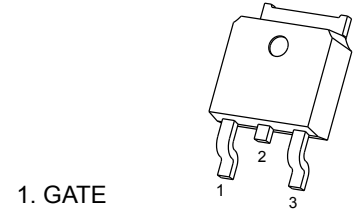


## TO-252-2L(4R) Plastic-Encapsulate MOSFETS

### CJU01N80 N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	$I_D$
800V	13.5Ω@10V	1A

TO-252-2L(4R)



1. GATE
2. DRAIN
3. SOURCE

#### GENERAL DESCRIPTION

The CJU01N80 is an N-channel mode power MOSFET using advanced technology to provide customers with planar stripe. This technology specializes in allowing a minimum on-state resistance and superior switching performance. It also can withstand high energy pulse in the avalanche and commutation mode. The CJU01N80 is universally applied in high efficiency switch mode power supply.

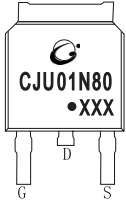
#### FEATURE

- Excellent package for good heat dissipation
- High switching speed
- 100% avalanche tested

#### APPLICATION

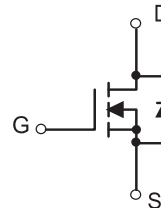
- Power switching application
- DC/DC converters

#### MARKING



CJU01N80= Device code  
 Solid dot = Green molding compound device,  
 if none, the normal device  
 XXX=Date Code

#### EQUIVALENT CIRCUIT



#### Maximum ratings ( $T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	800	V
Gate-Source Voltage	$V_{GS}$	±30	
Continuous Drain Current	$I_D$	1	A
Pulsed Drain Current	$I_{DM}$	4	
Single Pulsed Avalanche Energy (note1)	$E_{AS}$	90	mJ
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	100	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature Range	$T_{STG}$	-55 ~+150	
Maximum lead temperature for soldering purposes , 1/8"from case for 5 seconds	$T_L$	260	

## MOSFET ELECTRICAL CHARACTERISTICS

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

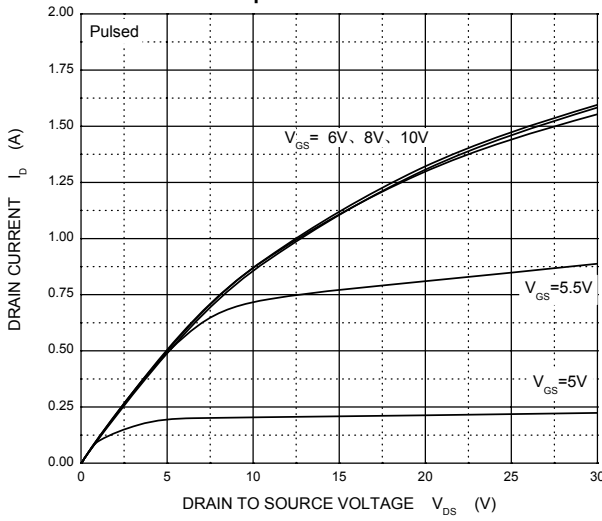
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Off characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	800			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 800V, V_{GS} = 0V$			10	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 30V$			$\pm 100$	nA
<b>On characteristics</b>						
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	3	4	5	V
Static drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 0.5A$		10	13.5	$\Omega$
Forward transconductance (note2)	$g_{fs}$	$V_{DS} = 50V, I_D = 0.5A$		0.75		S
<b>Dynamic characteristics (note 3)</b>						
Input capacitance	$C_{iss}$	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$			195	pF
Output capacitance	$C_{oss}$				26	
Reverse transfer capacitance	$C_{rss}$				3.5	
<b>Switching characteristics (note 2,3)</b>						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 400V, R_G = 25\Omega, I_D = 1A$			30	ns
Turn-on rise time	$t_r$				60	
Turn-off delay time	$t_{d(off)}$				40	
Turn-off fall time	$t_f$				60	
Total Gate Charge	$Q_g$	$V_{DS} = 640V, V_{GS} = 10V, I_D = 1A$			7.2	nC
Gate-Source Charge	$Q_{gs}$			1.1		nC
Gate-Drain Charge	$Q_{gd}$			3.3		nC
<b>Drain-Source Diode Characteristics</b>						
Drain-source diode forward voltage	$V_{SD}$	$V_{GS} = 0V, I_S = 1A$			1.4	V
Continuous drain-source diode forward current	$I_S$				1	A
Pulsed drain-source diode forward current	$I_{SM}$				4	A

### Notes :

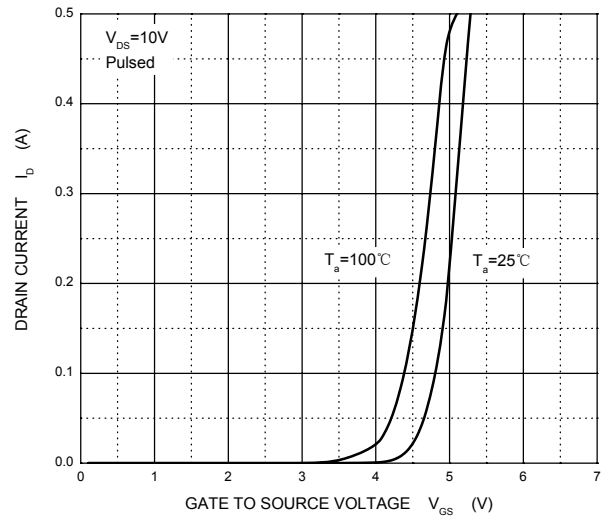
- $I_L = 1A, V_{DD} = 50V, R_G = 25\Omega, \text{Starting } T_J = 25^\circ\text{C}.$
- Pulse Test : Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
- Guaranteed by design, not subject to production

# Typical Characteristics

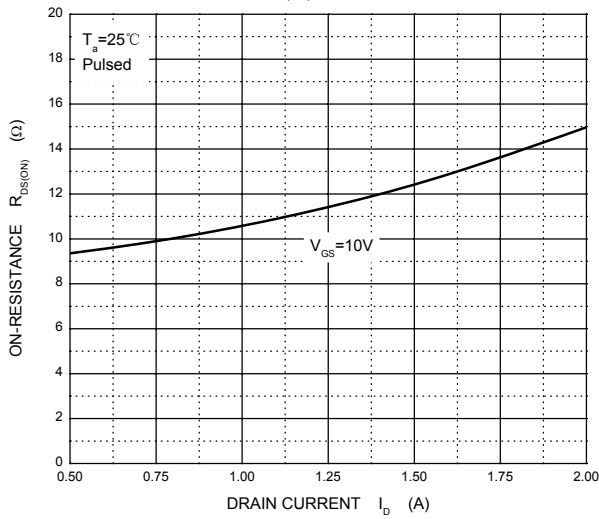
**Output Characteristics**



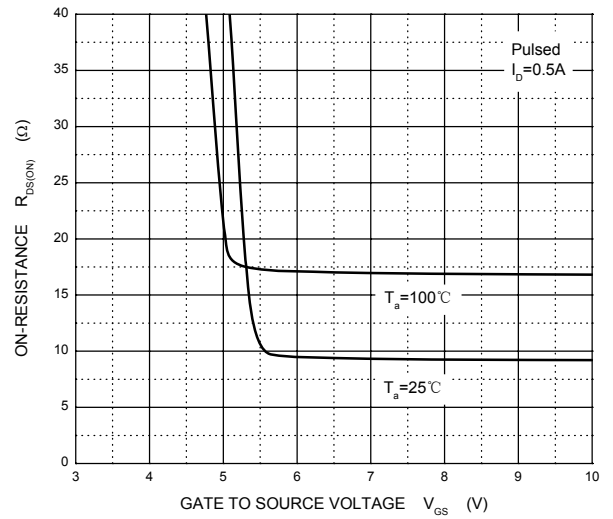
**Transfer Characteristics**



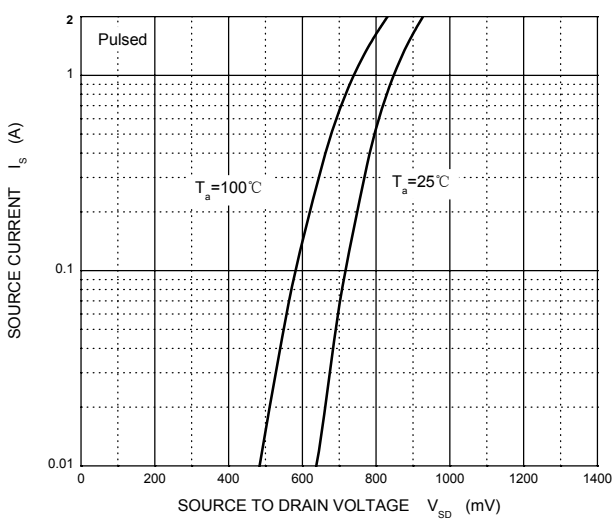
**$R_{DS(ON)}$  —  $I_D$**



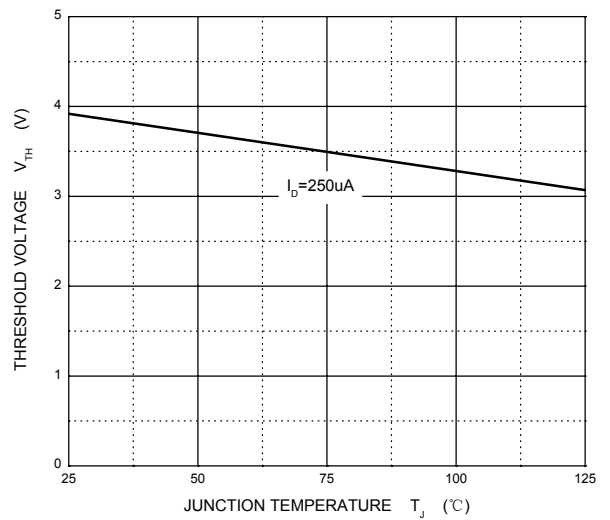
**$R_{DS(ON)}$  —  $V_{GS}$**



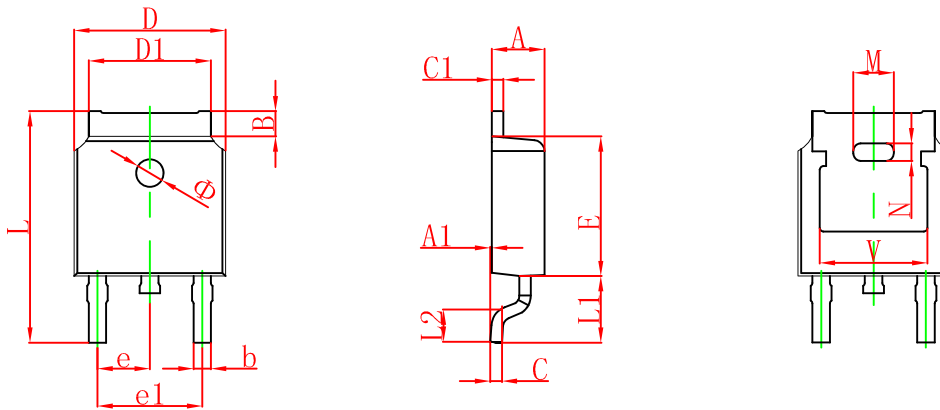
**$I_S$  —  $V_{SD}$**



**Threshold Voltage**

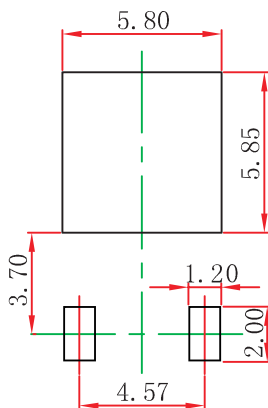


## TO-252-2L(4R) Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.380	0.087	0.094
A1	0.000	0.100	0.000	0.004
B	0.800	1.400	0.031	0.055
b	0.710	0.810	0.028	0.032
c	0.460	0.560	0.018	0.022
c1	0.460	0.560	0.018	0.022
D	6.500	6.700	0.256	0.264
D1	5.130	5.460	0.202	0.215
E	6.000	6.200	0.236	0.244
e	2.286 TYP.		0.090 TYP.	
e1	4.327	4.727	0.170	0.186
M	1.778REF.		0.070REF.	
N	0.762REF.		0.018REF.	
L	9.800	10.400	0.386	0.409
L1	2.9REF.		0.114REF.	
L2	1.400	1.700	0.055	0.067
V	4.830 REF.		0.190 REF.	
Φ	1.100	1.300	0.043	0.051

## TO-252-2L(4R) Suggested Pad Layout



### Note:

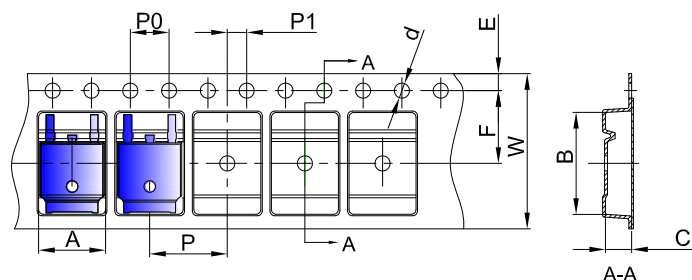
1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

### NOTICE

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.

# To-252(4R)-2L Tape and Reel

## TO-252 Embossed Carrier Tape

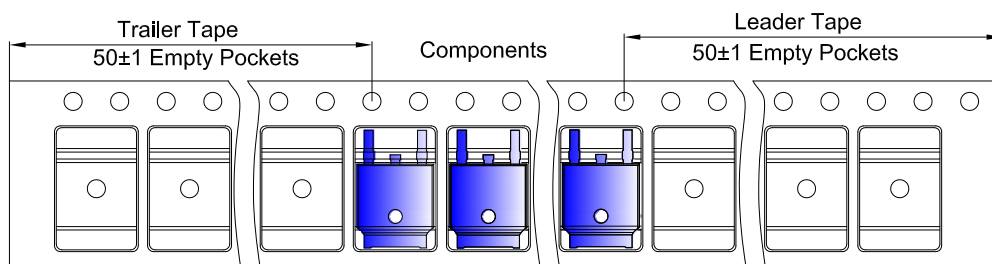


### Packaging Description:

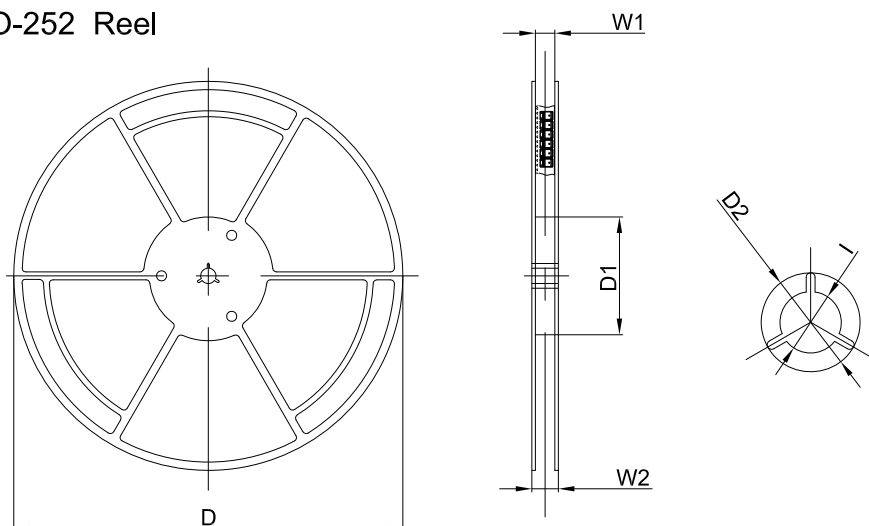
TO-252 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 25,00 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	Ø1.55	1.75	7.50	4.00	8.00	2.00	16.00

## TO-252 Tape Leader and Trailer



## TO-252 Reel



Dimensions are in millimeter						
Reel Option	D	D1	D2	W1	W2	I
13" Dia	330.00	100.00	Ø21.00	16.40	21.00	Ø13.00

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
2,500 pcs	13inch	2,500 pcs	340×336×29	25,000 pcs	353×346×365	