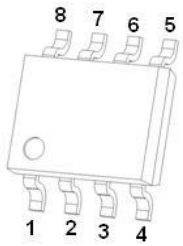
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

SOP8 Plastic-Encapsulate MOSFETS

CJQ4406 N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
30 V	12mΩ@10V	10A
	16mΩ@4.5V	

SOP8



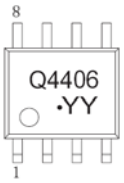
DESCRIPTION

The CJQ4406 uses advanced trench technology to provide excellent $R_{DS(ON)}$ with low gate charge. This device is suitable for high side switch in SMPS and general purpose applications.

APPLICATIONS

- High side switch in SMPS
- Load Switch

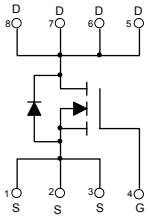
MARKING



Front side

Q4406= 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℃ 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	10	A
Pulsed Drain Current	I_{DM}	40	A
Single Pulsed Avalanche Energy	E_{AS}(1)	105	mJ
Power Dissipation	P_D	1.4	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	89	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 ~+150	℃
Lead Temperature for Soldering Purposes(1/8'' from case for 10s)	T_L	260	℃

(1).E_{AS} condition: V_{DD}=50V,L=0.5mH, R_G=25Ω, Starting T_J = 25°C

MOSFET ELECTRICAL CHARACTERISTICS

T_a=25℃ unless otherwise specified

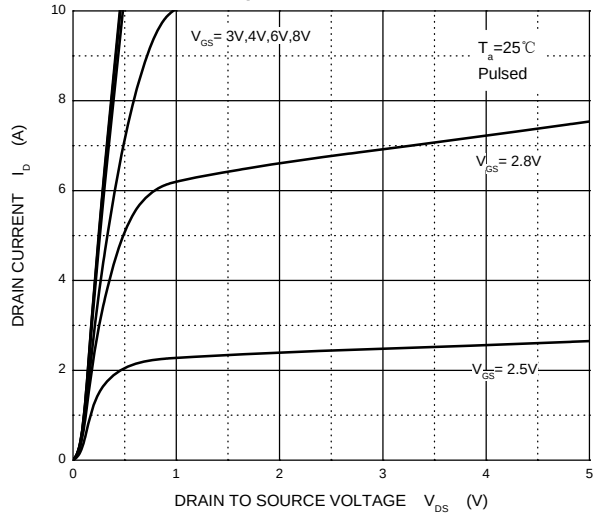
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	V_{GS} = 0V, I_D =250μA	30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =30V, V_{GS} =0V			1	μA
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V			±100	nA
On characteristics (note1)						
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.0	1.5	3.0	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =12A		7.6	12	mΩ
		V_{GS} =4.5V, I_D =10A		11	16	mΩ
Forward transconductance	g_{Fs}	V_{DS} =5V, I_D =10A		15		S
Dynamic characteristics (note 2)						
Input capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V, f =1MHz		1550		pF
Output capacitance	C_{oss}			300		
Reverse transfer capacitance	C_{rss}			180		
Switching characteristics (note 2)						
Total gate charge	Q_g	V_{DS}=15V, V_{GS}=5V, I_D=10A		13		nC
Gate-source charge	Q_{gs}			5.5		
Gate-drain charge	Q_{gd}			3.5		
Turn-on delay time	$t_{d(on)}$	V_{DD}=25V,I_D=1A, V_{GS}=10V,R_G=6Ω, R_L=6.7Ω		30		ns
Turn-on rise time	t_r			20		
Turn-off delay time	$t_{d(off)}$			100		
Turn-off fall time	t_f			80		
Gate Resistance	R_g	f =1MHz, V_{DS}=0V, V_{GS}=0V,	0.8		2.4	Ω
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note1)	V_{SD}	V_{GS} =0V, I_S=10A			1.2	V
Continuous drain-source diode forward current	I_S				10	A
Pulsed drain-source diode forward current	I_{SM}				40	A

Notes:

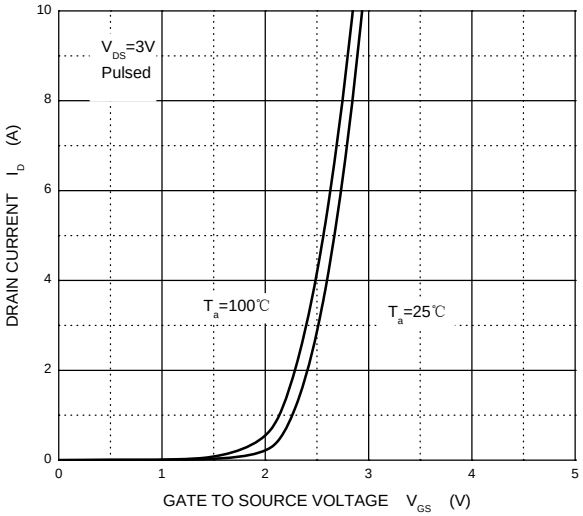
1. Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.
2. Guaranteed by design, not subject to production testing.

Typical Characteristics

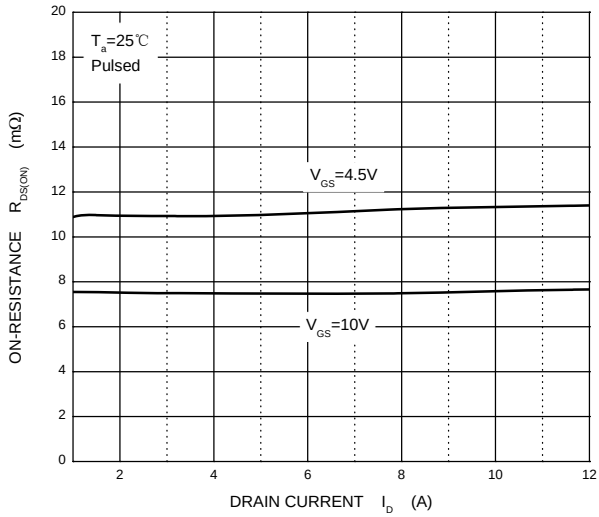
Output Characteristics



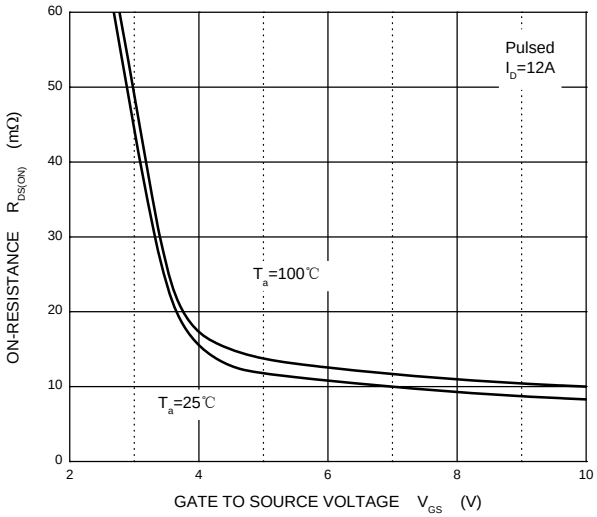
Transfer Characteristics



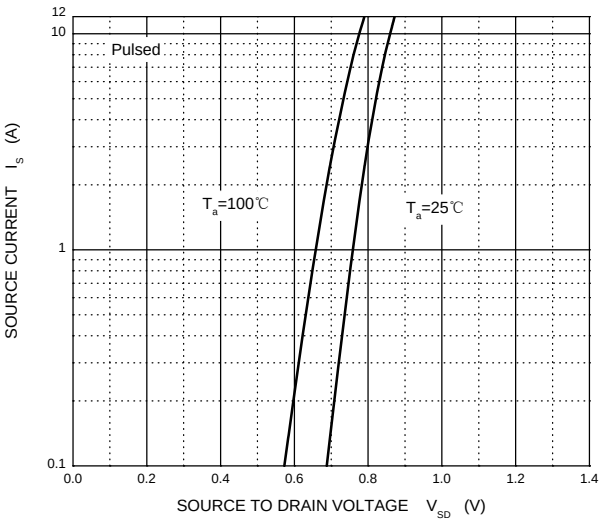
$R_{DS(ON)}$ —— I_D



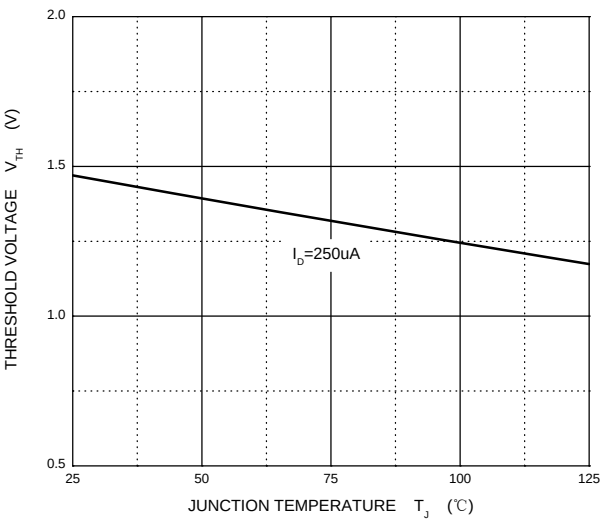
$R_{DS(ON)}$ —— V_{GS}



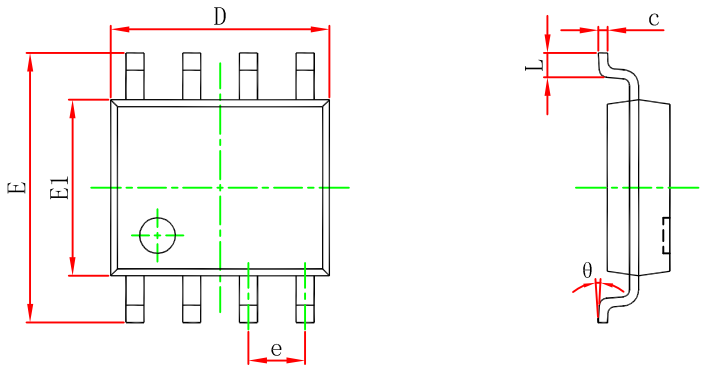
I_S —— V_{SD}



Threshold Voltage

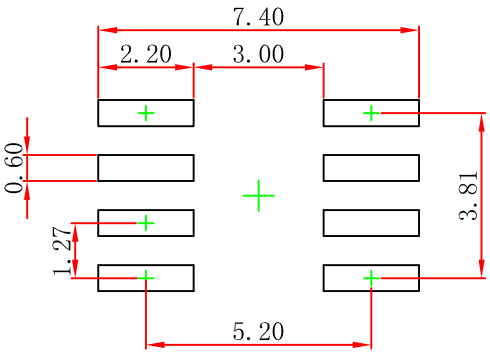


SOP8 Package Outline Dimensions



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



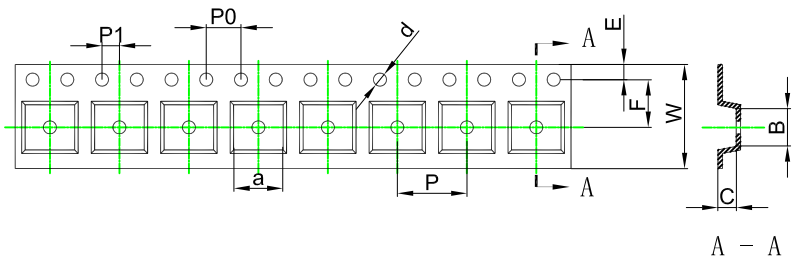
Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

NOTICE

JCET reserve the right to make modifications,enhancements, improvements, corrections or other changes without further notice to any product herein.JCET does not assume any liability arising out of the application or use of any product described herein.

SOP8 Tape and Reel

SOP8 Embossed Carrier Tape



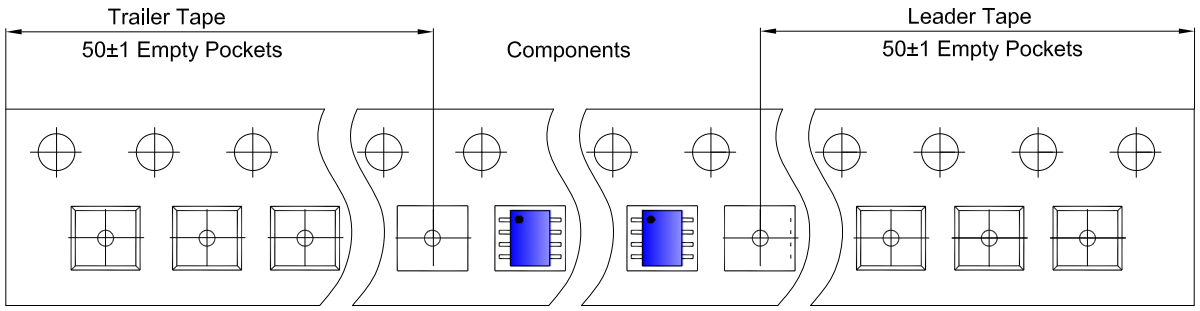
Packaging Description:

SOP8 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 2,500 units per 13" or 33cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

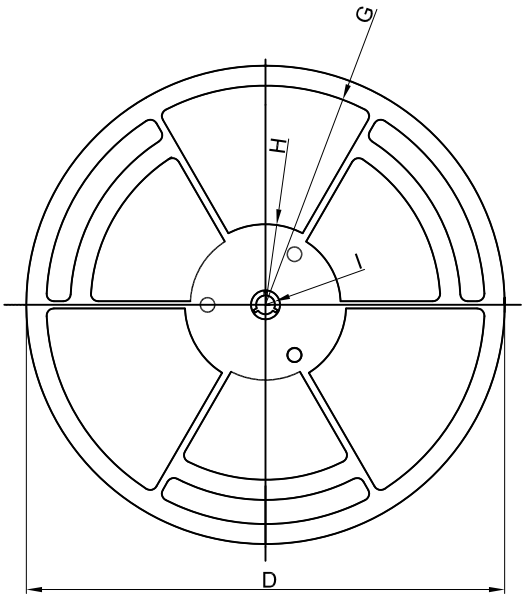
ALL DIM IN mm

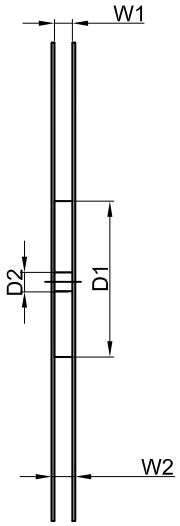
Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
SOP8	6.40	5.40	2.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOP8 Tape Leader and Trailer



SOP8 Reel





Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
13"Dia	Ø330.00	100.00	13.00	R151.00	R56.00	R6.50	12.40	17.60

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
4,000 pcs	13 inch	8,000 pcs	360×360×65	64,000 pcs	565×380×390	