

BRCS070N03SC

Rev.A Apr.-2025

/ Descriptions

SOP-8 N MOS

N-Channel MOSFET in a SOP-8 Plastic Package.

/ Features

$V_{DS}(V)=30V$ $I_D=15.5A$

$R_{DS(ON)}@10V<7m$ (Typ. 6.3m)

$R_{DS(ON)}@4.5V<12m$ (Typ. 9.5m)

HF Product.

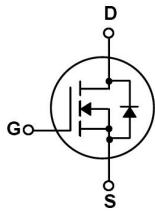
/ Applications

MB/NB/UMPC/VGA

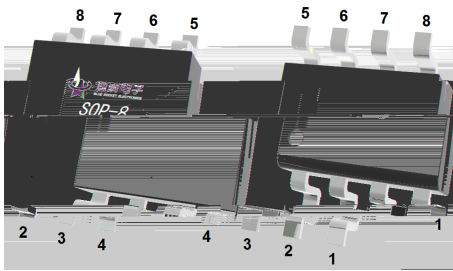
DC-DC

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

/ Equivalent Circuit



/ Pinning



PIN1 S PIN 2 S PIN 3 S PIN 4 G

PIN 5 D PIN 6 D PIN 7 D PIN 8 D

/ Marking

See Marking Instructions.

Symbol	Rating	Unit
V_{DSS}	30	V
V_{GS}	± 20	V
I_D	15.5	A
I_{DM}	55	A
P_D	2.8	W
T_J, T_{STG}	-55 to +150	
$R_{JA}(t \text{ 10s})$	44.6	/W
$R_{JA}(\text{Steady-State})$	75	

Symbol	Test Conditions	Min	Typ	Max	Unit
BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	30	35		V
I_{DSS}	$V_{DS}=30V$ $V_{GS}=0V$			1	μA
I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.7	2.5	V
$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		6.3	7	m
	$V_{GS}=4.5V$ $I_D=10A$		9.5	12	m
V_{SD}	$V_{GS}=0V$ $I_S=1.0A$			1.2	V
C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		1170		pF
C_{oss}			110		pF
C_{rss}			100		pF
R_g	$V_{DS}=0V$ $V_{GS}=0V$ $f=1.0MHz$		3.7		
$Q_{g(10V)}$			40		nC
$Q_{g(4.5V)}$	$V_{GS}=10V$ $V_{DS}=15V$ $I_D=20A$		22		nC

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=15\text{ V}$ $V_{GS}=10\text{V}$ $R_L=0.75$ $R_{GEN}=3$		11		ns
Turn-On Rise Time	t_r			14		ns
Turn-Off Delay Time	$t_{d(off)}$			38		ns
Turn-Off Fall Time	t_f			10		ns

/ Electrical Characteristic Curve

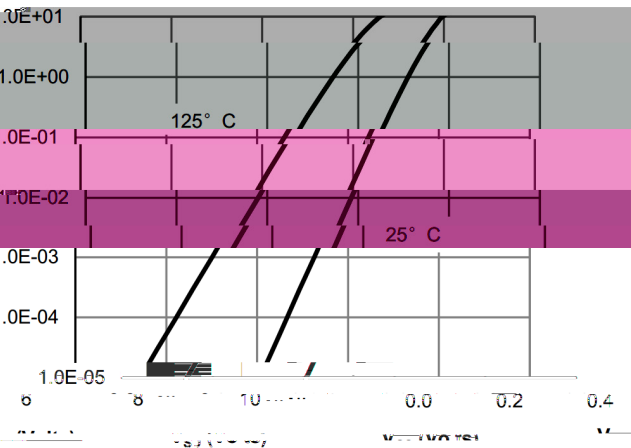
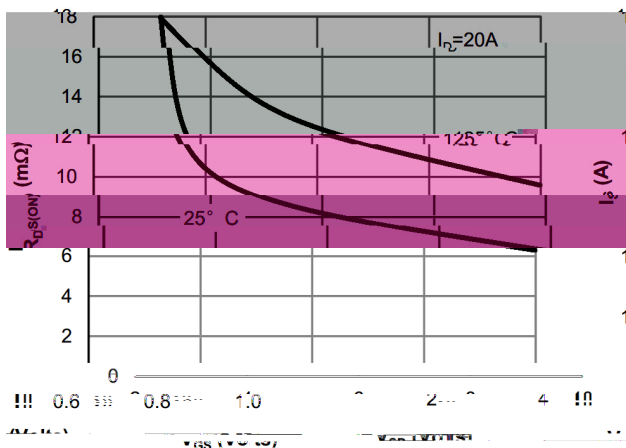
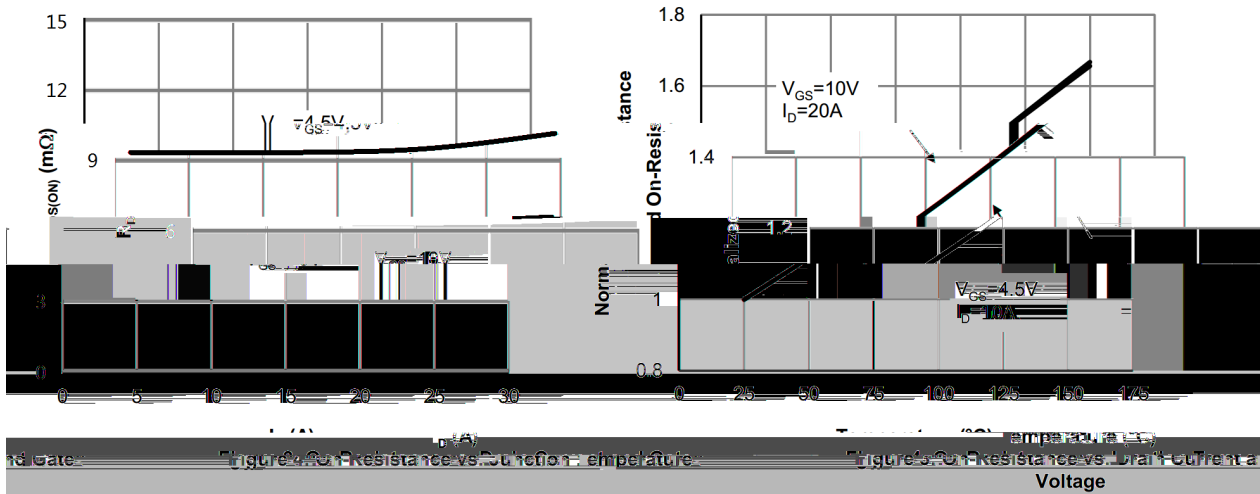
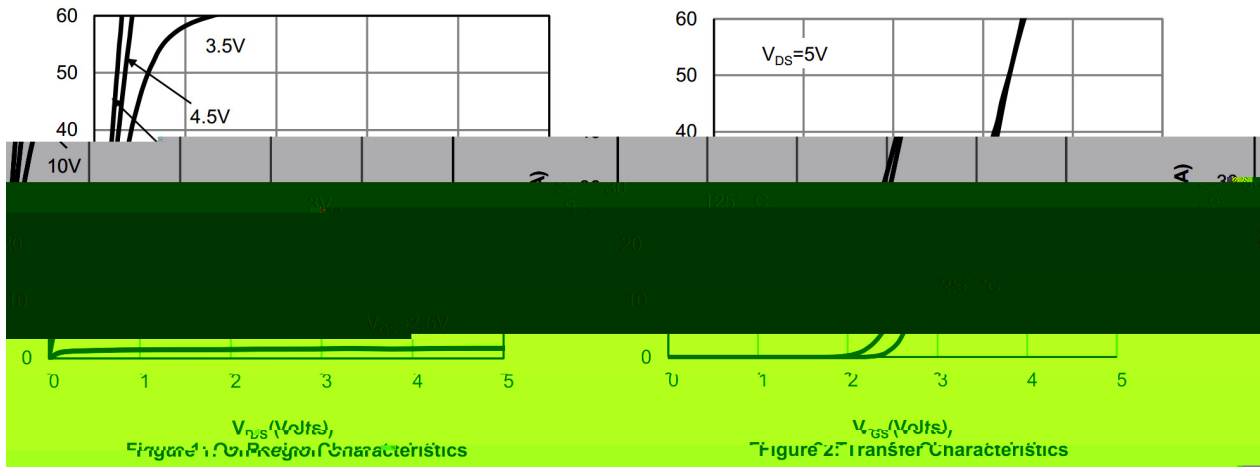
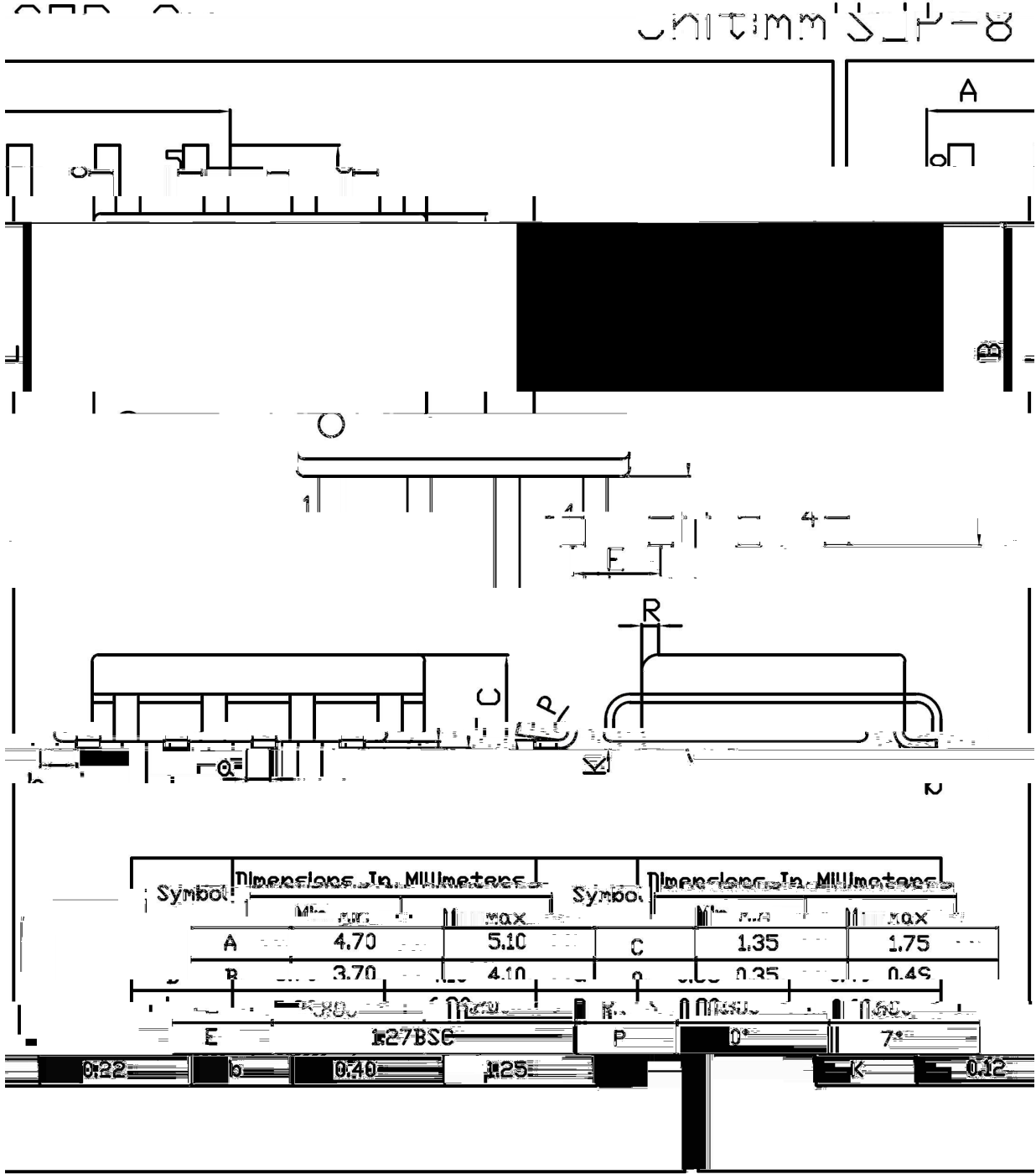
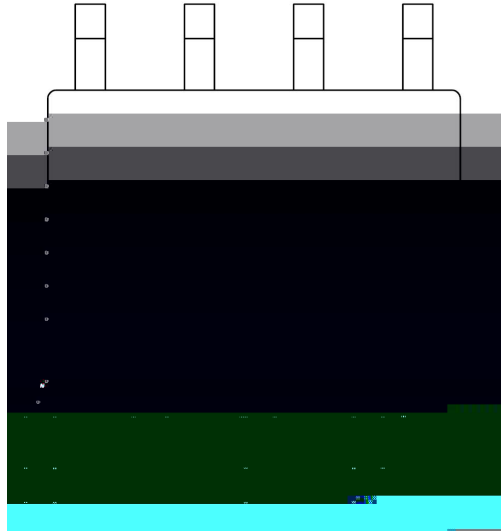


Figure 5: On-Resistance vs. Gate-Source Voltage

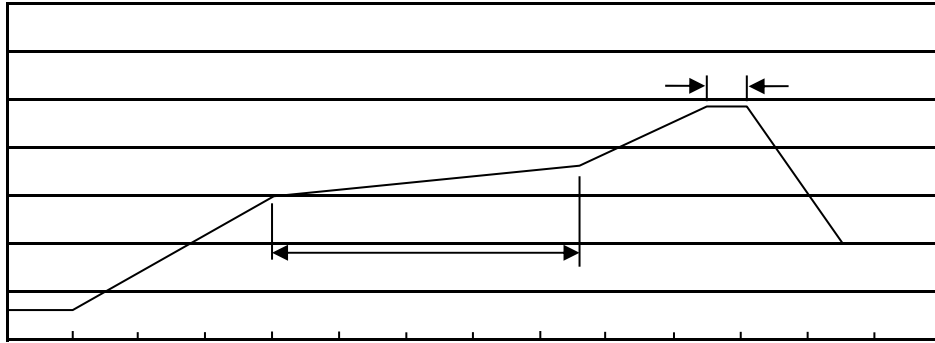
Figure 6: Body-Diode Characteristics

/ Package Dimensions





() / 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.

/ 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
SOP/ESOP-8	4,000	2	8,000	6	48,000	13 ×12	360×360×50	380×335×366

/ Notices