

Product Specification

Dual N-Channel Logic Level Enhancement Mode Power MOSFET

MSB22A04Q8

•Description

The MSB22A04Q8 provides the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost effectiveness. The SOP-8 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

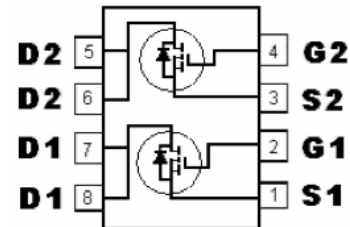
•FEATURES:

- $R_{DS(ON)}=22m\Omega @ V_{GS}=10V, I_D=8A$
- Simple drive requirement
- Low on-resistance
- Fast switching speed
- Dual N-ch MOSFET package
- Pb-free lead plating and Halogen-free package

BVDSS : 40V

RDS(ON) : 22mΩ

ID : 8A



G : Gate
S : Source
D : Drain

SOP-8

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Drain-Source Voltage	V_{DS}	40	V	
Gate-Source Voltage	V_{GS}	±20		
Continuous Drain Current @ $T_C=25^\circ C$	I_D	8	A	
Continuous Drain Current @ $T_C=100^\circ C$		7		
Pulsed Drain Current		32 *1		
Total Power Dissipation	P_D	$T_A=25^\circ C$	2.4	W
		$T_A=100^\circ C$	1.3	
Operating Junction and Storage Temperature Range	T_j, T_{stg}	-55~+175	°C	

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-case, max	$R_{th,j-c}$	25	°C/W
Thermal Resistance, Junction-to-ambient, max	$R_{th,j-a}$	62.5 *2	°C/W

Note : 1. Pulse width limited by maximum junction temperature

2. Surface mounted on 1 in² copper pad of FR-4 board, 125°C/W when mounted on minimum copper pad

Characteristics (Tc=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	40	-	-	V	V _{GS} =0V, I _D =250μA
V _{GS(th)}	1	1.7	3	V	V _{DS} = V _{GS} , I _D =250μA
I _{GSS}	-	-	±100	nA	V _{GS} =±20
I _{DSS}	-	-	1	μA	V _{DS} =32V, V _{GS} =0V
	-	-	25		V _{DS} =30V, V _{GS} =0V, T _j =125°C
I _{D(ON)} *1	8	-	-	A	V _{DS} =5V, V _{GS} =10V
R _{DS(ON)} *1	-	20	22	mΩ	V _{GS} =10V, I _D =8A
	-	30	37	mΩ	V _{GS} =4.5V, I _D =5A
G _{FS} *1	-	20	-	S	V _{DS} =5V, I _D =8A
Dynamic					
C _{iss}	-	1205	-	pF	V _{GS} =0V, V _{DS} =20V, f=1MHz
C _{oss}	-	80	-		
C _{rss}	-	57	-		
Q _g *1, 2	-	11	-	nC	V _{DS} =20V, V _{GS} =10V, I _D =7A
Q _{gs} *1, 2	-	1.8	-		
Q _{gd} *1, 2	-	4.1	-		

Characteristics (Tc=25°C, unless otherwise specified)

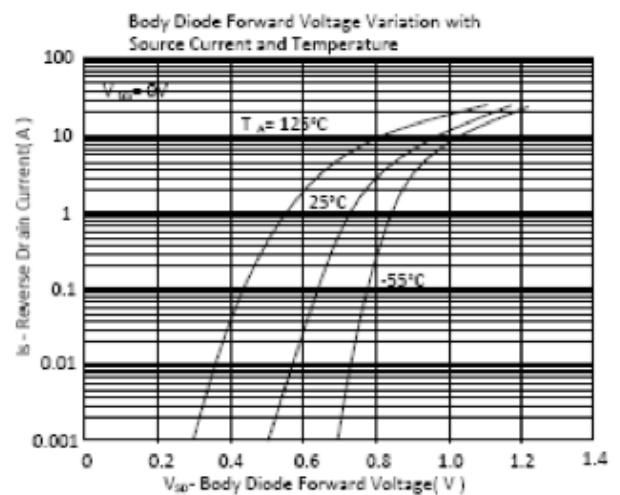
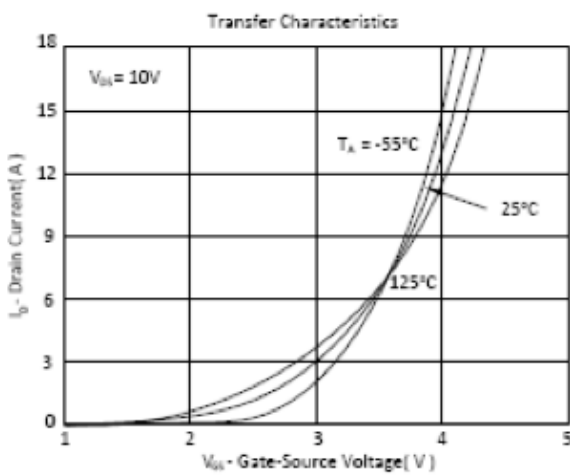
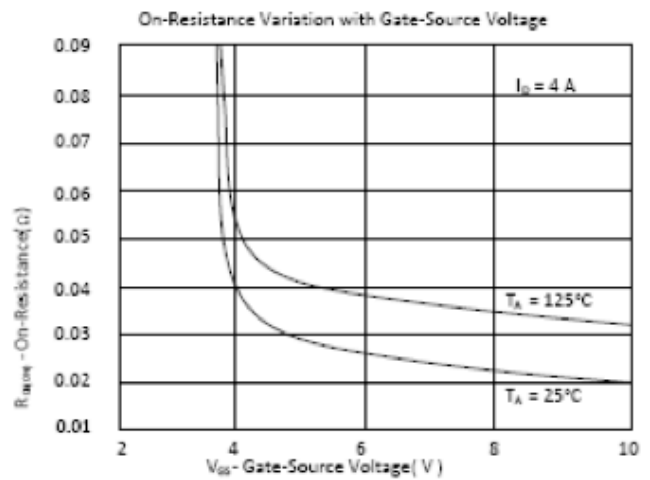
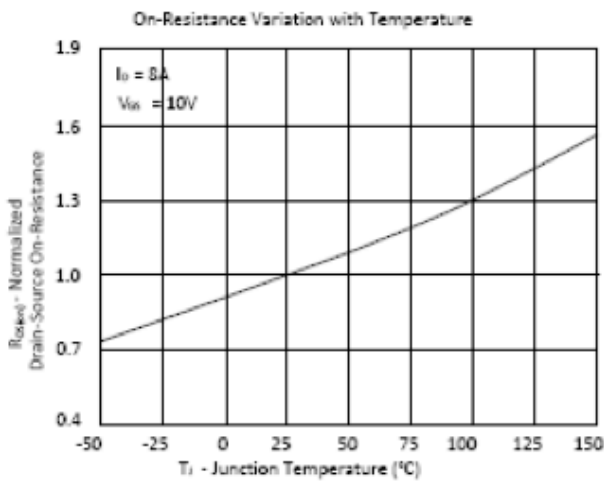
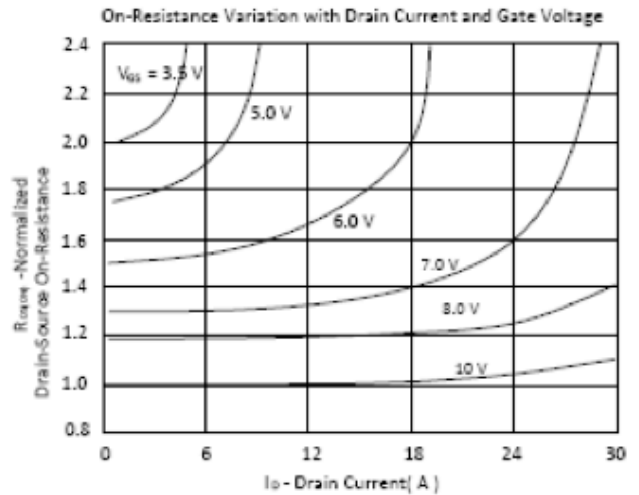
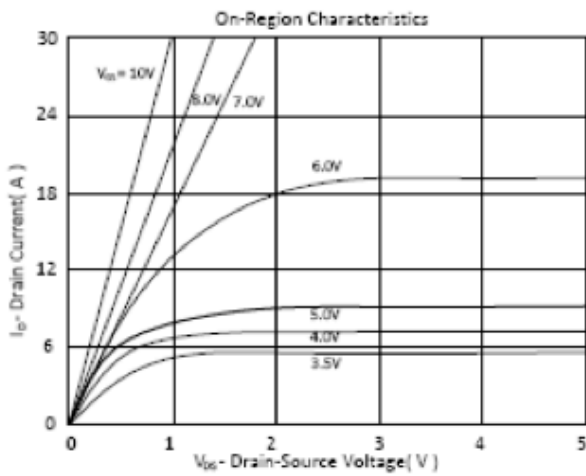
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
t _{d(ON)} *1, 2	-	3.5	-	ns	V _{DS} =20V, I _D =1A, V _{GS} =10V, R _{GS} =6Ω
t _r *1, 2	-	9.5	-		
t _{d(OFF)} *1, 2	-	15	-		
t _f *1, 2	-	6	-		
Source-Drain Diode					
I _S *1	-	-	8	A	
I _{SM} *3	-	-	24		
V _{SD} *1	-	-	1.3	V	I _F =I _S , V _{GS} =0V

Note : *1.Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%

*2.Independent of operating temperature

*3.Pulse width limited by maximum junction temperature.

Typical Characteristics



Brückewell Bruckewell Technology Corp., Ltd.

<http://www.bruckewell.com/semicon>

Typical Characteristics

