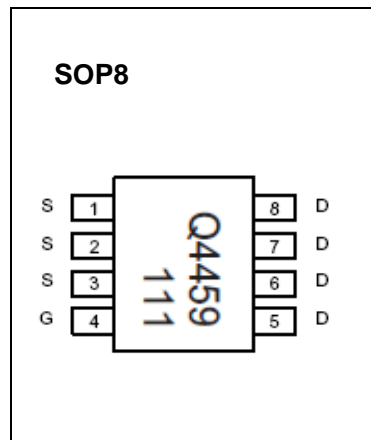
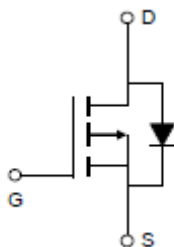


SOP8 Plastic-Encapsulate MOSFETS

CJQ4459 P-Channel MOSFET

DESCRIPTION

The CJQ4459 combines advanced trench MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$. This device is ideal for load switch and battery protection applications.



Maximum ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Units
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-6.5	A
Pulsed Drain Current (note 1)	I_{DM}	-30	A
Power Dissipation (note 2)	P_D	1.25	W
Thermal Resistance from Junction to Ambient ($t \leq 10\text{s}$) (note 3)	$R_{\theta JA}$	100	$^{\circ}\text{C}/\text{W}$
Avalanche Current (note 1)	I_{AR}, I_{AS}	17	A
Repetitive energy $L=0.1\text{mH}$ (note 1)	E_{AR}, E_{AS}	14	mJ
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ 150	$^{\circ}\text{C}$

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} = -30V, V _{GS} = 0V			-1	μA	
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA	
Gate threshold voltage (note 4)	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1.4		-2.4	V	
Drain-source on-resistance (note 4)	R _{DS(on)}	V _{GS} = -10V, I _D = -6.5A			46	mΩ	
		V _{GS} = -4.5V, I _D = -5A			72	mΩ	
Forward tranconductance (note 4)	g _{FS}	V _{DS} = -5V, I _D = -6.5A	6			S	
Diode forward voltage (note 4)	V _{SD}	I _S = -1A, V _{GS} = 0V			-1	V	
DYNAMIC PARAMETERS (note 5)							
Input Capacitance	C _{iss}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz	415		625	pF	
Output Capacitance	C _{OSS}		70		130	pF	
Reverse Transfer Capacitance	C _{rss}		40		90	pF	
SWITCHING PARAMETERS (note 5)							
Turn-on delay time	t _{d(on)}	V _{GS} = -10V, V _{DS} = -15V, R _L = 2.5Ω, R _{GEN} = 3Ω		7.5		ns	
Turn-on rise time	t _r			5.5		ns	
Turn-off delay time	t _{d(off)}				19		ns
Turn-off fall time	t _f				7		ns
Total Gate Charge (10V)	Q _g	V _{DS} = -15V, V _{GS} = -10V, I _D = -6.5A	7.4		11	nC	
Total Gate Charge (4.5V)			3.7		6	nC	
Gate-Source Charge			Q _{gs}	1.3		1.9	nC
Gate-Drain Charge			Q _{gd}	1.3		3.1	nC

Notes :

1. Repetitive rating : Pulse width limited by junction temperature T_{J(MAX)} = 150°C. Ratings are based on low frequency and duty cycles to keep initial T_J = 25°C.
2. The power dissipation P_D is based on T_{J(MAX)} = 150°C, using ≤10s junction-to-ambient thermal resistance.
3. The value in any given application depends on the user's specific board design.
4. Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 0.5%.
5. These parameters have no way to verify.

CJQ4459

