

BRCS011N10SHCC

Rev.A Jul.-2025

/ Descriptions

TO-263-7L N

N-CHANNEL MOSFET in a TO-263-7L Plastic Package.

/ Features

$V_{DS}=100V$ $I_D=300A$

$R_{DS(on)}@10V \leq 1.3m\Omega$ (Type. $1.1m\Omega$)

$R_{DS(on)}@6V \leq 1.9m\Omega$ (Type. $1.5m\Omega$)

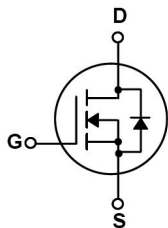
HF Product.

/ Applications

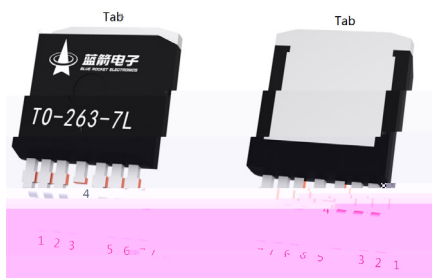
BMS

BMS, High power inverter system, Drones, Light electric vehicles.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 3 5 6 7 S PIN 4 Tab D

/ Marking

See Marking Instructions.



Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	100	V
Drain Current DC ***		I _D (T _C =25 °C)	300	A
		I _D (T _C =100 °C)	150	A
Pulsed Drain Current ^{*, **, ***}		I _{DM}	1200	A
Gate-Source Voltage		V _{GS}	±20	V
Continuous-Source Current		I _S (T _C =25 °C)	300	A
Single Pulsed Avalanche Energy L=1.0mH*		E _{AS}	1250	mJ
Total Power Dissipation		P _D (T _C =25 °C)	500	W
Junction and Storage Temperature Range		T _J , T _{STG}	-55 to 175	
Thermal Resistance-Junction to Ambient*	Steady-State	R _{θJA}	30	/W
Thermal Resistance-Junction to Case*	Steady-State	R _{θJC}	0.3	

Notes:

* Surface Mounted on 1 in² pad area, $t \leq 10$ sec** Pulse width $\leq 300 \mu\text{s}$, duty cycle $\leq 2\%$

*** Limited by bonding wire

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=80V$ $V_{GS}=0V$			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2		4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=50A$		1.1	1.3	m Ω
		$V_{GS}=6V$ $I_D=25A$		1.5	1.9	
Forward On Voltage	V_{SD}	$V_{GS}=0V$ $I_S=50A$			1.3	V
Reverse Recovery Time	t_{rr}	$I_{DS} = 50 A, V_{GS} = 0 V$ $dI_{SD}/dt = 100 A/\mu s$		137		nS
Reverse Recovery Charge	Q_{rr}			347		nC

Input Capacitance

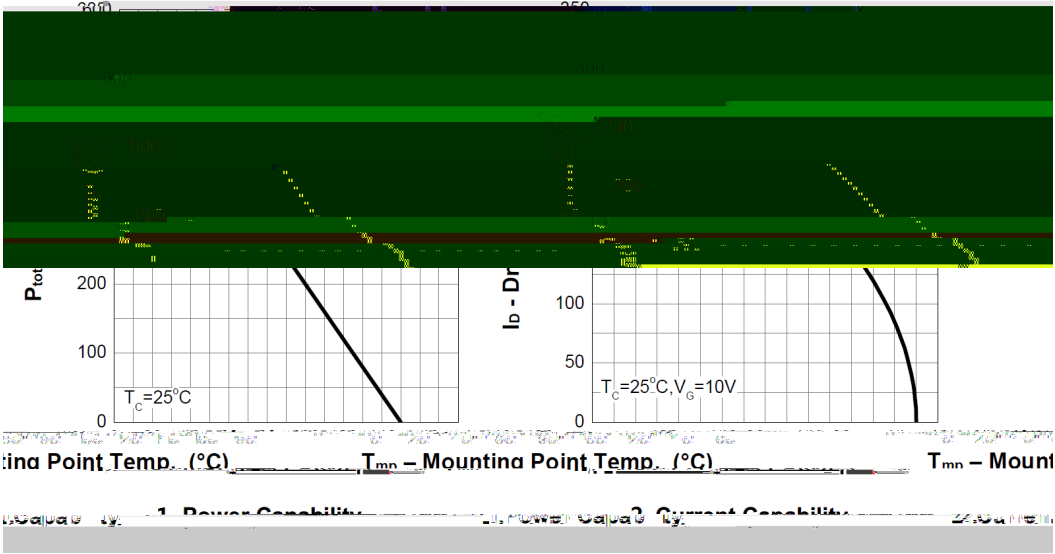
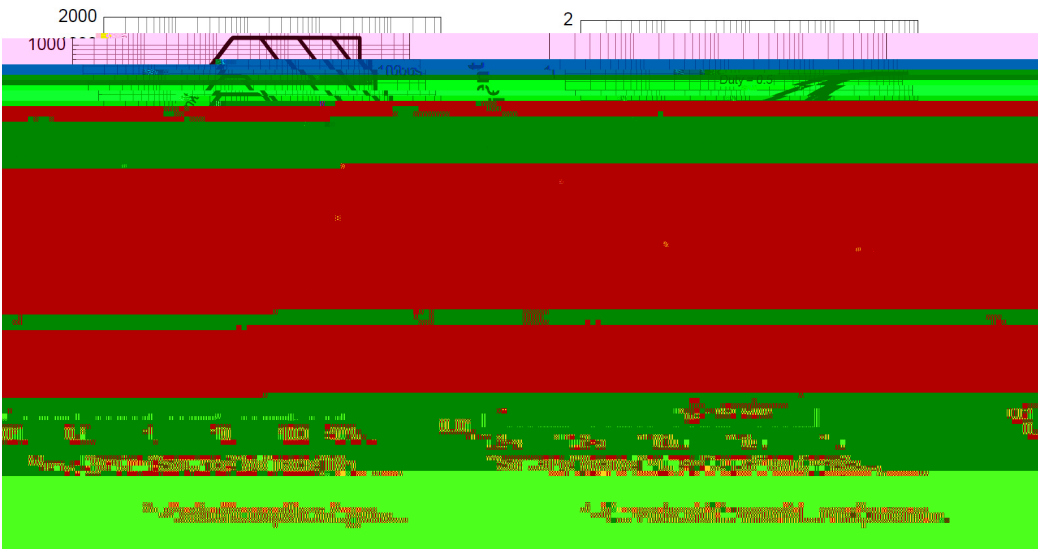
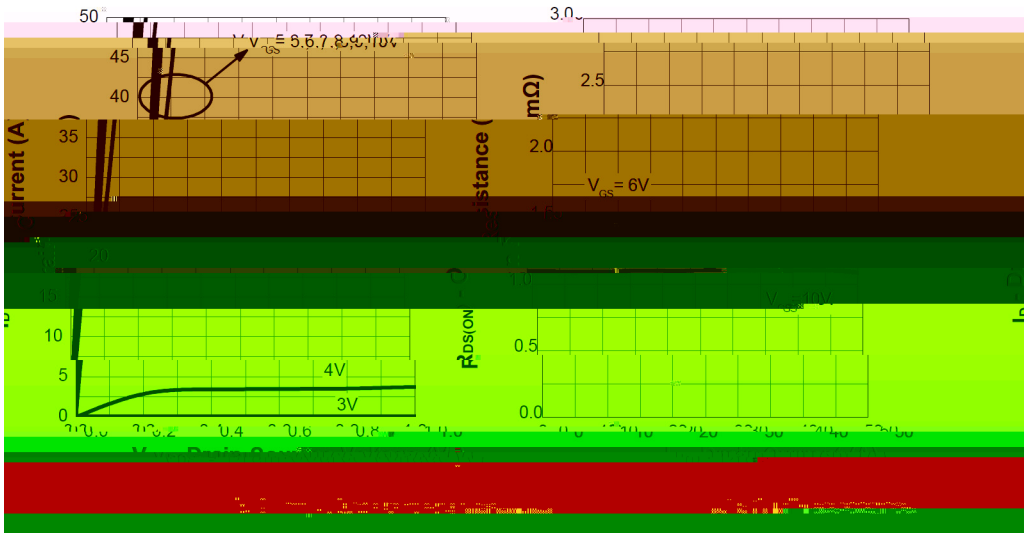
 C_{iss} $V_{DS}=50V$ $V_{GS}=0V$ $f=1\text{MHz}$

pF

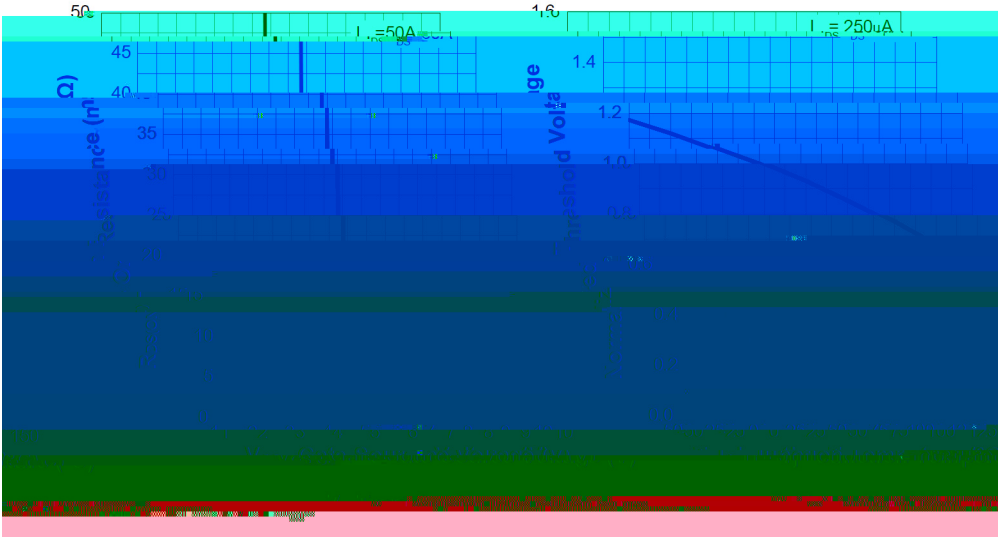
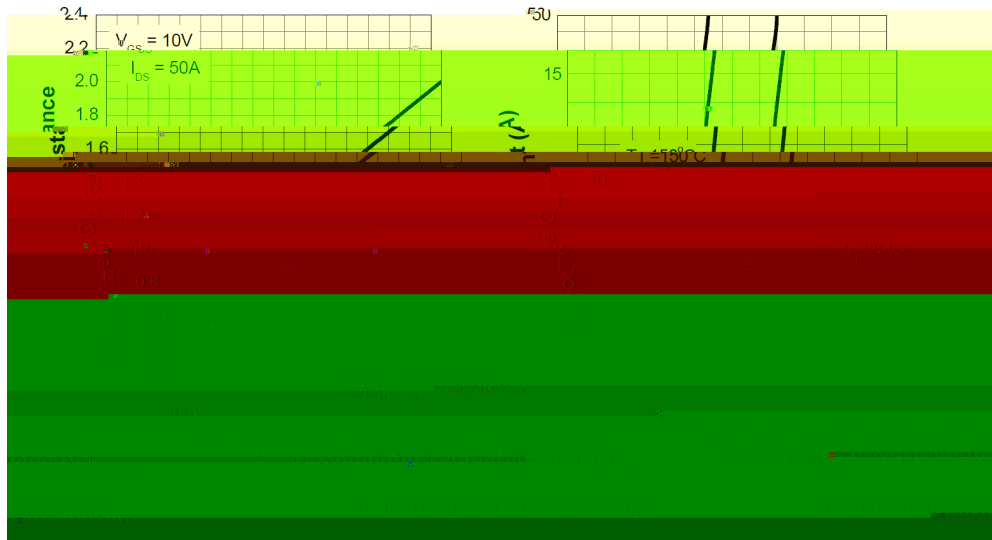
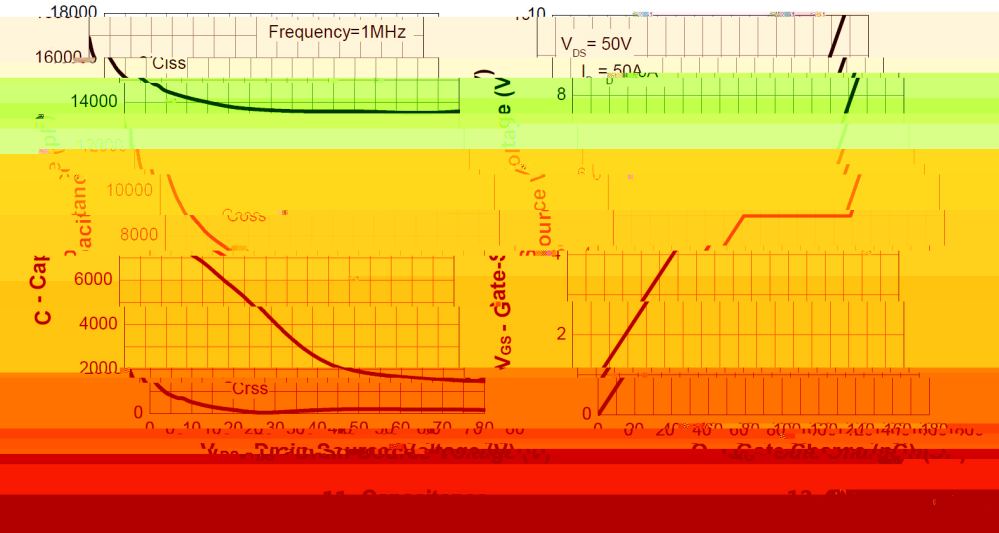
Reverse Transfer Capacitance

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_g(10V)$	$V_{GS}=10V$ $V_{DS}=50V$ $I_D=50A$		244		nC
Gate Source Charge	Q_{gs}			46		
Gate Drain Charge	Q_{gd}			67		
Turn-On Delay Time	$t_{d(on)}$			29		
$T_uR_sT_u$		$V_{GS}=10V$ $V_{DS}=50V$ $R_L=2.5\Omega$ $R_G=4.5\Omega$ $I_{DS}=50A$				nS

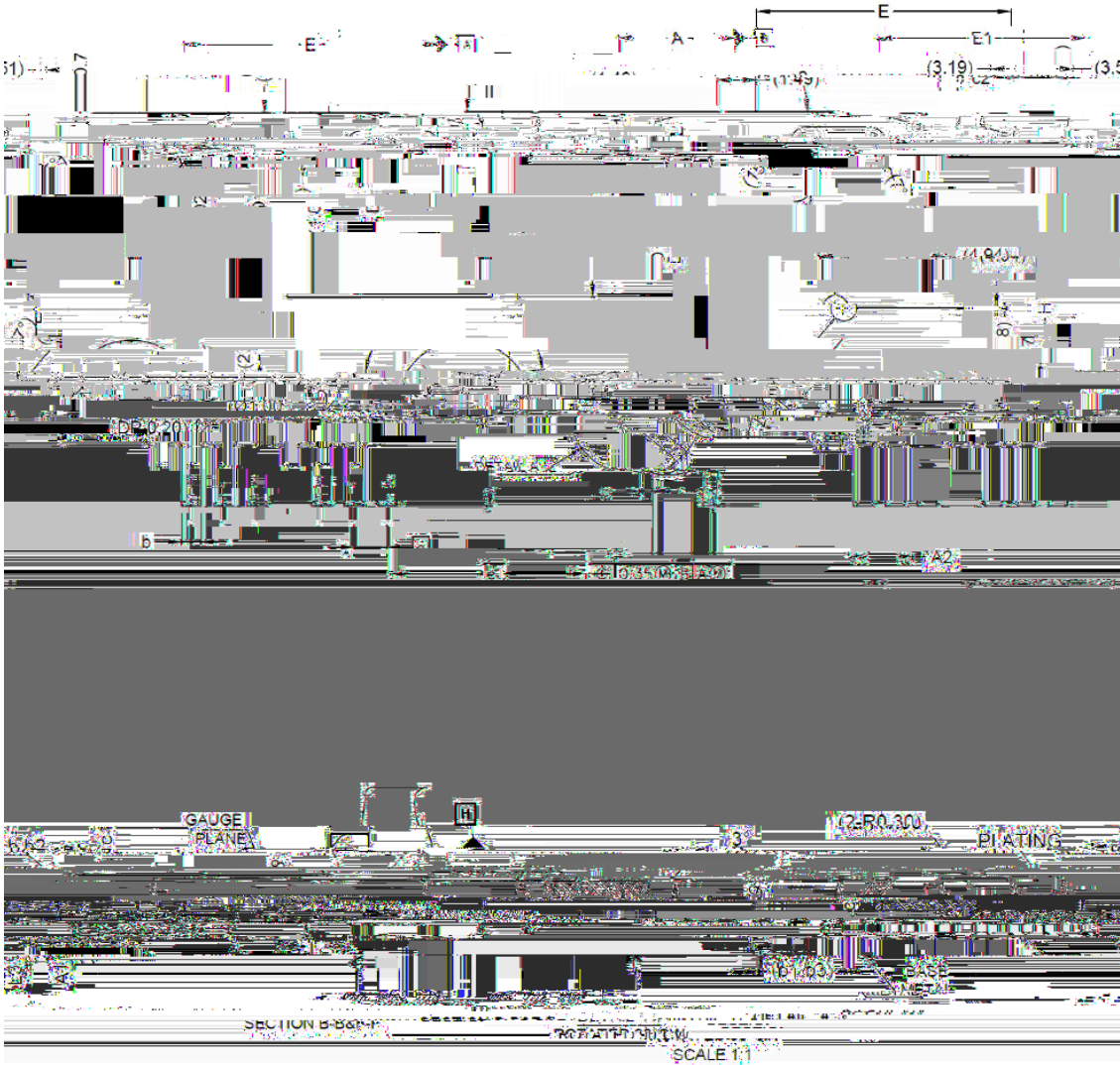
/ Electrical Characteristic Curve



/ Electrical Characteristic Curve



/ Package Dimensions



Symbol			Dimensions In Millimeters			Symbol			Dimensions In Millimeters		
D1			6.86			A			4.30		
E			10.00			A1			0.25		
7.70			8.30			A2			2.60		
0.85			1.27 BSC			b			0.65		
0.80			7.62 BSC			b1			0.65		
1.00			1.78			b2			0.80		
0.60			L2			1.78			c		
0.55			L3			0.25BSD			c1		
1.40			H			15.88			c2		
9.40									D		

() / 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

605±5