



Micro Commercial Components



Micro Commercial Components  
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# MCQ4822

## Features

- Halogen free available upon request by adding suffix "-HF"
- High power and current handing capability
- Lead free product is acquired
- Surface mount package
- Moisture Sensitivity Level 1
- Epoxy meets UL 94 V-0 flammability rating

## Mechanical Data

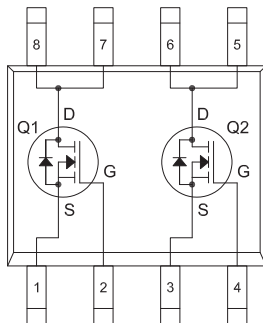
- Case: SOP-8, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking: Q4822

## Maximum Ratings

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance; 89°C/W Junction To Ambient

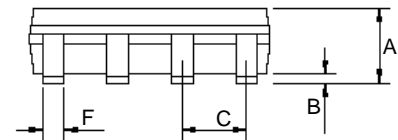
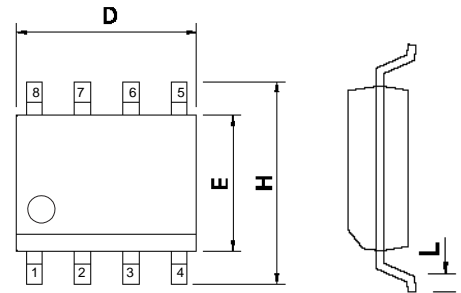
Parameter	Symbol	Value	Unit
Drain-Source-Voltage	$V_{DSS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current (t ≤ 10s) (note 1)	$I_D$	8.5	A
Pulsed Drain Current (note 2)	$I_{DM}$	30	A
Power Dissipation	$P_D$	1.4	W

### Equivalent circuit



## N-Channel Enhancement Mode Field Effect Transistor

## SOP-8



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.053	.069	1.35	1.75	
B	.004	.010	0.10	0.25	
C	0.050BSC		1.27BSC		
F	.013	.020	0.33	0.51	
D	.189	.197	4.80	5.00	
E	.150	.157	3.80	4.00	
H	.228	.244	5.80	6.20	
L	.016	.050	0.40	1.27	

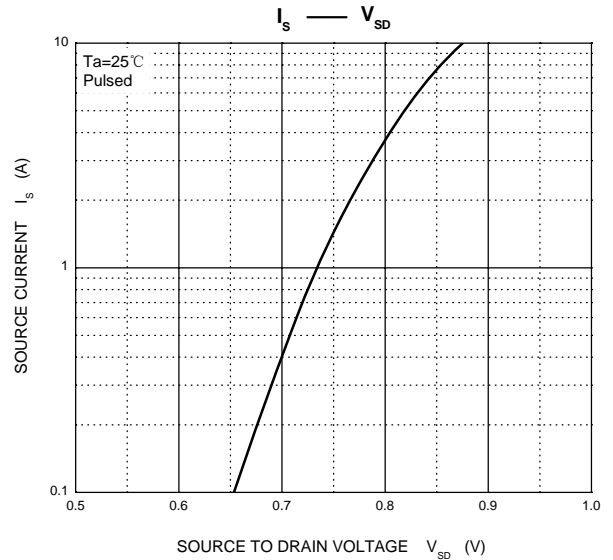
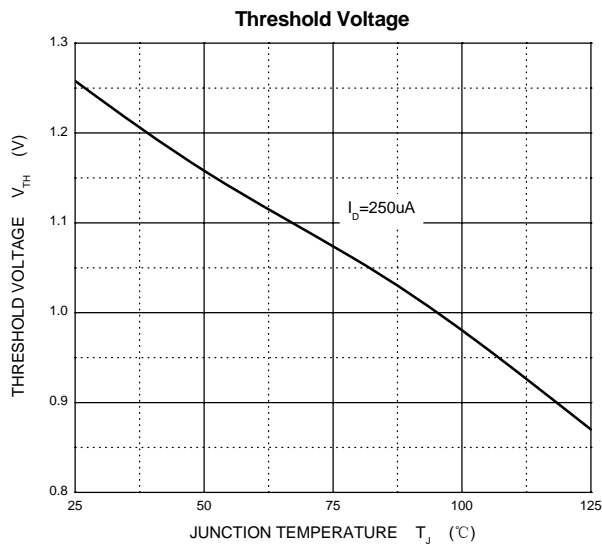
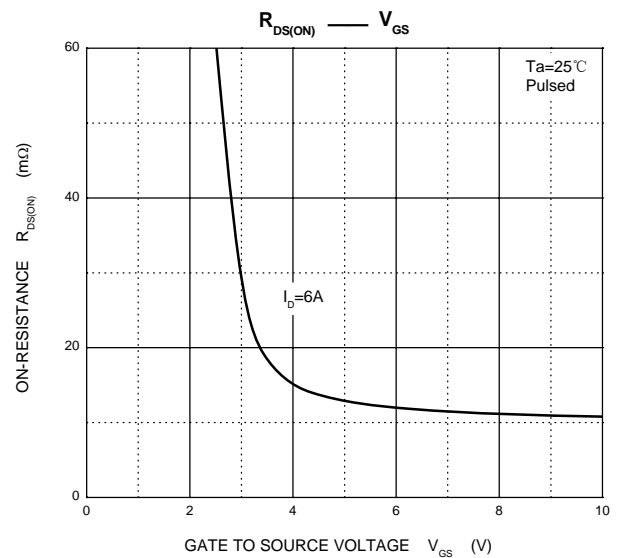
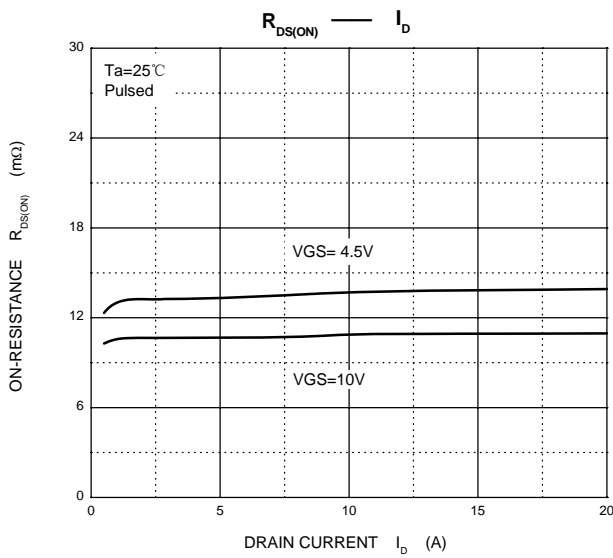
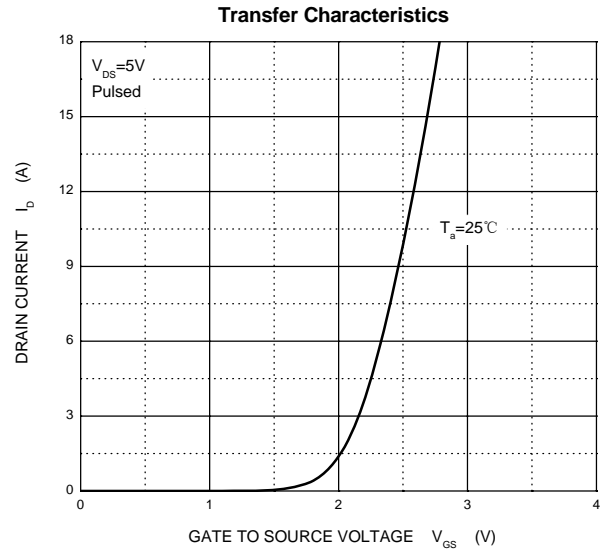
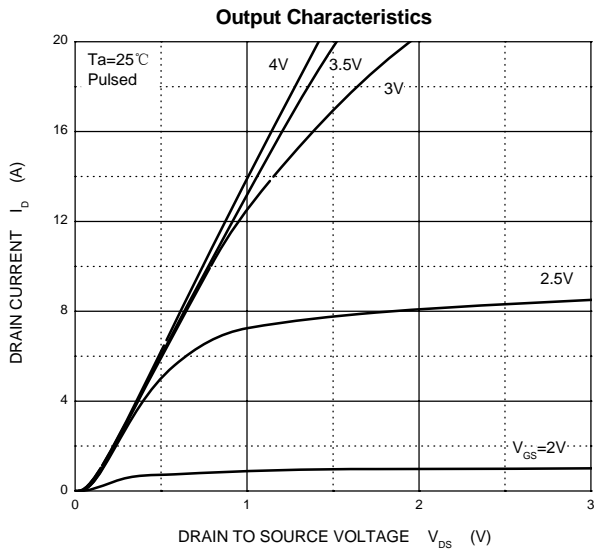
**Electrical characteristics (T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>STATIC PARAMETERS</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA	30			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> = 24V, V <sub>GS</sub> = 0V			1	μA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> = ±20V, V <sub>DS</sub> = 0V			±100	nA
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	1		3	V
Drain-source on-resistance (note 3)	R <sub>DS(on)</sub>	V <sub>GS</sub> = 10V, I <sub>D</sub> = 8.5A			16	mΩ
		V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 6A			26	mΩ
Forward transconductance (note 3)	g <sub>FS</sub>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 8.5A		20		S
Diode forward voltage (note 3)	V <sub>SD</sub>	I <sub>S</sub> = 1A, V <sub>GS</sub> = 0V			1	V
<b>DYNAMIC PARAMETERS(Note 4)</b>						
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V, f = 1MHz			1250	pF
Output capacitance	C <sub>oss</sub>			180		pF
Reverse transfer capacitance	C <sub>rss</sub>			110		pF
<b>SWITCHING PARAMETERS(Note 4)</b>						
Turn-on delay time	t <sub>d(on)</sub>	V <sub>GS</sub> = 10V, V <sub>DS</sub> = 15V, R <sub>L</sub> = 1.8Ω, R <sub>GEN</sub> = 3Ω			7.5	ns
Turn-on rise time	t <sub>r</sub>				6.5	ns
Turn-off delay time	t <sub>d(off)</sub>				25	ns
Turn-off fall time	t <sub>f</sub>				5	ns
Total gate charge (10V)	Q <sub>g</sub>	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 10V, I <sub>D</sub> = 8.5A			23	nC
Total gate charge (4.5V)					11.2	nC
Gate-source charge	Q <sub>gs</sub>			2.6		nC
Gate-drain charge	Q <sub>gd</sub>			4.2		nC

**Notes :**

- The value of R<sub>θJA</sub> is measure with the device mounted on 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with T<sub>a</sub>=25°C. The value in any given application depends on the user's specific board design. The current rating is based on the t≤10s thermal resistance rating.
- Repetitive rating : Pulse width limited by junction temperature.
- Pulse Test : Pulse Width≤300μs, Duty Cycle≤2%.
- Guaranteed by design, not subject to production testing.

# MCQ4822





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### Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 4Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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- Техническая поддержка проекта;
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#### Как с нами связаться

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