Bruckewell Technology Corp., Ltd.

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30V N-Channel Logic Level Enhancement Mode MOSFET **Product Specification**

MSB55N03N3

●FEATURES:

- VDS=30V

RDS(ON)=55mΩ@VGS=10V, ID=3.5A

RDS(ON)=85mΩ@VGS=4.5V, ID=2A

- Lower gate charge

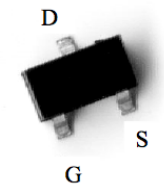
- Pb-free lead plating and Halogen-free package

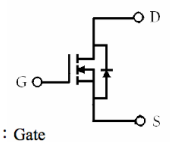
BV_{DSS} : 30V

$R_{DS(ON)}$: 55mΩ(typ.)

I_D : 3.5A

SOT-23





G : Gate
S : Source
D : Drain

Absolute Maximum Ratings (Tc=25°C, unless otherwise noted)

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_A=25°C	I_D	3.5	A
	T_A=70°C		2.4	
Pulsed Drain Current		I_{DM}	14 (Note 1 & 2)	A
Power Dissipation	T_A=25°C	P_D	1.5 (Note 3)	W
	T_A=70°C		1 (Note 3)	
Thermal Resistance, Junction to Ambient		Rth, j-a	100 (Note 3)	°C/W
Operating Junction and Storage Temperature		Tj, Tstg	-55 ~ +175	°C

Note : 1. Pulse width limited by maximum junction temperature

2. Duty cycle ≤ 1%

3. Surface mounted on 1 in² copper pad of FR4 board; 270°C/W when mounted on min. copper pad

Electrical Characteristics (T_A=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV_{DSS}	30	-	-	V	V_{GS}=0, I_D=250μA
$V_{GS(th)}$	1	1.5	3	V	V_{DS}=V_{GS}, I_D=250μA
I_{GSS}	-	-	±100	nA	V_{GS}=±20V, V_{DS}=0
I_{DSS}	-	-	1	μA	V_{DS}=24V, V_{GS}=0
	-	-	10	μA	V_{DS}=20V, V_{GS}=0, Tj=125°C
I_{DON} [1]	3.5	-	-	A	V_{DS}=5V, V_{GS}=10V
*$R_{DS(ON)}$ [1]	-	45	55	mΩ	I_D=3.5A, V_{GS}=10V
	-	65	85		I_D=2A, V_{GS}=4.5V
*G_{FS} [1]	-	5	-	S	V_{DS}=5V, I_D=3.5A
Dynamic					
Ciss	-	319	-	pF	V_{DS}=10V, V_{GS}=0, f=1MHz
Coss	-	66	-		
Crss	-	53	-		
*$t_{d(ON)}$ [1] [2]	-	8	-	ns	V_{DS}=10V, I_D=1A,V_{GS}=10V, R_G=6Ω
*t_r [1] [2]	-	2.5	-		
*$t_{d(OFF)}$ [1] [2]	-	20	-		
*t_f [1] [2]	-	5	-		
*Qg [1] [2]	-	6	-	nC	V_{DS}=10V, I_D=3.5A, V_{GS}=4.5V
*Qgs [1] [2]	-	0.8	-		
*Qgd [1] [2]	-	1.8	-		
Source-Drain Diode					
Is	-	-	2	A	
I_{SM} [3]	-	-	8		
V_{SD} [1]	-	-	1.2	V	I_F=Is, V_{GS}=0V

[1] Pulse test : Pulse width≤300μs, Duty cycle≤2%

[2] Independent of operating temperature

[3] Pulse width limited by maximum junction temperature

Typical Characteristics