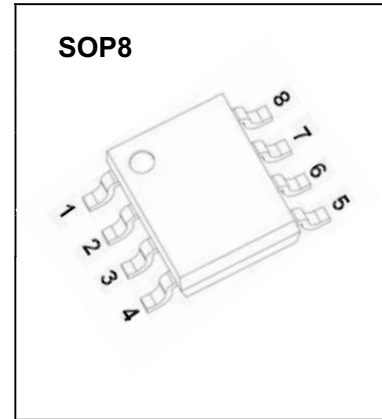


**SOP8 Plastic-Encapsulate MOSFETS**

**CJQ60P05** P-Channel Enhancement Mode Power MOSFET

<b>V<sub>(BR)DSS</sub></b>	<b>R<sub>DS(on)MAX</sub></b>	<b>I<sub>D</sub></b>
-60V	80mΩ@-10V	-5A



**Description**

The CJQ60P05 uses advanced trench technology and design to provide excellent R<sub>DS(ON)</sub> with low gate charge. It can be used in a wide variety of applications.

**Feature**

- V<sub>DS</sub> = -60V, I<sub>D</sub> = -5A  
R<sub>DS(ON)</sub> < 80mΩ @ V<sub>GS</sub> = -10V
- High density cell design for ultra low R<sub>DS(ON)</sub>
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation

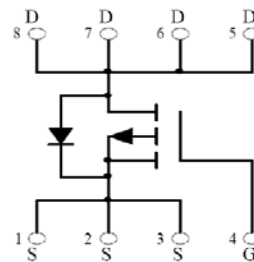
**Application**

- Power switching application
- Hard switched and high frequency circuits
- DC-DC Converter

**MARKING:**



**Equivalent Circuit**



**Absolute Maximum Ratings (T<sub>a</sub>=25°C unless otherwise noted)**

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V <sub>DS</sub>	-60	V
Gate-Source Voltage	V <sub>GS</sub>	±20	V
Drain Current-Continuous	I <sub>D</sub>	-5	A
Pulsed Drain Current(Note 1)	I <sub>DM</sub>	-25	A
Operating Junction	T <sub>J</sub>	150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ +150	°C
Lead Temperature for Soldering Purposes(1/8" form case for 10s)	T <sub>L</sub>	260	°C
Thermal Resistance ,Junction-to-Ambient(Note 2)	R <sub>θJA</sub>	100	°C/W

# MOSFET ELECTRICAL CHARACTERISTICS

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

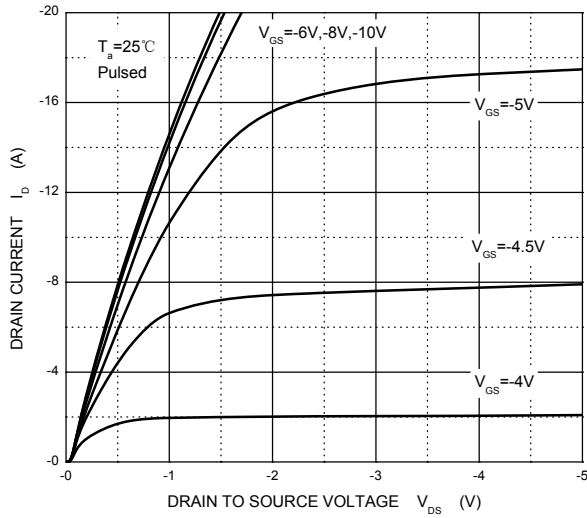
Parameter	Symbol	Condition	Min	Typ	Max	Unit
<b>Off Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-60			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-60V, V_{GS}=0V$			-1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 100$	nA
<b>On Characteristics (Note 3)</b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.5		-3.5	V
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-5A$		58	80	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS}=-15V, I_D=-5A$	5			S
<b>Dynamic Characteristics (Note4)</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-20V, V_{GS}=0V,$ $f=1.0MHz$		1450		pF
Output Capacitance	$C_{oss}$			145		pF
Reverse Transfer Capacitance	$C_{rss}$			110		pF
<b>Switching Characteristics (Note 4)</b>						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=-30V, R_L=30\Omega$ $V_{GS}=-10V, R_{GEN}=6\Omega$		8		ns
Turn-on Rise Time	$t_r$			9		ns
Turn-Off Delay Time	$t_{d(off)}$			65		ns
Turn-Off Fall Time	$t_f$			30		ns
Total Gate Charge	$Q_g$	$V_{DS}=-30V, I_D=-5A,$ $V_{GS}=-10V$		26		nC
Gate-Source Charge	$Q_{gs}$			4.5		nC
Gate-Drain Charge	$Q_{gd}$			7		nC
<b>Drain-Source Diode Characteristics</b>						
Diode Forward Voltage (Note 3)	$V_{SD}$	$V_{GS}=0V, I_S=-3A$			-1.2	V
Diode Forward Current (Note 2)	$I_S$				-5	A

## Notes:

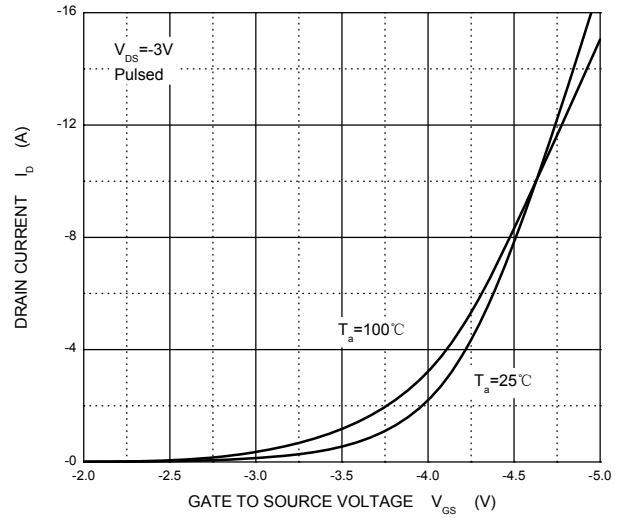
1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board,  $t \leq 10$  sec.
3. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
4. Guaranteed by design, not subject to production

# Typical Characteristics

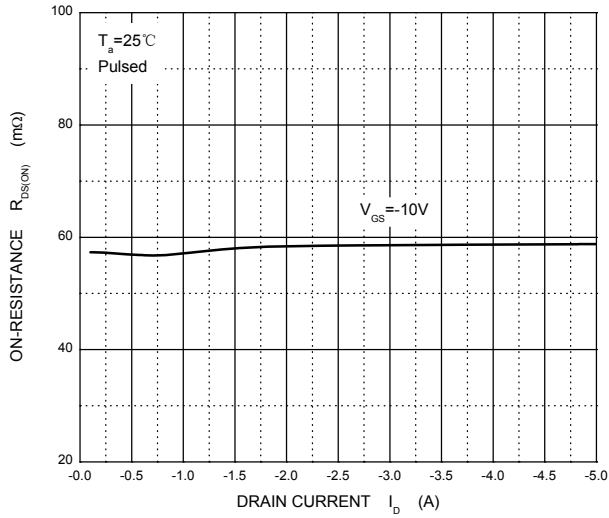
Output Characteristics



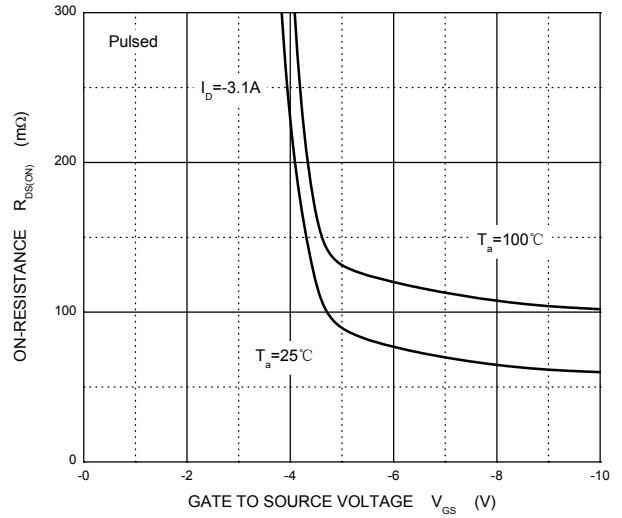
Transfer Characteristics



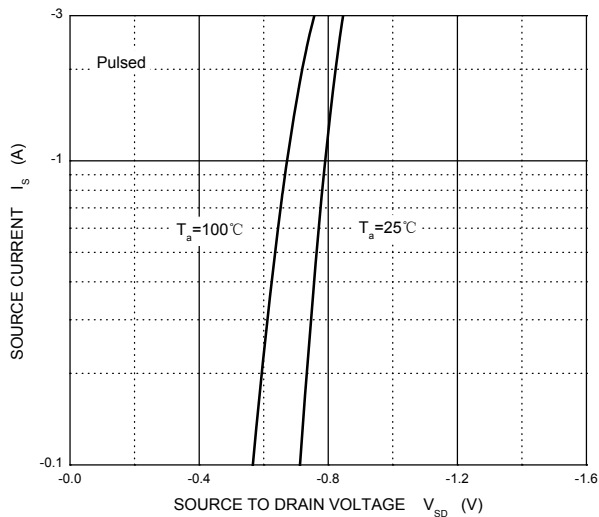
$R_{DS(ON)}$  —  $I_D$



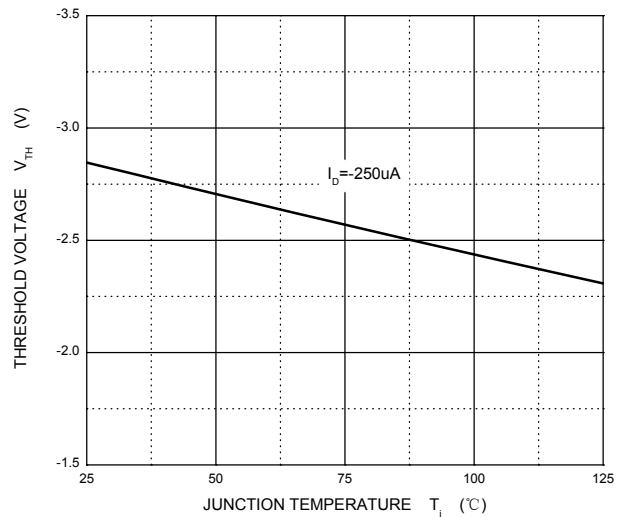
$R_{DS(ON)}$  —  $V_{GS}$



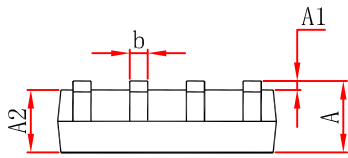
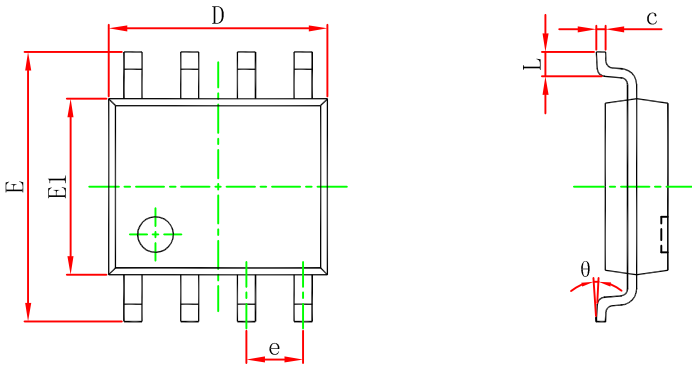
$I_S$  —  $V_{SD}$



Threshold Voltage

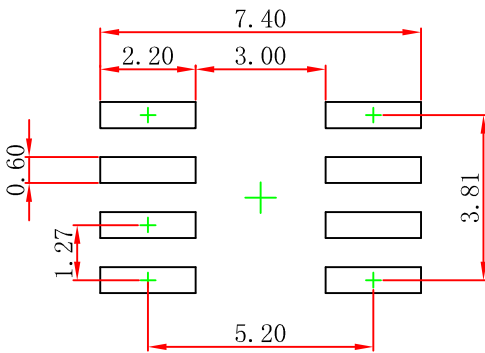


## SOP8 Package Outline Dimensions



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
theta	0°	8°	0°	8°

## SOP8 Suggested Pad Layout



### Note:

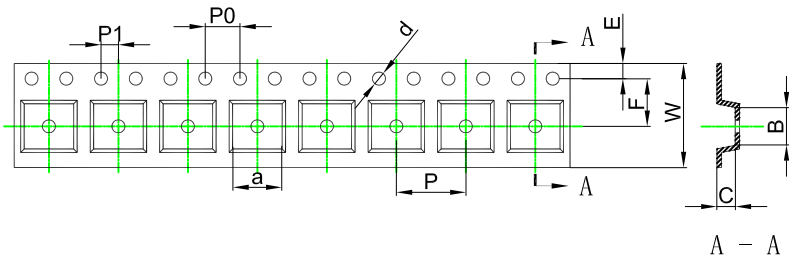
1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

### NOTICE

JSCJ reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JSCJ 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).

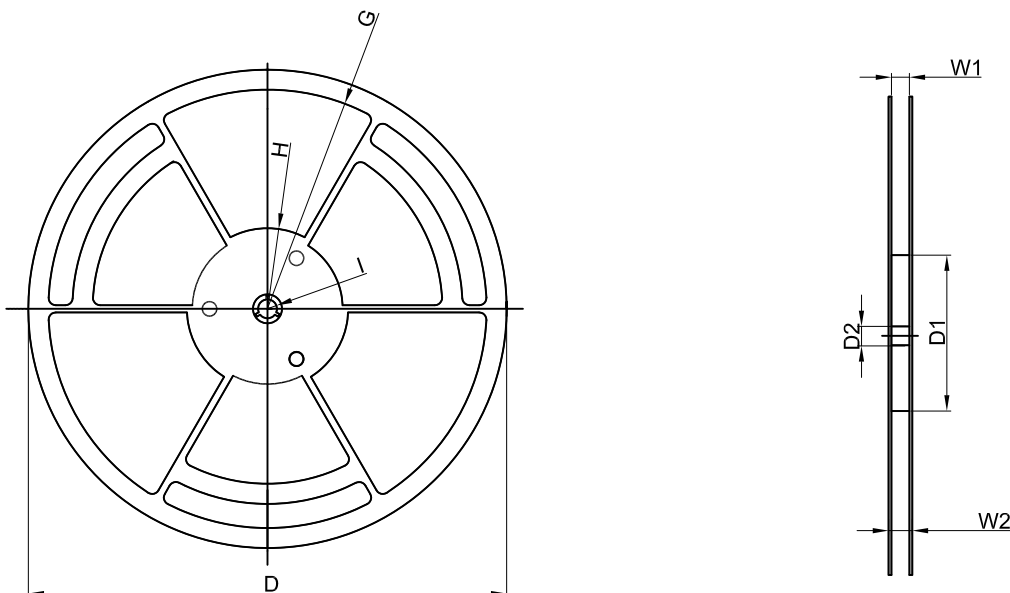
ALL DIM IN mm

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)
2,500 pcs	13 inch	2,500 pcs	336×336×48	20,000 pcs	445×355×365	