SZCJ

Shenzhen Changji Semiconductor Co., LTD.

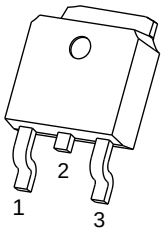
JSCJ

TO-252-2L Plastic-Encapsulate MOSFETS

CJU100N03 N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$ TYP	I_D
30V	4.5mq @10V	100A
	6.5mq @4.5V	

TO-252-2L



1. GATE
2. DRAIN
3. SOURCE

DESCRIPTION

The CJU100N03 uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications

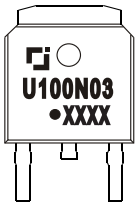
FEATURE

- Excellent package for good heat dissipation
- Ultra low gate charge
- Low reverse transfer capacitance
- Fast switching capability
- Avalanche energy specified

APPLICATION

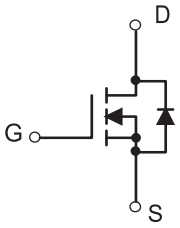
- Power switching application

MARKING



U100N03 = Device code.
Solid dot = Green molding compound device.
if none, the normal device .
XXXX = 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}	Ñ20	V
Continuous Drain Current	I_D ①	100	A
Pulsed Drain Current	I_{DM} ②	400	A
Single Pulsed Avalanche Energy	E_{AS} ③	100	mJ
Power Dissipation	P_D ①	90	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$ ⑥	100	℃/W
Thermal Resistance from Junction to Case	$R_{\theta JC}$ ①	1.39	℃/W
Junction Temperature and Storage Temperature Range	T_J T_{stg}	-55 ~+150	℃

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} =24V, V_{GS} =0V	T_J =25℃			1.0	μA
			T_J =125℃			100	
Gate-body leakage current	I_{GSS}	V_{DS} =0V, V_{GS} =±20V				±100	nA
On characteristics④							
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA		1.0	1.7	3.0	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =20A			4.5	6.5	mΩ
		V_{GS} =4.5V, I_D =20A			6.5	9.0	mΩ
Dynamic characteristics④⑤							
Input capacitance	C_{iss}	V_{DS} =15V,V_{GS} =0V, f =1MHz			2734	5700	pF
Output capacitance	C_{oss}				300	580	
Reverse transfer capacitance	C_{rss}				244	480	
Gate resistance	Rg	f =1MHz			2.0		Ω
Switching characteristics④⑤							
Total gate charge	Q_g	V_{DS}=15V, V_{GS}=10V, I_D=50A			49	98	nC
Gate-source charge	Q_{gs}				8.3	17	
Gate-drain charge	Q_{gd}				10	20	
Turn-on delay time	$t_{d(on)}$	V_{DD}=30V,I_D=1A, R_L=15Ω,V_{GS}=10V, R_G=6Ω			7	14	ns
Turn-on rise time	t_r				29	58	
Turn-off delay time	$t_{d(off)}$				28	56	
Turn-off fall time	t_f				10	20	
Drain-Source Diode Characteristics							
Drain-source diode forward voltage	V_{SD}④	V_{GS} =0V, I_S=10A				1.2	V
Continuous drain-source diode forward current	I_S①					100	A
Pulsed drain-source diode forward current	I_{SM}②					400	A

Notes:

1.T_C=25℃ Limited only by maximum temperature allowed.

2.P_W≤10μs, Duty cycle≤1%.

3.EAS condition: V_{DD}=15V,V_{GS}=10V, L=0.5mH, R_g=25Ω Starting T_J = 25°℃.

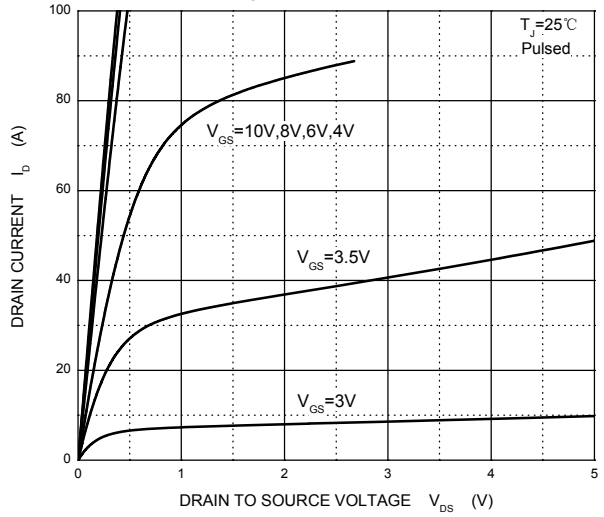
4.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

5.Guaranteed by design, not subject to production.

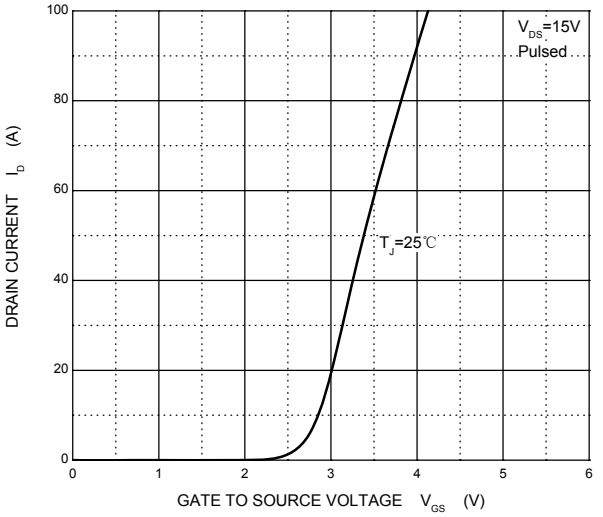
6.The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with T_a=25℃.

Typical Characteristics

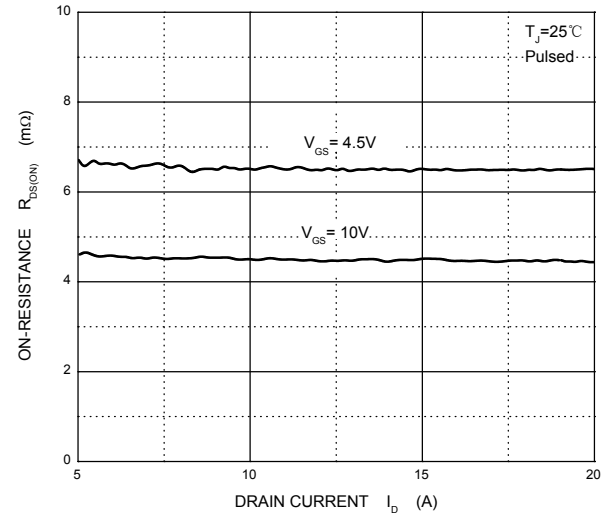
Output Characteristics



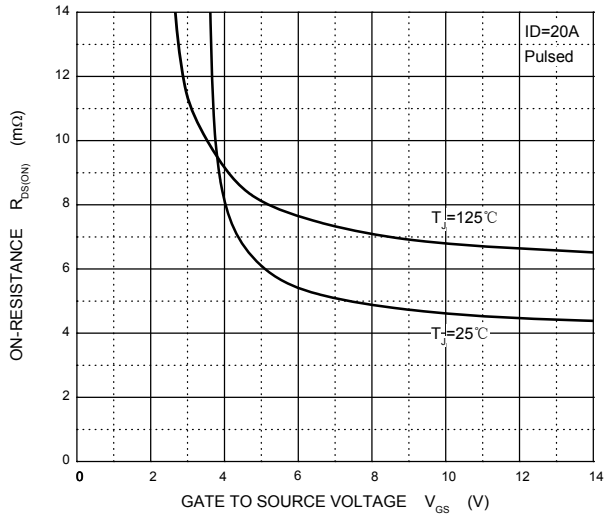
Transfer Characteristics



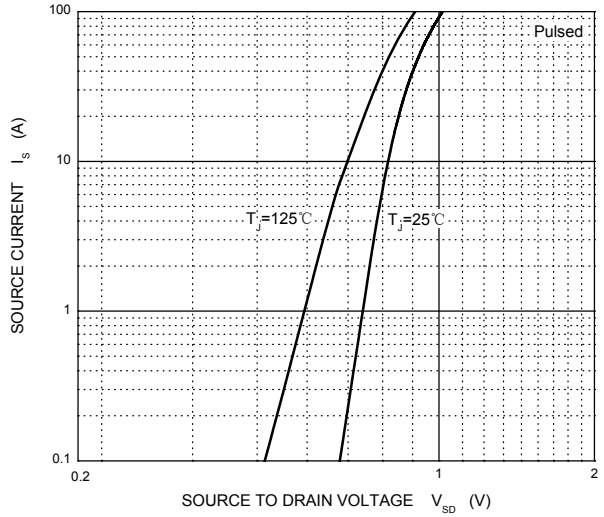
$R_{DS(ON)}$ —— I_D



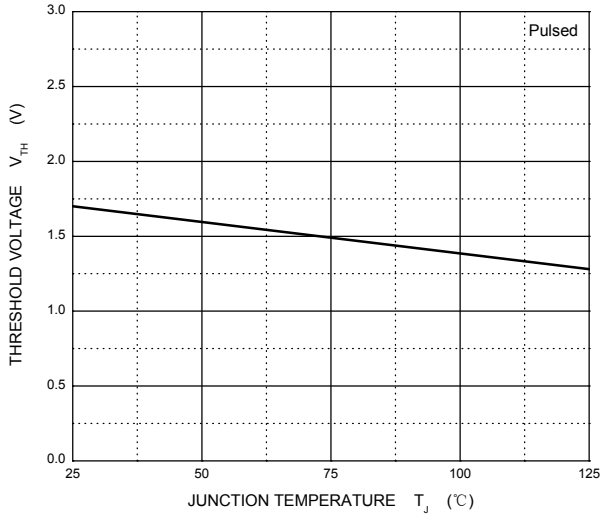
$R_{DS(ON)}$—— V_{GS}



I_S —— V_{SD}

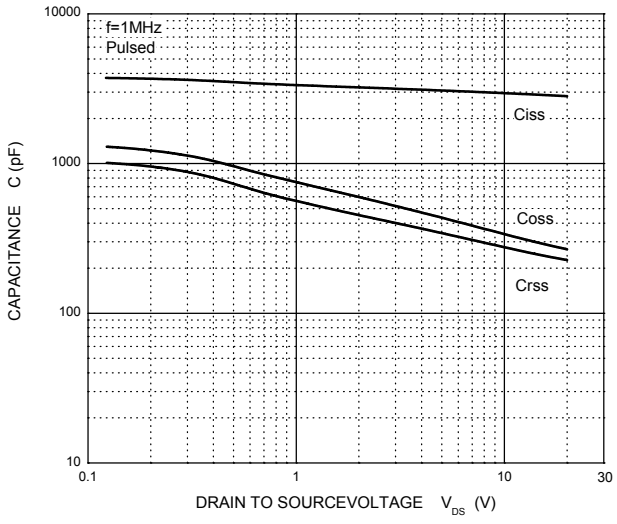


Threshold Voltage

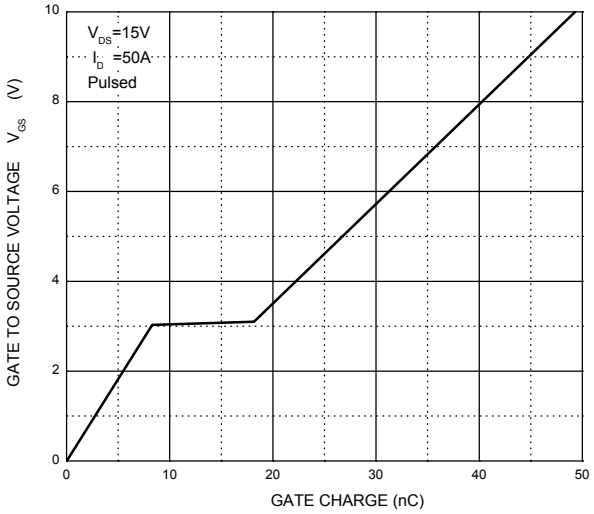


Typical Characteristics

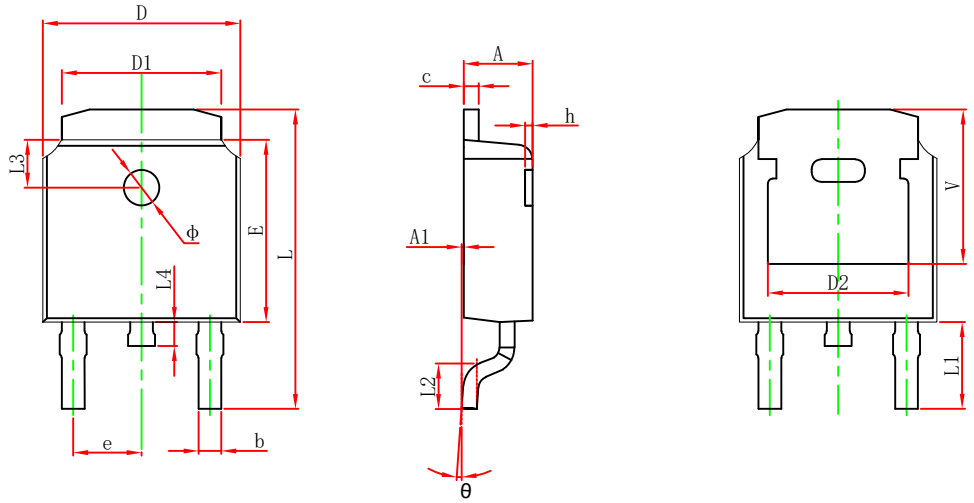
Capacitances



Gate Charge

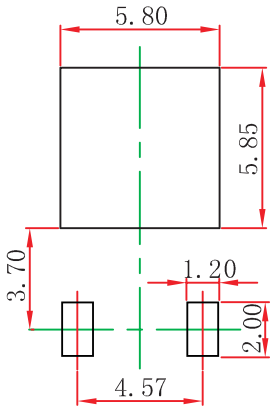


TO-252-2L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.382	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	

TO-252-2L Suggested Pad Layout



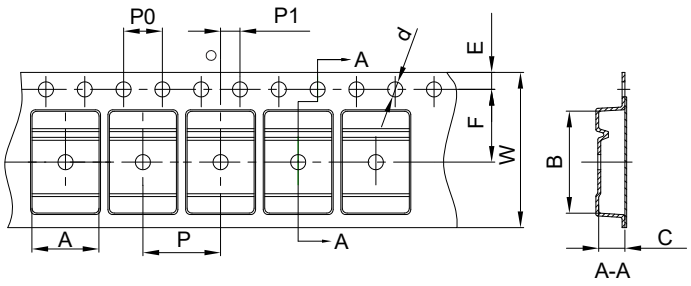
Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

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

TO-252-2L Tape and Reel

TO-252-2L Embossed Carrier Tabe

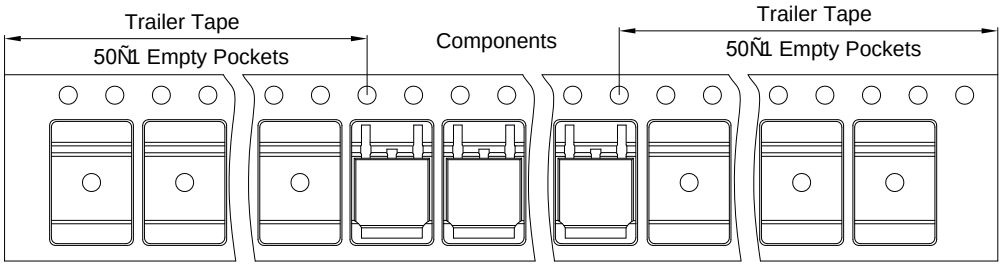


Packaging Description:

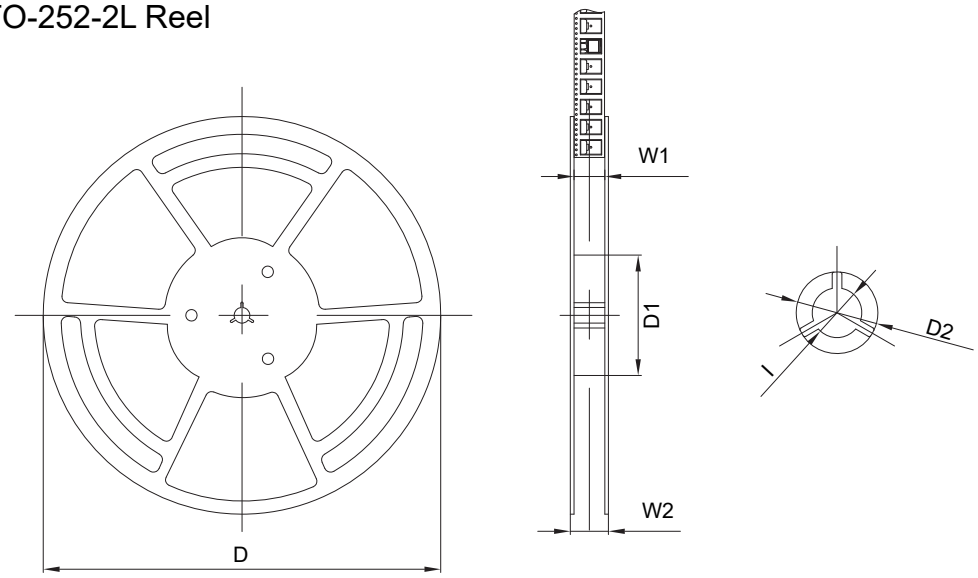
TO-252-2L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Hear Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 2500 units per 13″ or 33.0 cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
TO-252	6.90	10.50	2.70	Φ1.55	1.75	7.50	4.00	8.00	2.00	16.00

TO-252-2L Tape Leader and Trailer



TO-252-2L Reel



Dimensions are in millimeter						
Reel	D	D1	D2	W1	W2	I
13" Dia	330.00	100.00	Φ21.00	16.40	21.40	Φ13.00

Reel	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)
2500 pcs	13 inch	5000 pcs	360×360×65	25000 pcs	378×358×382