		V_{GS}=4.5V I_D=20A		1.8	2.5	mΩ
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=1A			1.2	V
Reverse Recovery Time	t_{rr}	V_{DS}=15V, I_D=20A dI_{SD}/dt = 100 A/μs		38.2		ns
Reverse Recovery Charge	Q_{rr}			37.7		nC
Input Capacitance	C_{iss}	V_{DS}=25V V_{GS}=0V f=1.0MHz		3040		pF
Output Capacitance	C_{oss}			1110		
Reverse Transfer Capacitance	C_{rss}			40		
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		3.3		Ω

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
otal Gate Charge	$Q_{g(10V)}$	V_{GS}=10V V_{DS}=15V I_D=20A		43.5		nC
otal Gate Charge	$Q_{g(4.5V)}$			19.4		
ate Source Charge	Q_{gs}			5.5		
ate Drain Charge	Q_{gd}			8.1		

/ Electrical Characteristic Curve





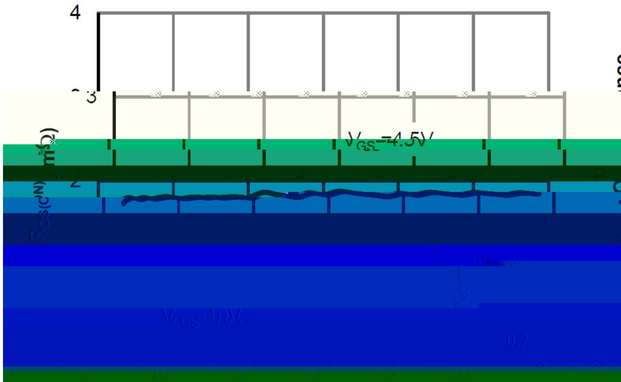
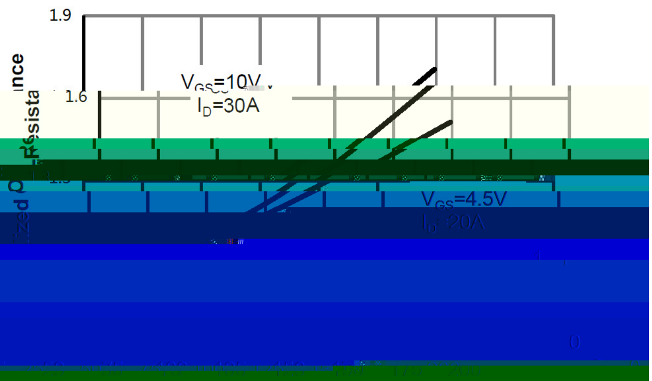
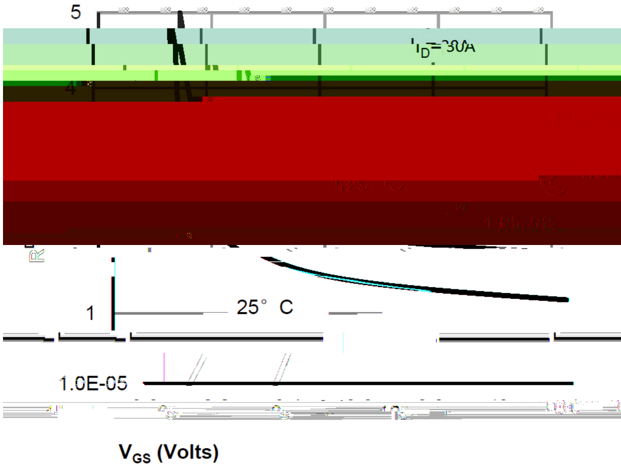
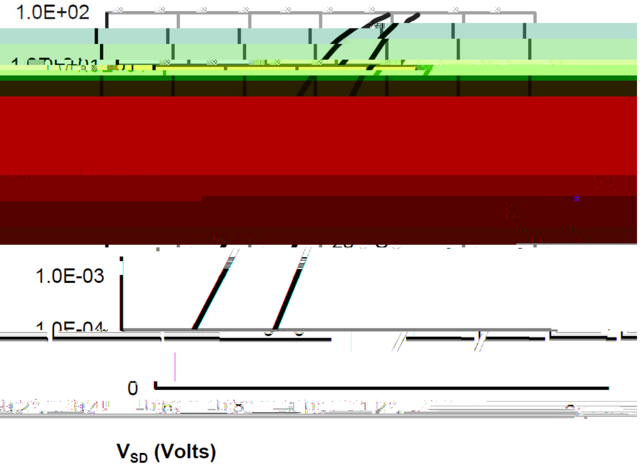


Figure 3: On Resist[illegible] Gate Voltage



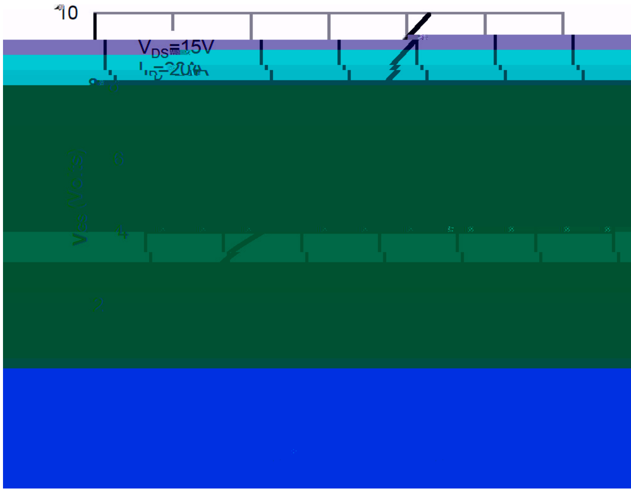


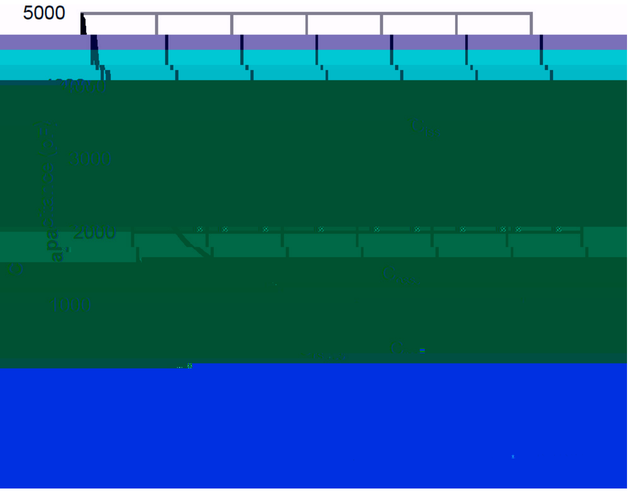


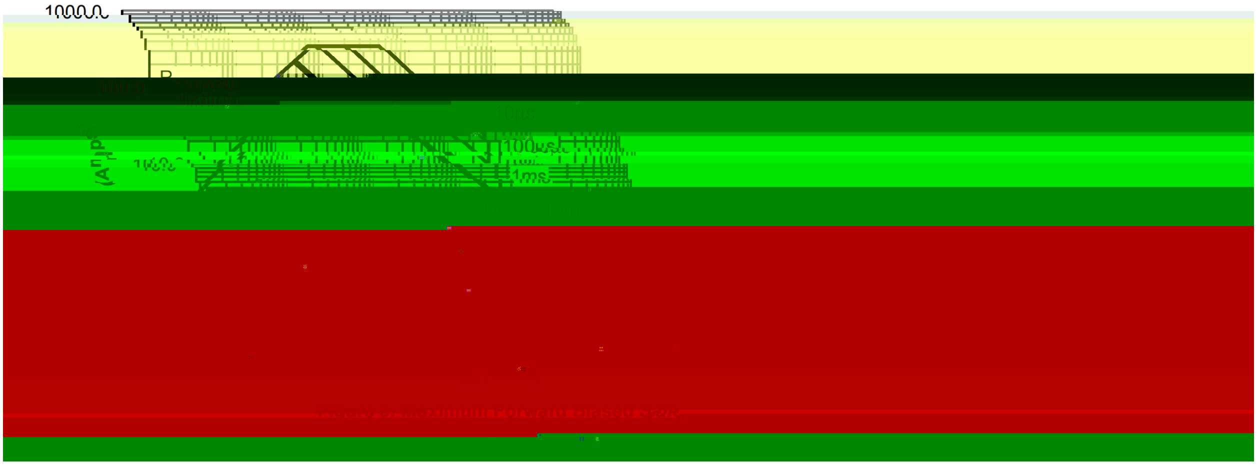
5: On-Resistance vs. Gate-Source Voltage

Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve







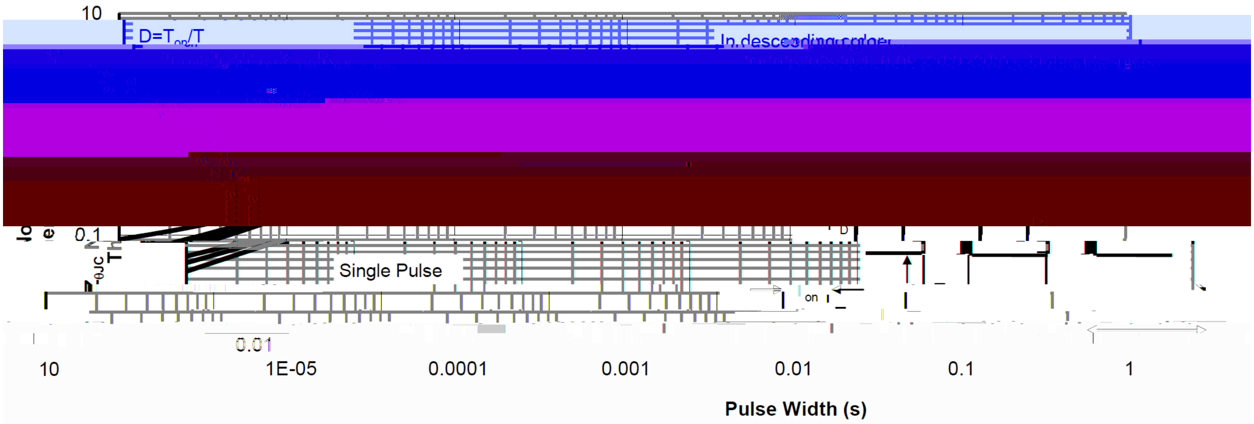
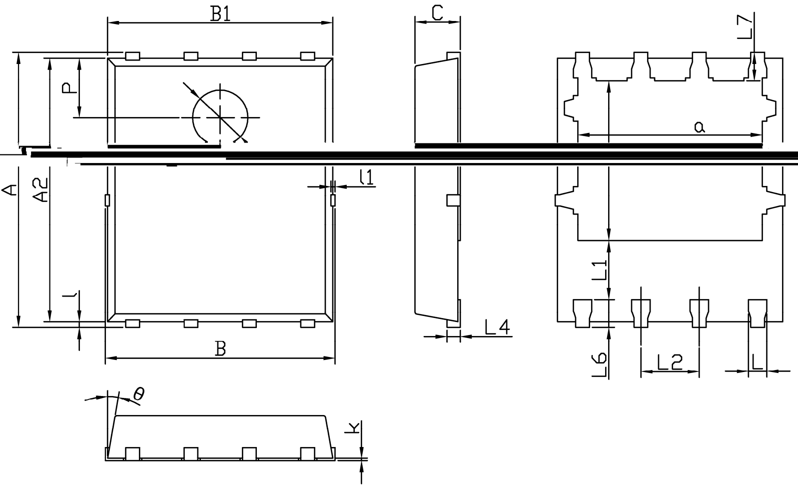


Figure 10: Normalized Maximum Transient Thermal Impedance

/ Package Dimensions

PDFN5×6 Unit:mm



Dimensions In Millimeters			
Symbol	MIN	TYP	MAX
A	5.90	6.00	6.10
a	3.91	4.01	4.11
A2	5.70	5.75	5.80
B	4.90	5.00	5.10
b	3.375	3.475	3.575
B1	4.80	4.90	5.00
C	0.90	0.95	1.00
L	0.30	0.40	0.50
l	0.06	0.13	0.20
L1	1.10	–	–
l1	–	–	0.10
L2	1.17	1.27	1.37
L4	0.21	0.26	0.34
L6	0.51	0.61	0.71
L7	0.51	0.61	0.71
P	1.15	1.30	1.45
k	0.00	–	0.05
θ	8°	10°	12°
Φ	1.10	1.20	1.30

Rev.02 202510

/ Marking Instructions

BR
012N03S
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Note

BR	Company Code
012N03S	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.

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