



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

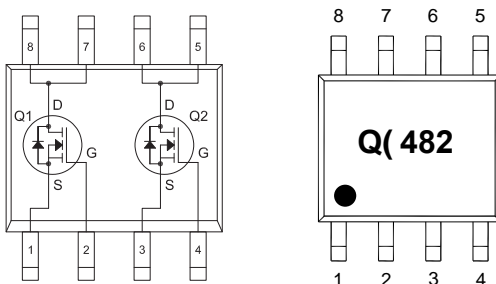
- Case: SOP-8, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking: Q4822

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}	±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

Internal Structure and Marking Code



N-Channel Enhancement Mode Field Effect Transistor

SOP-8

DIMENSIONS					
DIM	INCHES		MM		NOTE
	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	

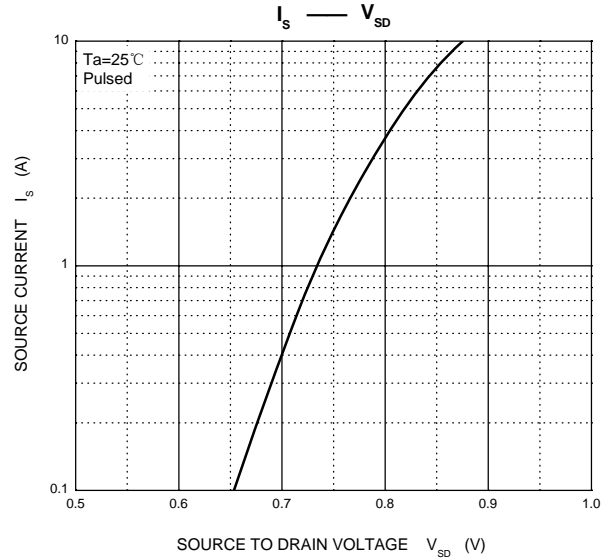
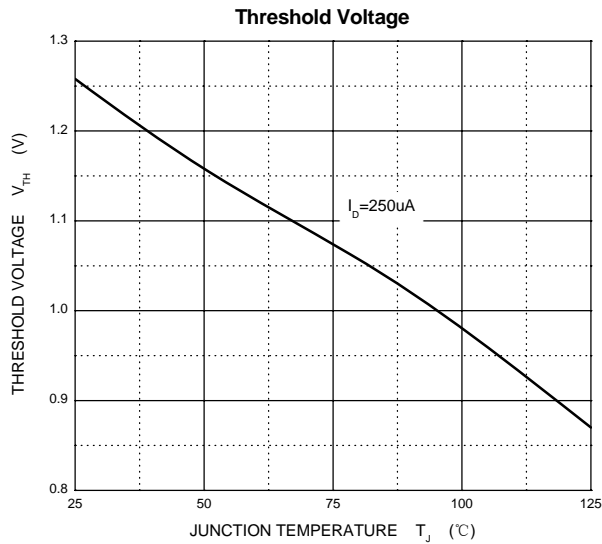
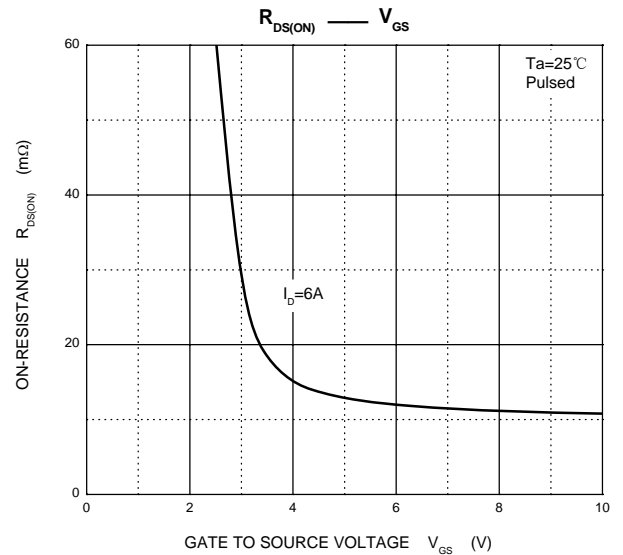
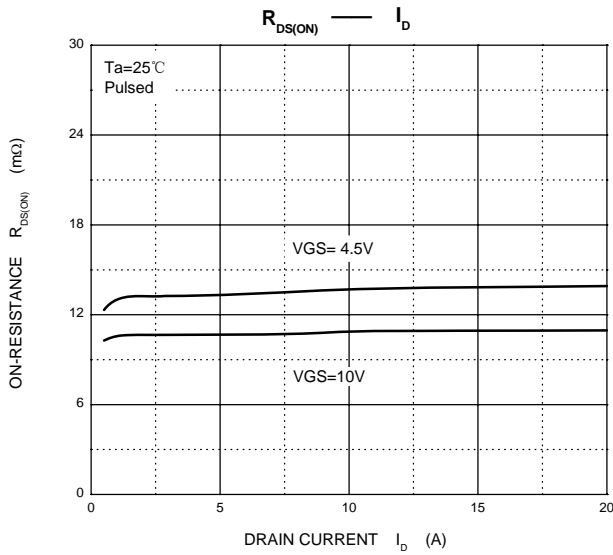
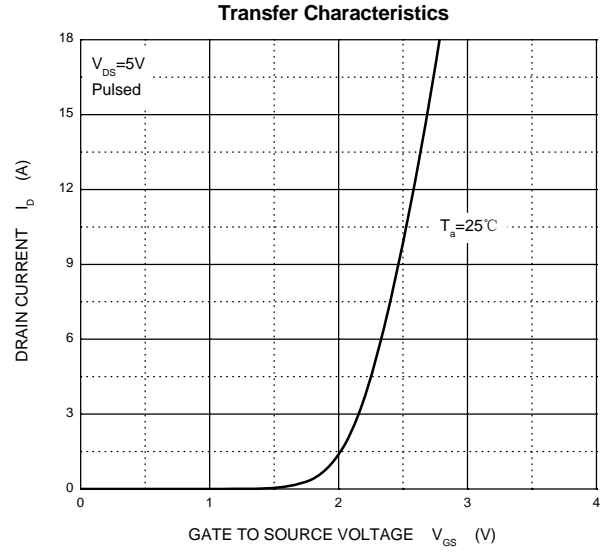
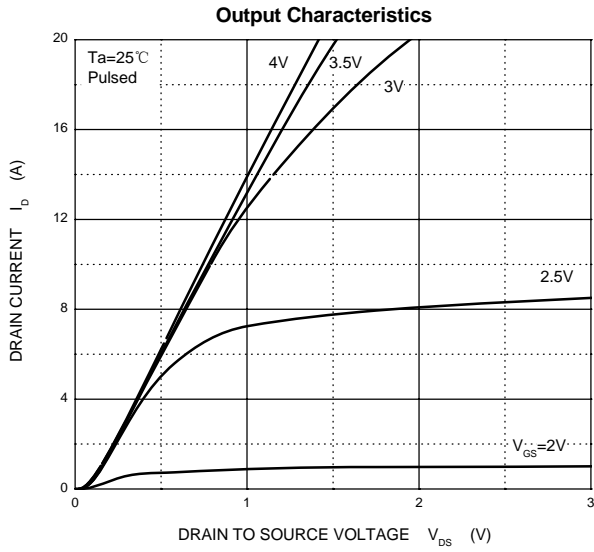
Electrical characteristics (T_a=25°C unless otherwise noted)

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

Notes :

- The value of R_{θJA} is measure with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_a=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.

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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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