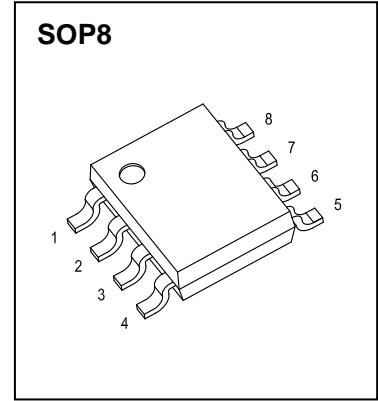


SOP8 Plastic-Encapsulate MOSFETS

CJQ4407S P-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
-30V	15mΩ@-10V	-11A
	20mΩ@-6V	



DESCRIPTION

The CJQ4407S 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

APPLICATIONS

- Battery protection applications
- Load switch

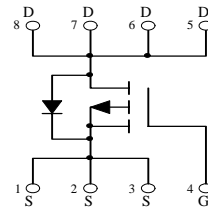
MARKING



Front side

Q4407S= Device code
 Solid dot=Pin1 indicator
 Solid dot = Green molding compound device,
 if none, the normal device
 YY=Date Code

Equivalent Circuit



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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	-11	A
Pulsed Drain Current	I_{DM}	-42	A
Single Pulsed Avalanche Energy	$E_{AS}^{(1)}$	107	mJ
Power Dissipation	P_D	1.4	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	89	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 ~ +150	$^\circ\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T_L	260	$^\circ\text{C}$

(1). E_{AS} condition: $V_{DD}=-20V, L=0.5mH, R_G=25\Omega$, Starting $T_J = 25^\circ\text{C}$

MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25\text{ }^\circ\text{C}$ unless otherwise specified

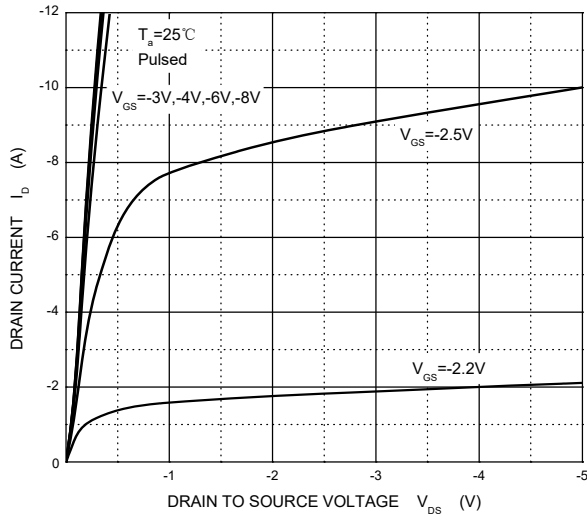
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$			-1	μA
Gate-body leakage current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
On characteristics (note1)						
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.0	-1.4	-2.2	V
Static drain-source on-state resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -10A$		10	15	$m\Omega$
		$V_{GS} = -6V, I_D = -8A$		13	20	$m\Omega$
Forward transconductance	g_{FS}	$V_{DS} = -5V, I_D = -10A$	20			S
Dynamic characteristics (note 2)						
Input capacitance	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V,$ $f = 1MHz$		2885		pF
Output capacitance	C_{oss}			341		
Reverse transfer capacitance	C_{rss}			305		
Switching characteristics (note 2)						
Total gate charge	Q_g	$V_{DS} = -15V, V_{GS} = -10V,$ $I_D = -10A$		48		nC
Gate-source charge	Q_{gs}			12		
Gate-drain charge	Q_{gd}			14		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = -15V,$ $V_{GS} = -10V, R_G = 3\Omega,$ $R_L = 1.25\Omega$		16		ns
Turn-on rise time	t_r			12		
Turn-off delay time	$t_{d(off)}$			45		
Turn-off fall time	t_f			21		
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note1)	V_{SD}	$V_{GS} = 0V, I_S = -2A$			-1.2	V
Continuous drain-source diode forward current	I_S				-11	A
Pulsed drain-source diode forward current	I_{SM}				-40	A

Notes:

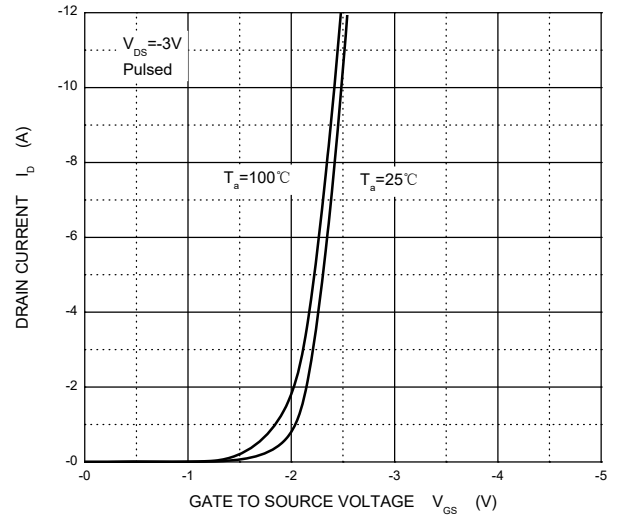
1. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
2. Guaranteed by design, not subject to production testing.

Typical Characteristics

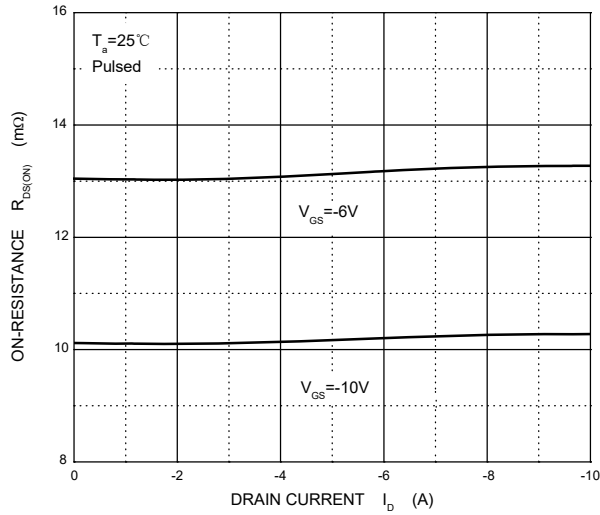
Output Characteristics



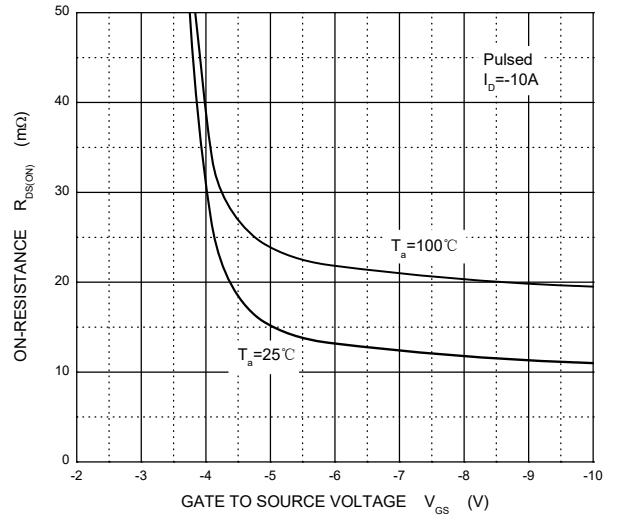
Transfer Characteristics



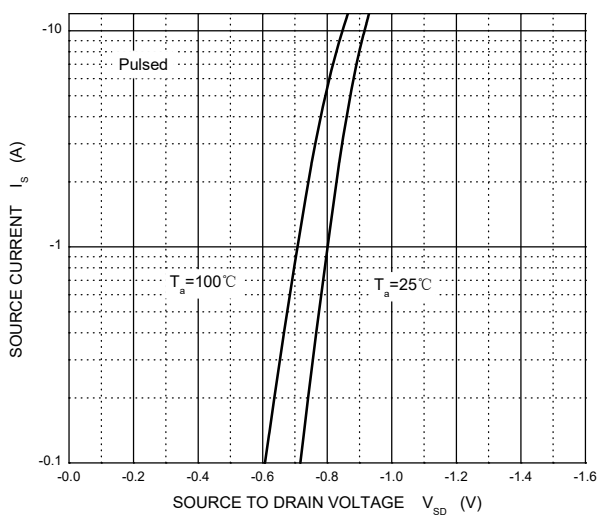
$R_{DS(ON)}$ — I_D



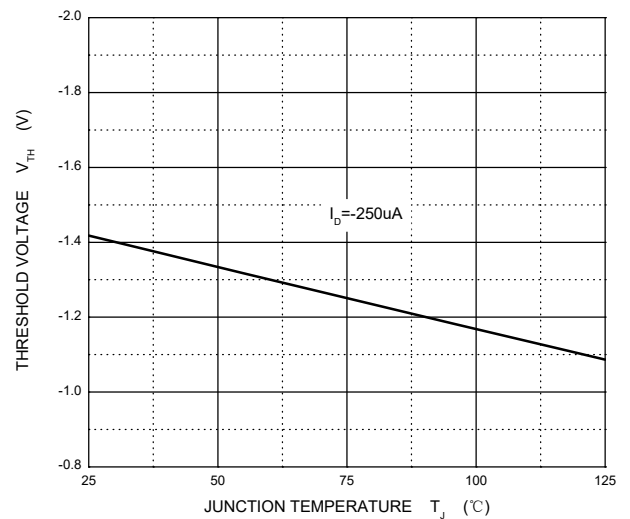
$R_{DS(ON)}$ — V_{GS}



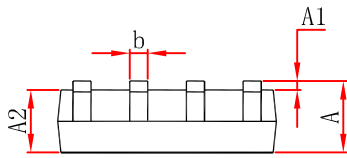
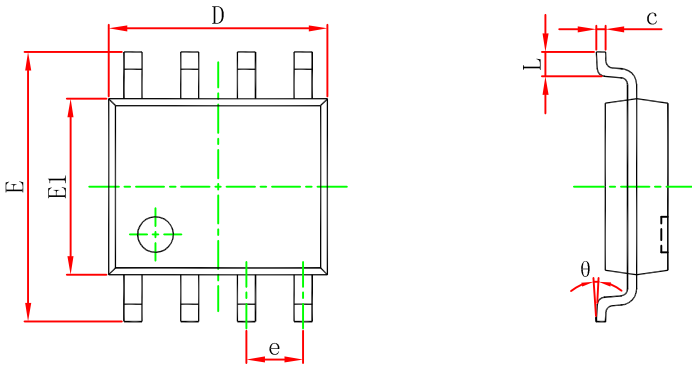
I_S — V_{SD}



Threshold Voltage

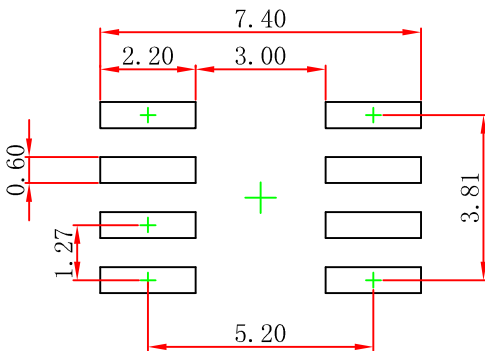


SOP8 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270 (BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

SOP8 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

NOTICE

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