

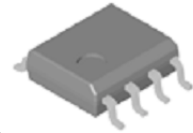
MS17N03Q8 N-Channel Logic Level Enhancement Mode MOSFET

MS17N03Q8 provides the designer with the best combination of fast switching, ruggedized device design, ultra low on-resistance and cost effectiveness.

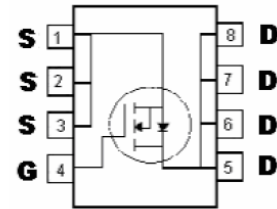
The SOP-8 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

Key Features:

- RDS(ON)=15mΩ(max.)@VGS=10V, ID=10A
- Simple drive requirement
- Low on-resistance
- Fast switching speed
- Pb-free & Halogen-free package



SO-8 Package



G : Gate
S : Source
D : Drain



RoHS
COMPLIANT
HALOGEN
FREE

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Drain-Source Voltage	V _{DS}	30	V	
Gate-Source Voltage	V _{GS}	±20		
Continuous Drain Current, T _c =25 °C	I _D	10	A	
Continuous Drain Current, T _c =100 °C	I _D	8		
Pulsed Drain Current (Note 1)	I _{DM}	40		
Avalanche Current	I _{AS}	12		
Avalanche Energy @ L=0.1mH, I _D =10A, R _G =25 Ω	E _{AS}	5	mJ	
Repetitive Avalanche Energy @ L=0.05mH (Note 2)	E _{AR}	2.5		
Power Dissipation	P _D	T _A =25°C (Note 3)	3	W
		T _A =100°C	1.5	
Operating Junction and Storage Temperature Range	T _j ; T _{stg}	-55~+175	°C	

100% UIS testing in condition of V_D=15V, L=0.1mH, V_G=10V, I_L=10A, Rated V_{DS}=30V N-CH

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}	50 *3	°C/W

Note : 1. Pulse width limited by maximum junction temperature

2. Duty cycle ≤ 1%

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

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

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BVDSS	30	-	-	V	V _{GS} =0, I _D =250μA
V _{GS(th)}	1	1.5	3	V	V _{DS} = V _{GS} , I _D =250μA
GFS *1	-	18	-	S	V _{DS} =5V, I _D =10A
I _{GSS}	-	-	±100	nA	V _{GS} =±20
I _{DSS}	-	-	1	μA	V _{DS} =24V, V _{GS} =0
	-	-	25		V _{DS} =20V, V _{GS} =0, T _j =125°C
I _{D(ON)} *1	10	-	-	A	V _{DS} =10V, V _{GS} =10V
*R _{DS(ON)} *1	-	13	15	mΩ	V _{GS} =10V, I _D =10A
	-	20	25		V _{GS} =4.5V, I _D =6A
Dynamic					
Q _g (V _{GS} =10V) *1, 2	-	11	-	nC	I _D =10A, V _{DS} =15V, V _{GS} =10V
Q _g (V _{GS} =4.5V) *1, 2	-	6	-		
Q _{gs} *1, 2	-	1.2	-		
Q _{gd} *1, 2	-	3.3	-		
td(ON) *1, 2	-	11	-	ns	V _{DS} =15V, I _D =1A, V _{GS} =10V, R _G =6Ω, R _D =15Ω
t _r *1, 2	-	16	-		
td(OFF) *1, 2	-	36	-		
t _f *1, 2	-	20	-		
C _{iss}	-	1115	-	pF	V _{GS} =0V, V _{DS} =15V, f=1MHz
C _{oss}	-	116	-		
C _{rss}	-	82	-		
R _g	-	2	-	Ω	V _{GS} =15mV, V _{DS} =0V, f=1MHz
Source-Drain Diode					
I _S *1	-	-	2.3	A	
I _{SM} *3	-	-	9.2		
V _{SD} *1	-	-	1.2	V	I _F = I _S , V _{GS} =0V
t _{rr}	-	50	-	ns	I _F = I _S , dI/dt=100A/μs
Q _{rr}	-	2	-	nC	

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

*2.Independent of operating temperature

*3.Pulse width limited by maximum junction temperature.