

BRCS070N03SC

Rev.A Apr.-2025

/ Descriptions

SOP-8 N MOS

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

/ Features

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

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

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

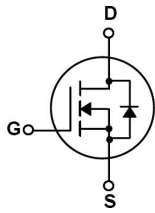
HF Product.

/ Applications

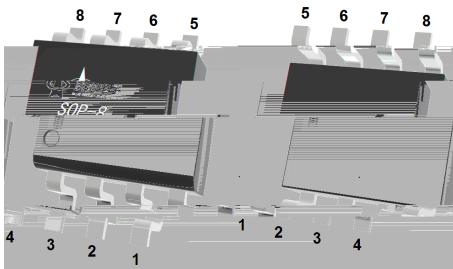
MB/NB/UMPC/VGA , DC-DC ,

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.

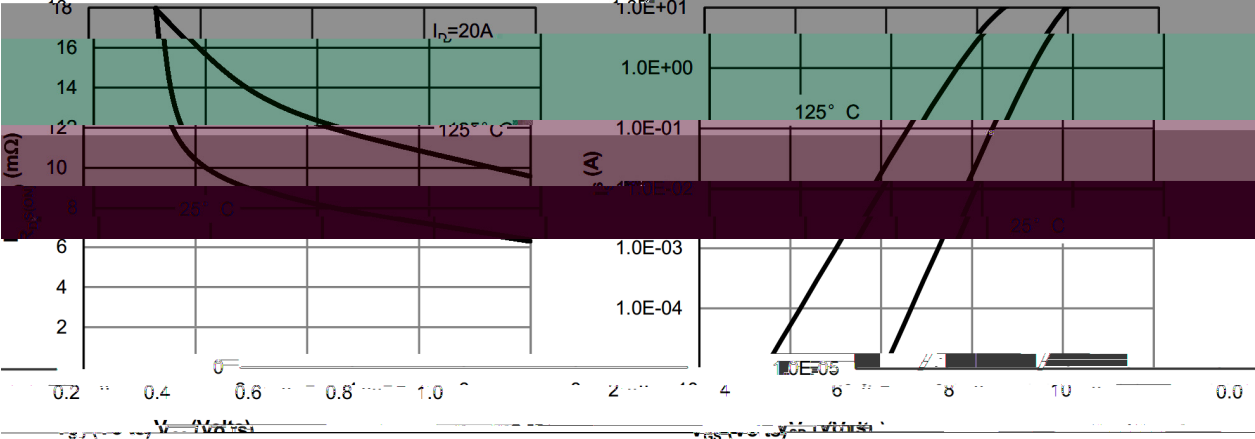
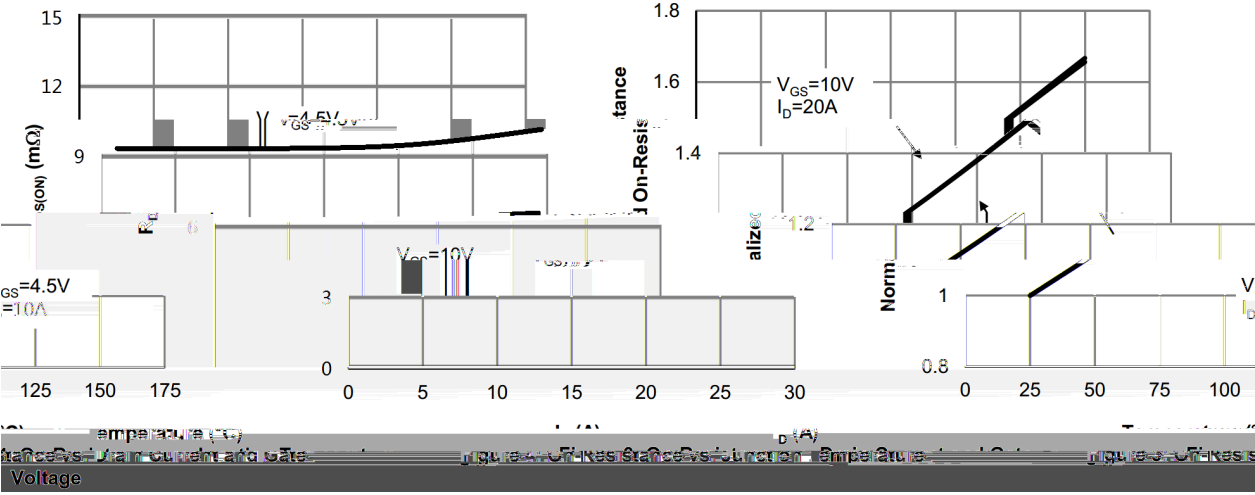
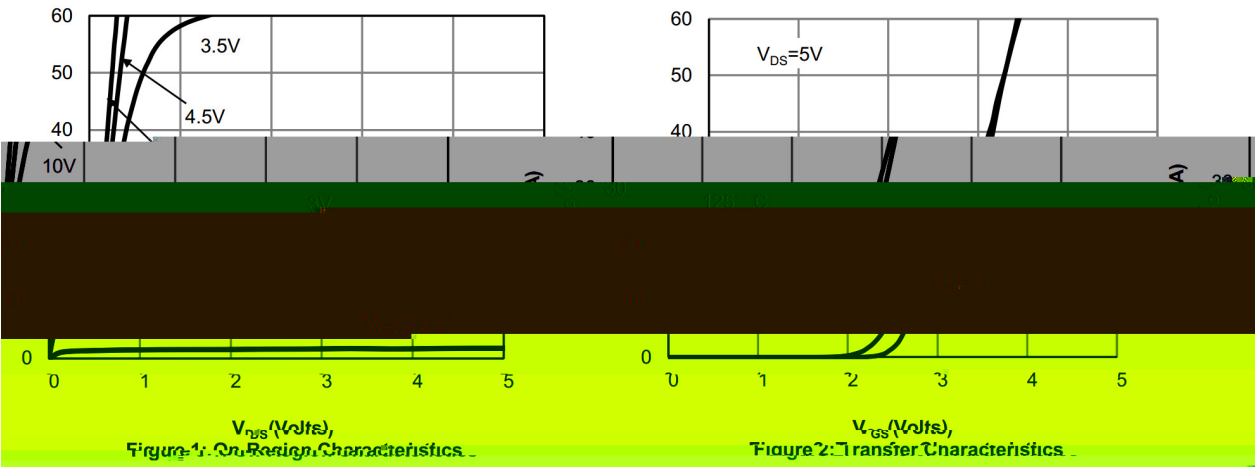
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	15.5	A
Pulsed Drain Current	I_{DM}	55	A
Power Dissipation	P_D	2.8	W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	
Maximum Junction-to-Ambient	$R_{\theta JA}(t \leq 10s)$	44.6	/W
	$R_{\theta JA}(\text{Steady-State})$	75	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	30	35		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V$ $V_{GS}=0V$			1	μA
Gate-Body leakage current	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.0	1.7	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		6.3	7	m Ω
		$V_{GS}=4.5V$ $I_D=10A$		9.5	12	m Ω
Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1.0A$			1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		1170		pF
Output Capacitance	C_{oss}			110		pF
Reverse Transfer Capacitance	C_{rss}			100		pF
Gate resistance	R_g	$V_{DS}=0V$ $V_{GS}=0V$ $f=1.0MHz$		3.7		Ω
Total Gate Charge	$Q_{g(10V)}$			40		nC
Total Gate Charge	$Q_{g(4.5V)}$	$V_{GS}=10V$ $V_{DS}=15V$ $I_D=20A$		22		nC

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{DS}=15\text{ V}$ $V_{GS}=10\text{ V}$ $R_L=0.75\Omega$ $R_{GEN}=3\Omega$		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

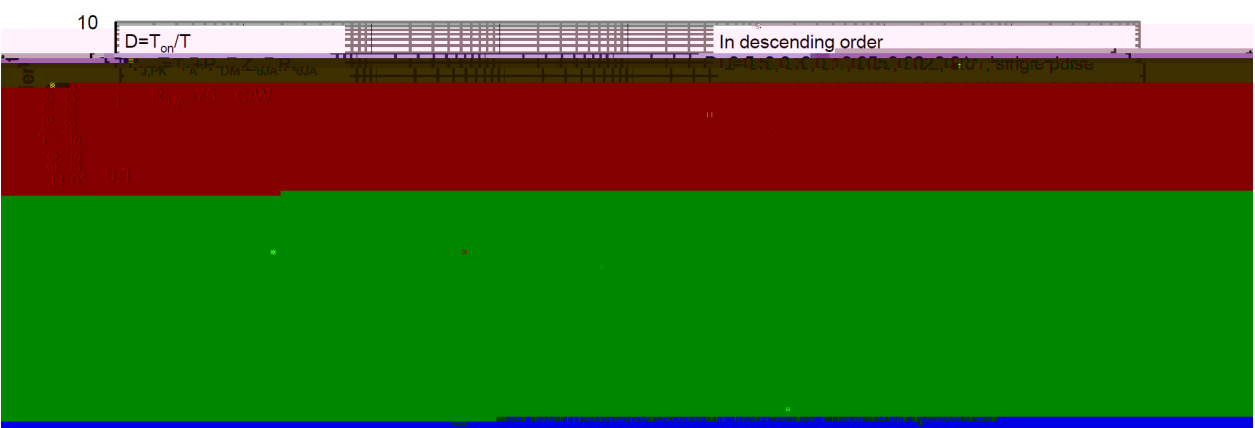
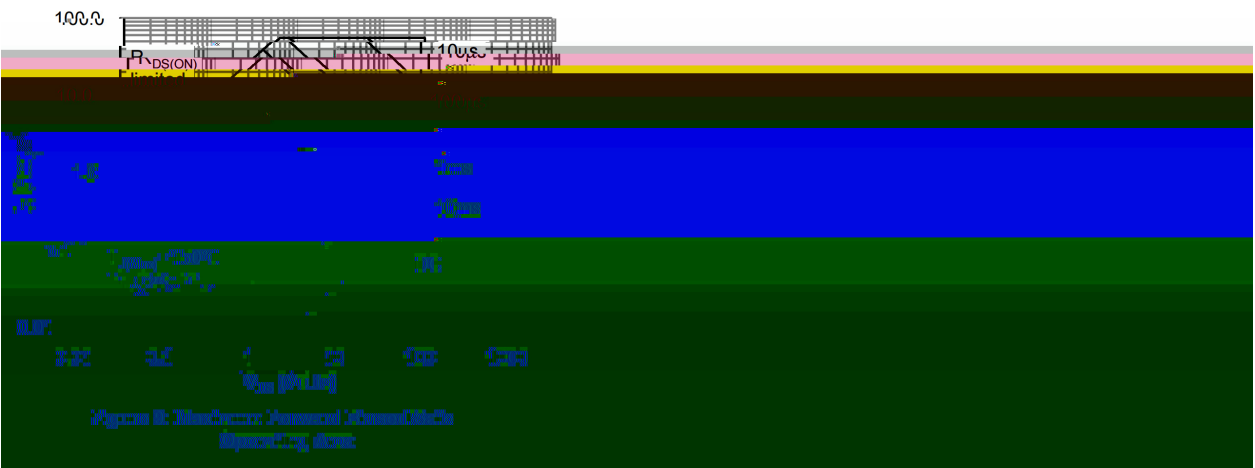
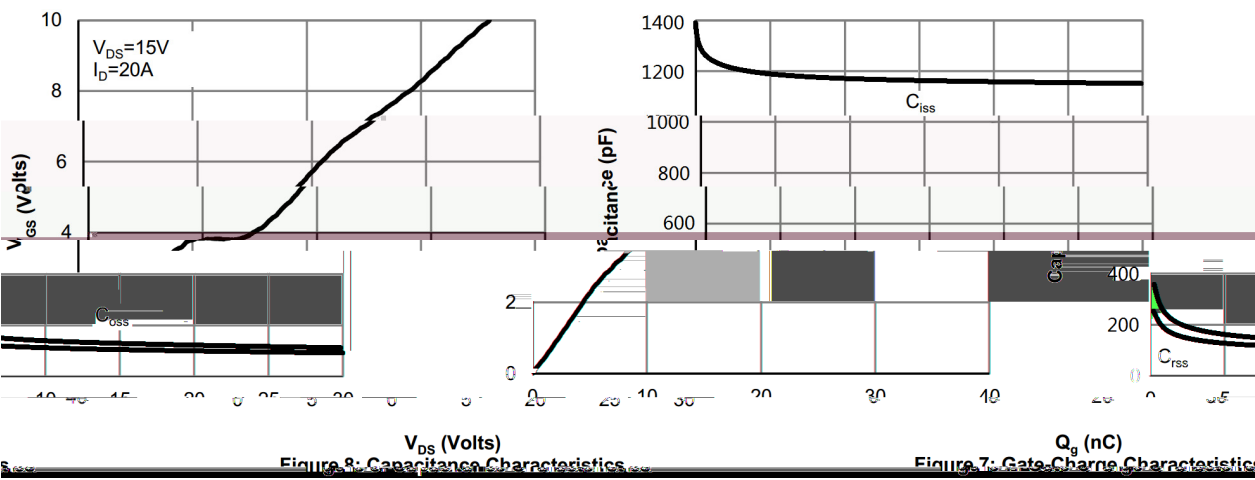


3: Body-Diode Characteristics

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

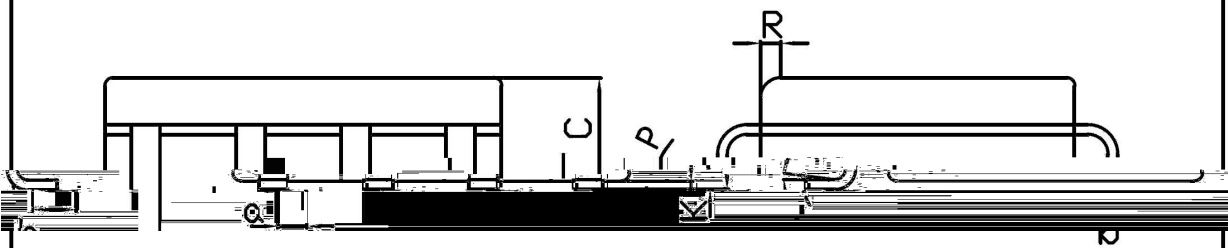
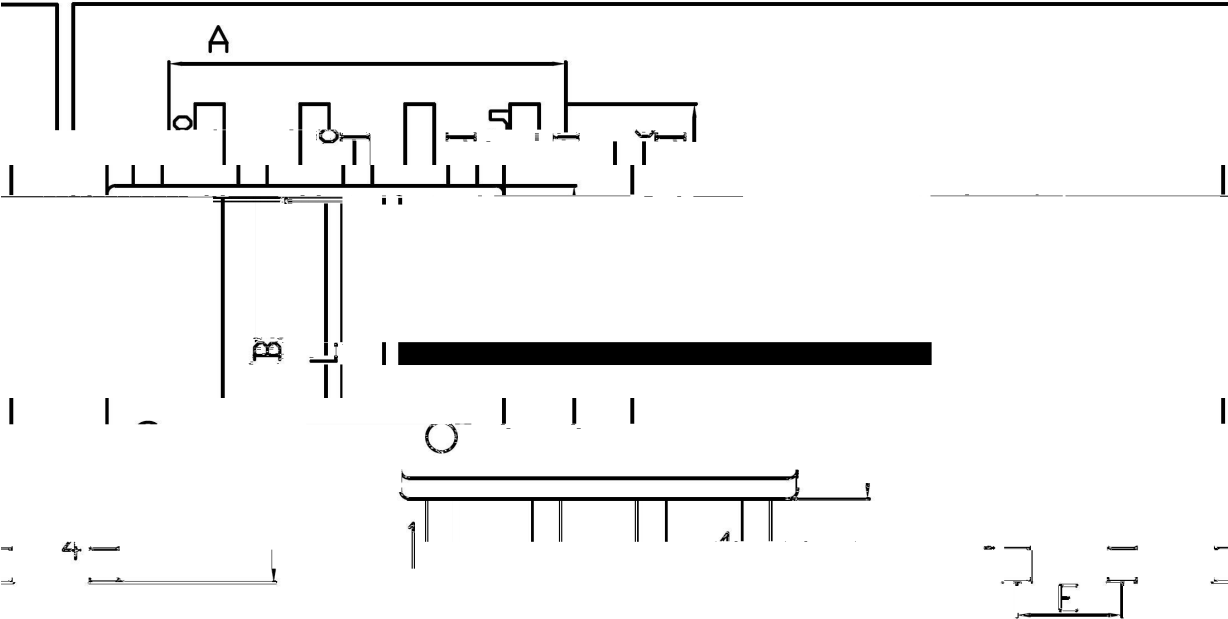
Figure 6

/ Electrical Characteristic Curve

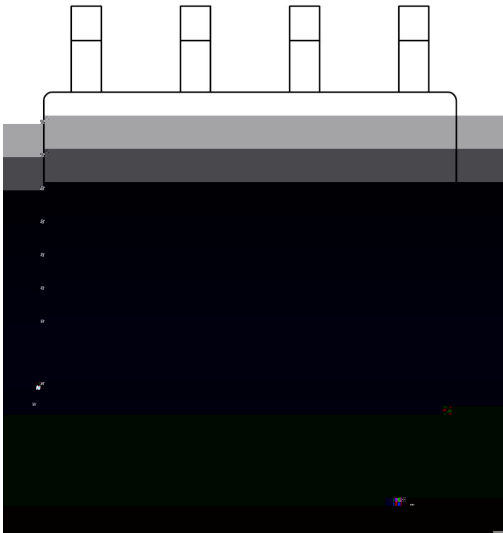


/ Package Dimensions

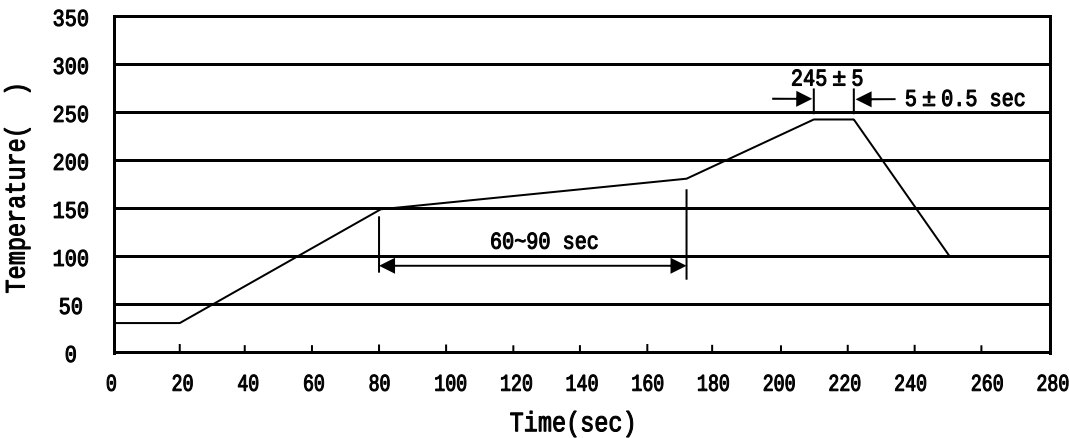
Unit: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.70	5.10	C	1.35	1.75
B	3.70	4.10	D	0.35	0.45
E	1.27	BSC	P	0°	7°
F	0.12	0.22	G	0.40	0.25



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



Note:

- 1

150 180

60 90sec;

1.Preheating:150~180 °C , Time:60~90sec.
- 2

245±5

5±0.5sec;

2.Peak Temp.:245±5 °C , Duration:5±0.5sec.
- 3

2 10 /sec.

3. Cooling Speed: 2~10 °C/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)		
SOP/ESOP-8	4,000	2	8,000	6	48,000	13 ×12	360×360×50	380×335×366

/ Notices