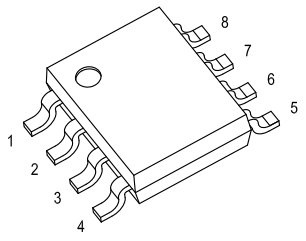
SZCJ Shenzhen Changji Semiconductor Co., LTD.

SOP8 Plastic-Encapsulate MOSFETS

CJQ05N10 Dual N-Channel MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$MAX	I_D
100V	103mΩ@10V	5A

SOP8



DESCRIPTION

The CJQ05N10 uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge .This device is suitable for use in a wide variety of applications.

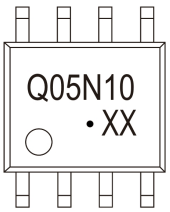
FEATURES

- Lead free product is acquired
- Special process technology for high ESD capability
- High density cell design for ultra low $R_{DS(on)}$
- Excellent package for good heat dissipation

APPLICATION

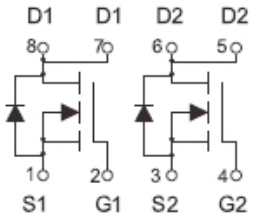
- Power switching application
- Hard switching and high frequency circuits
- Uninterruptible power supply

MARKING:



Q05N10 = Device code
Solid dot = Green molding compound device, if none, the normal device
XX = Code

Equivalent Circuit



Maximum ratings (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D①	5	A
Pulsed Drain Current	I_{DM}②	24	A
Power Dissipation	P_D①	1.25	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$⑤	100	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_J,T_{STG}	-55~+150	℃

MOSFET ELECTRICAL CHARACTERISTICS

T_J =25 ℃ unless otherwise specified

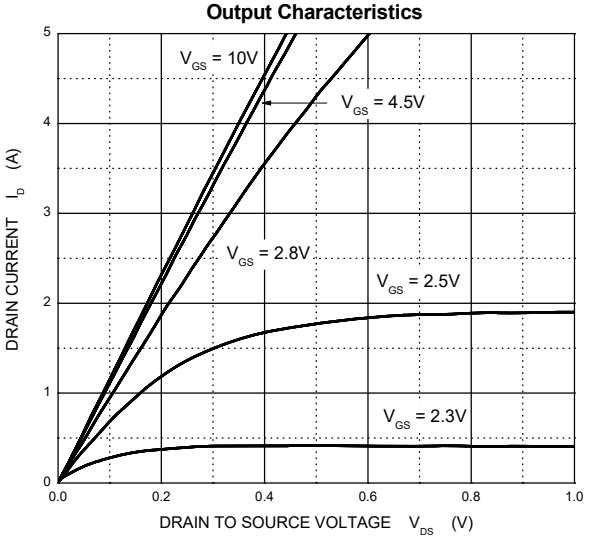
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	100			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =100V,V_{GS} = 0V			1.0	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±100	nA
On characteristics③						
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1.0	1.8	3.0	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =2A		103	140	mΩ
Forward transconductance	g_{FS}	V_{DS} =5V, I_D =2.9A		8		S
Dynamic characteristics ④						
Input capacitance	C_{iss}	V_{DS} =50V,V_{GS} =0V,f =1MHz		713		pF
Output capacitance	C_{oss}			26		pF
Reverse transfer capacitance	C_{rss}			20		pF
Gate resistance	R_g	f =1MHz		2.3		Ω
Switching characteristics ④						
Total gate charge	Q_g	V_{DS} =20V,V_{GS} =10V,I_D =3A		16.2		nC
Gate-source Charge	Q_{gs}			2.2		nC
Gate-drain Charge	Q_{gd}			3.5		nC
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V,V_{DS}=30V, R_{GEN}=2.5Ω, I_D =2A, R_L=15Ω		11		ns
Turn-on rise time	t_r			7.4		ns
Turn-off delay time	$t_{d(off)}$			35		ns
Turn-off fall time	t_f			9.1		ns
Drain-Source Diode Characteristics						
Drain-source diode forward voltage	v_{SD}③	V_{GS} =0V,I_S =5A			1.2	V
Maximum continuous drain-source diode forward current	I_S①				5	A
Maximum pulsed drain-source diode forward current	I_{SM}②				24	A

Notes :

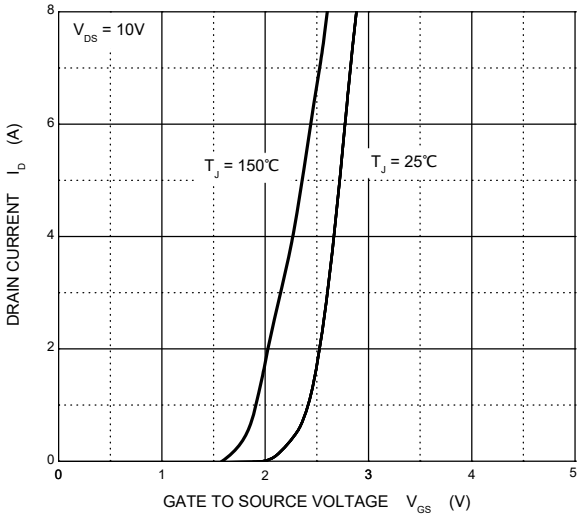
1.T_C=25℃ Limited only by maximum temperature allowed.
2.P_W≤10μs, Duty cycle≤1%.
3.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.
4.Guaranteed by design, not subject to production.
5.Device mounted on FR-4 board in a still air environment with T_A=25℃.

Typical Characteristics(T_J=25℃ unless otherwise noted)

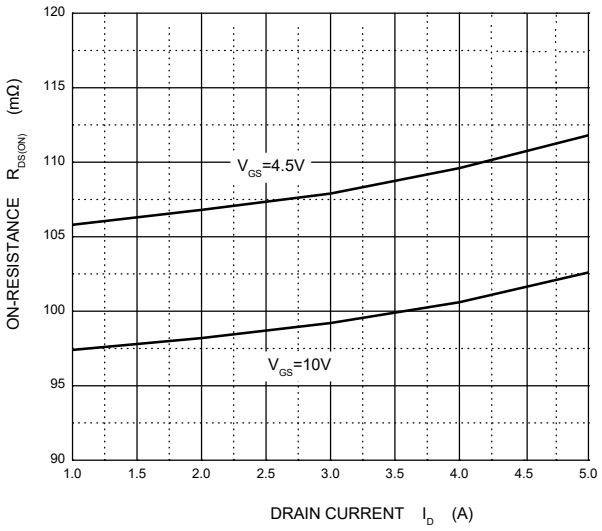
Output Characteristics



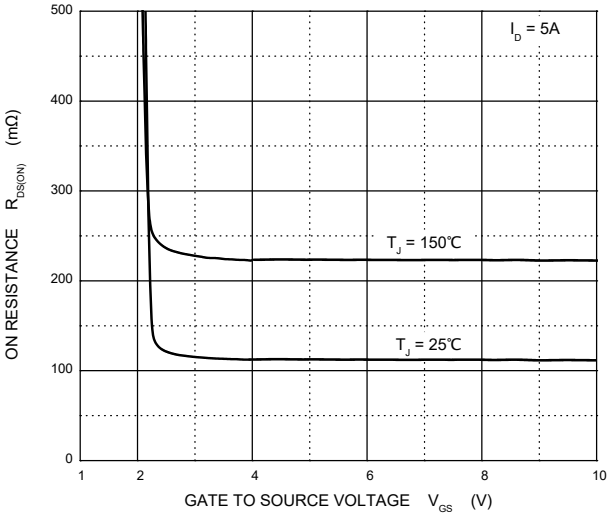
Transfer Characteristics



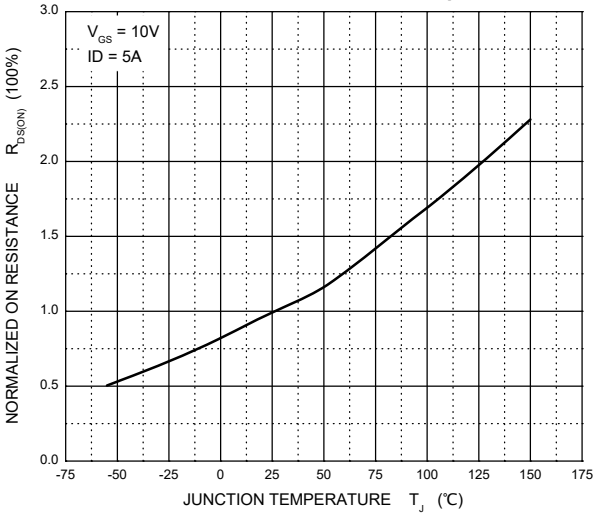
On Resistance vs. Drain Current



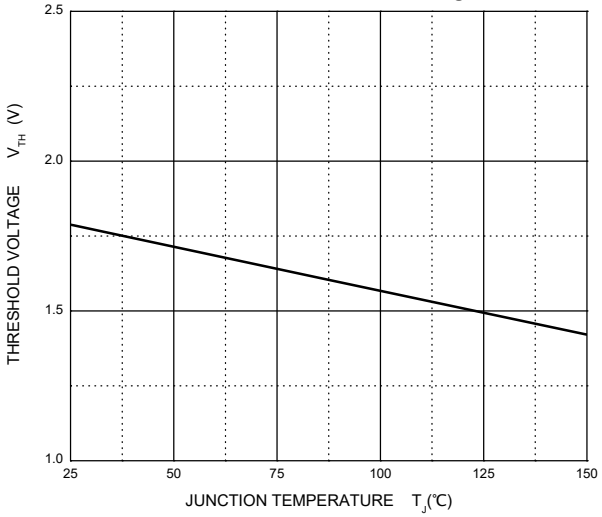
On Resistance vs. Gate-Source Bias



On Resistance vs. Junction Temperature

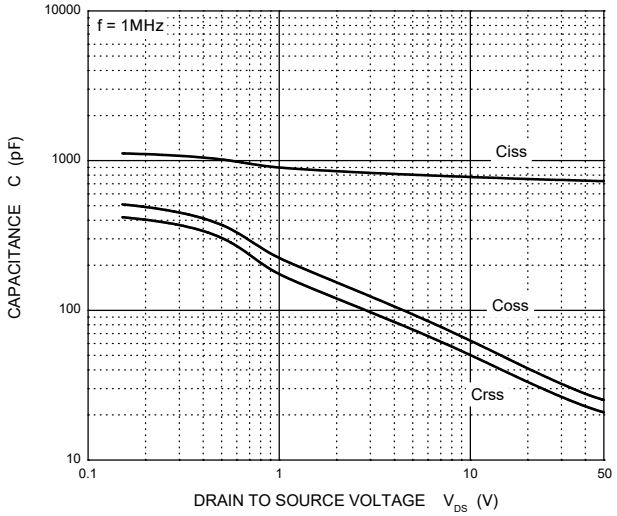


Gate-Source Threshold Voltage

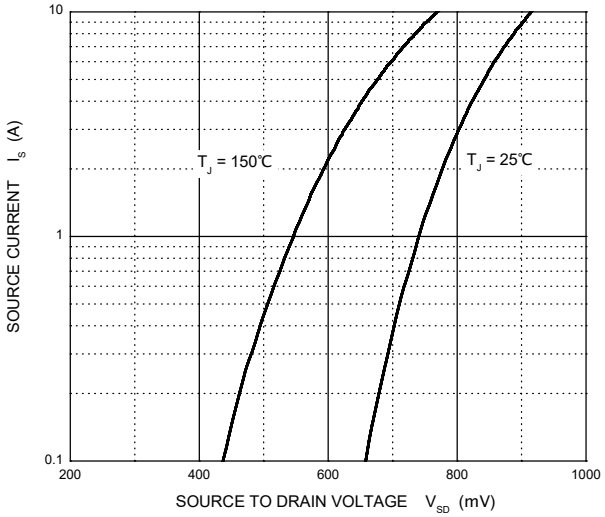


Typical Characteristics(T_J=25℃ unless otherwise noted)

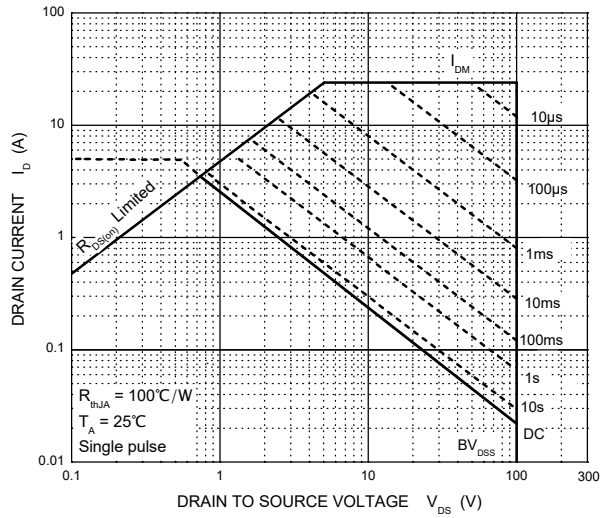
Typical Capacitances



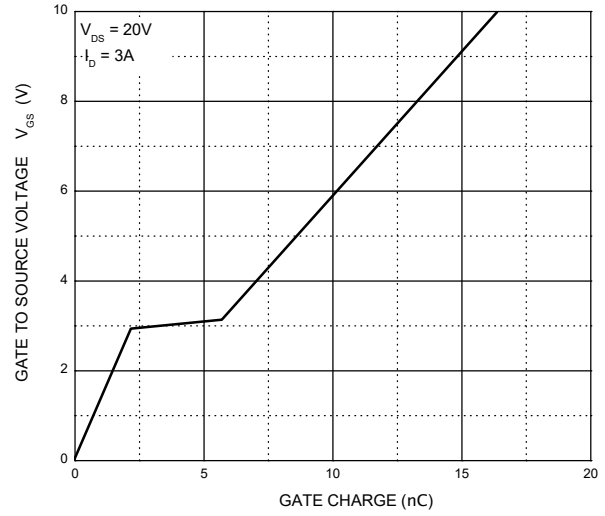
Source-Drain Diode Forward Characteristics



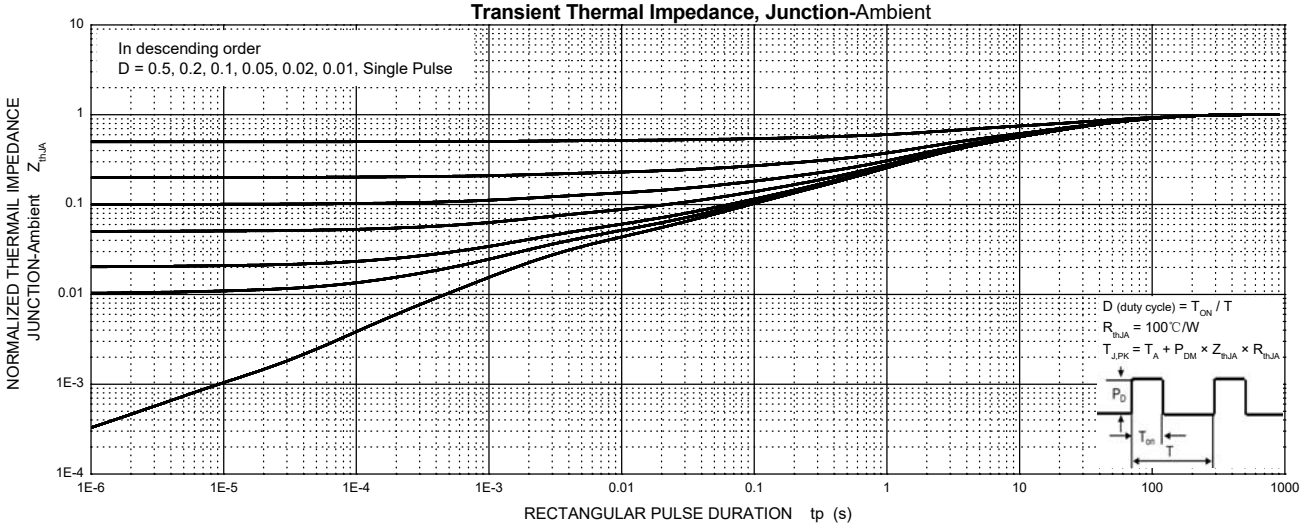
Maximum Safe Operating Area



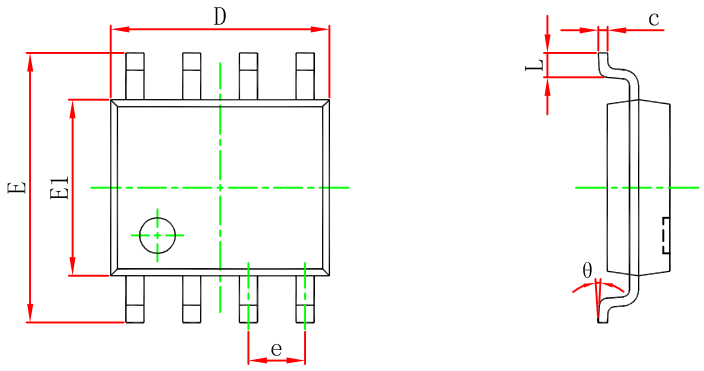
Gate Charge

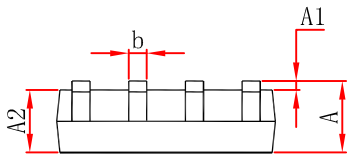


Transient Thermal Impedance, Junction-Ambient



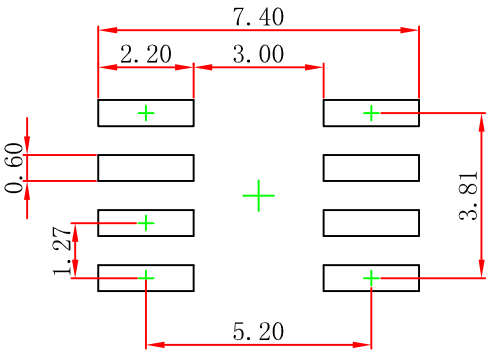
SOP8 Package Outline Dimensions





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	**Max**	**Min**	**Max**
A	1.450	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	4.700	5.100	0.185	0.201
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



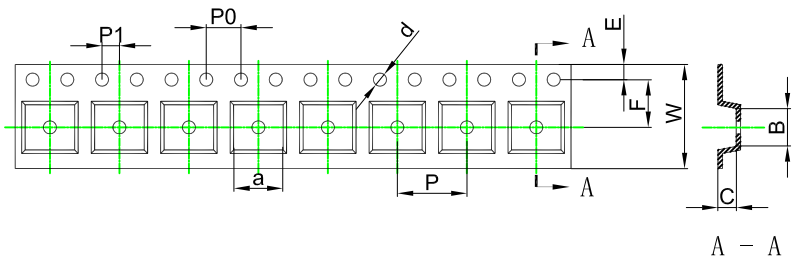
Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

NOTICE

SZCJ reserves the right to make modifications,enhan nts,improvements,corrections or other es without further notice to any product herein. SZCJ does not assume any liability arising out of the application or use of any product described h

SOP8 Tape and Reel

SOP8 Embossed Carrier Tape



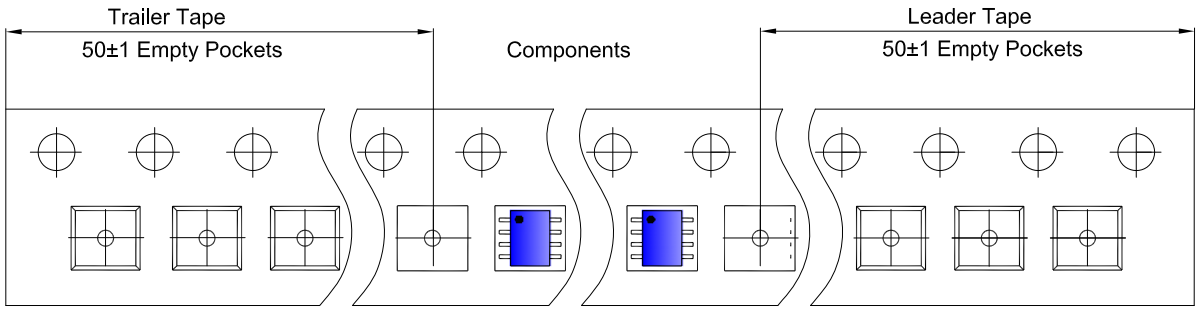
Packaging Description:

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 4,000 units per 13" or 33cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

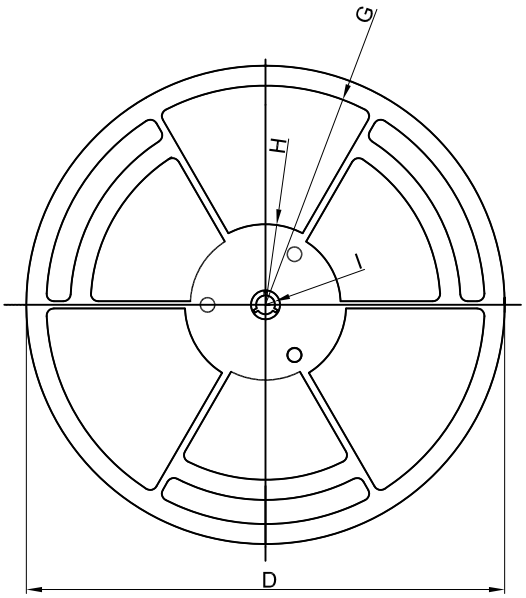
ALL DIM IN mm

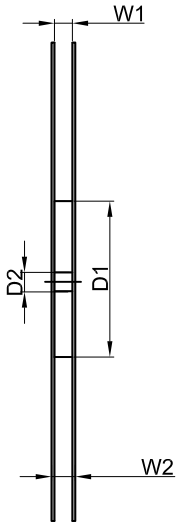
Dimensions are in millimeter										
Pkg type	a	B	C	d	E	F	P0	P	P1	W
SOP8	6.40	5.40	2.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

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	40,000 pcs	378×358×382	