



JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

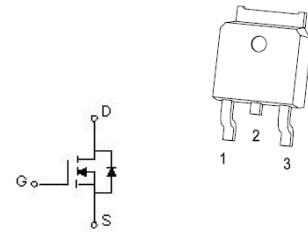
TO-252-2L Plastic-Encapsulate MOSFETS

CJU04N70B N-Channel Power MOSFET

DESCRIPTION

The CJU04N70B is a high voltage MOSFET and is designed to have better characteristics, such as fast switching time, low gate charge, low on-state resistance and high rugged avalanche. This high speed switching power MOSFET is usually used in power supplies, PWM motor controls, high efficient DC to DC converters and bridge circuits.

TO-252-2L



APPLICATIONS

- Power supplies
- PWM motor controls
- High efficient DC to DC converters and bridge circuits

MARKING



JCET LOGO

CJU04N70B= Part No.

XXX=Date Code

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	700	V
Gate-Source Voltage	V_{GS}	± 30	V
Continuous Drain Current	I_D	4.4	A
Pulsed Drain Current	I_{DM}	17.6	A
Single Pulsed Avalanche Energy	$E_{AS}^{(1)}$	250	mJ
Power Dissipation	P_D	1.25	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	100	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 ~+150	$^{\circ}\text{C}$
Lead Temperature for Soldering Purposes(1/8" from case for 10s)	T_L	260	$^{\circ}\text{C}$

(1). E_{AS} condition: $V_{DD}=50\text{V}$, $L=20\text{mH}$, $R_G=25\Omega$, Starting $T_J = 25^{\circ}\text{C}$

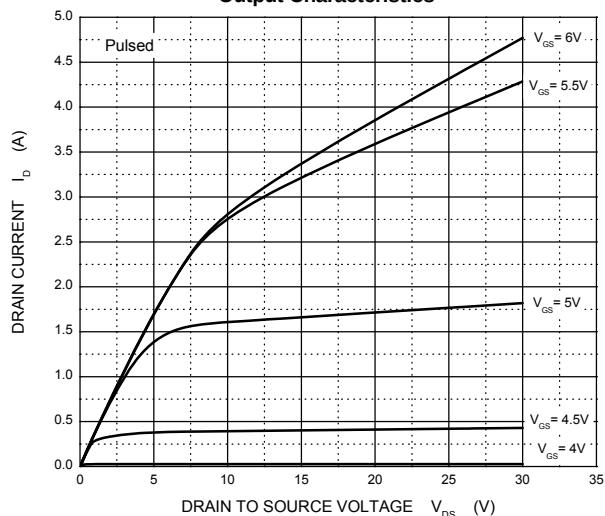
ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =250μA	700			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =700V, V _{GS} =0V			10	μA
Gate-body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±30V			±100	nA
On characteristics (note1)						
Gate-threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2		4	V
Static drain-source on-sate resistance	R _{DS(on)}	V _{GS} =10V, I _D =2.2A		2.4	2.8	Ω
Dynamic characteristics (note 2)						
Input capacitance	C _{iSS}	V _{DS} =25V, V _{GS} =0V, f =1MHz		520	670	pF
Output capacitance	C _{oSS}			70	90	
Reverse transfer capacitance	C _{rSS}			8	11	
Switching characteristics (note 1, 2)						
Total gate charge	Q _g	V _{DS} =560V, V _{GS} =10V, I _D =4.4A		60	80	nC
Gate-source charge	Q _{gs}			20		
Gate-drain charge	Q _{gd}			25		
Turn-on delay time	t _{d(on)}	V _{DD} =350V, I _D =4.4A, V _{GS} =10V, R _G =25Ω,		40	60	ns
Turn-on rise time	t _r			60	100	
Turn-off delay time	t _{d(off)}			115	175	
Turn-off fall time	t _f			70	110	
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(note1)	V _{SD}	V _{GS} =0V, I _S =4.4A			1.4	V
Continuous drain-source diode forward current	I _S				4.4	A
Pulsed drain-source diode forward current	I _{SM}				17.6	A

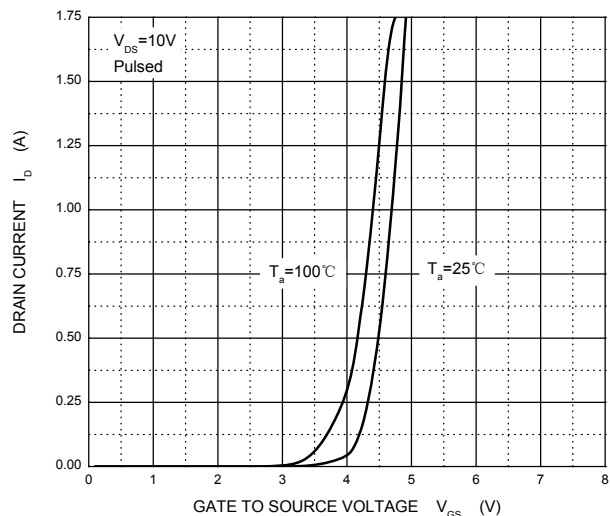
Notes:

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

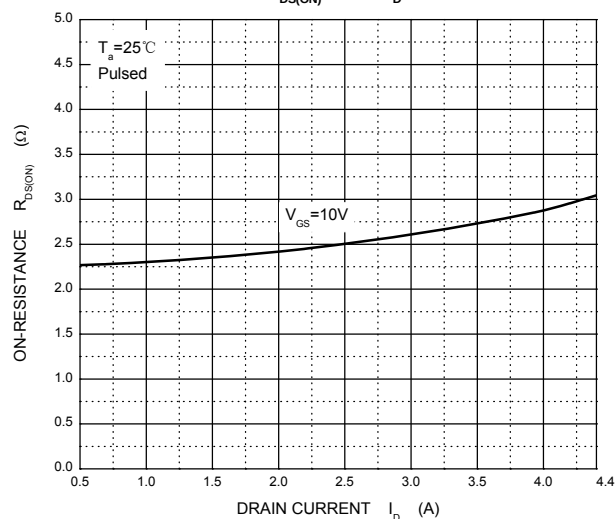
Output Characteristics



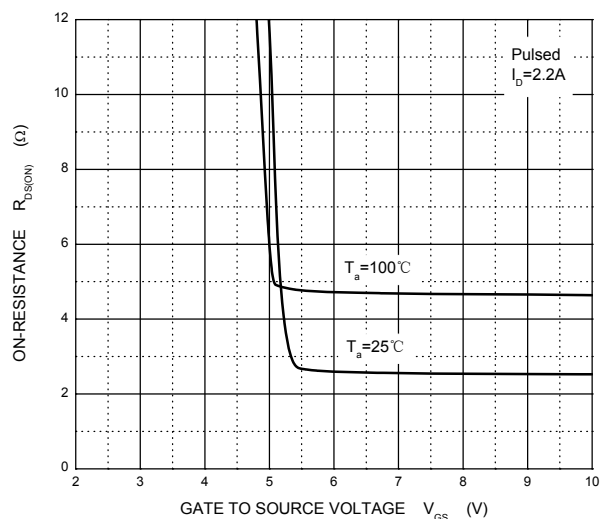
Transfer Characteristics



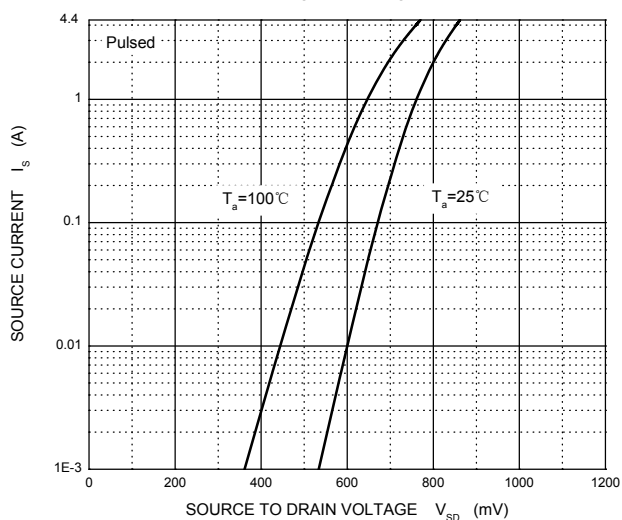
$R_{DS(ON)}$ — I_D



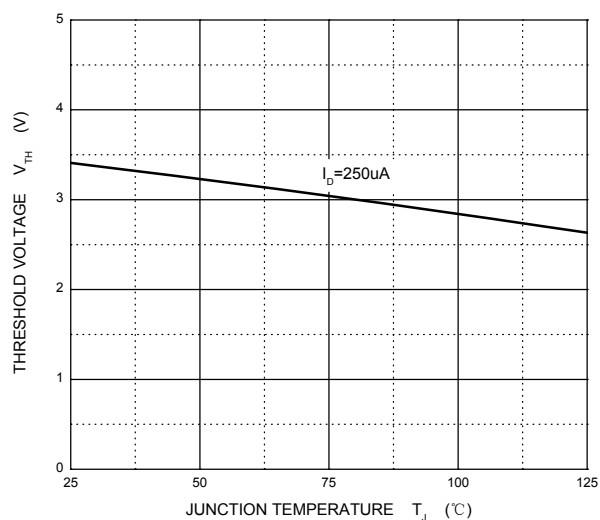
$R_{DS(ON)}$ — V_{GS}



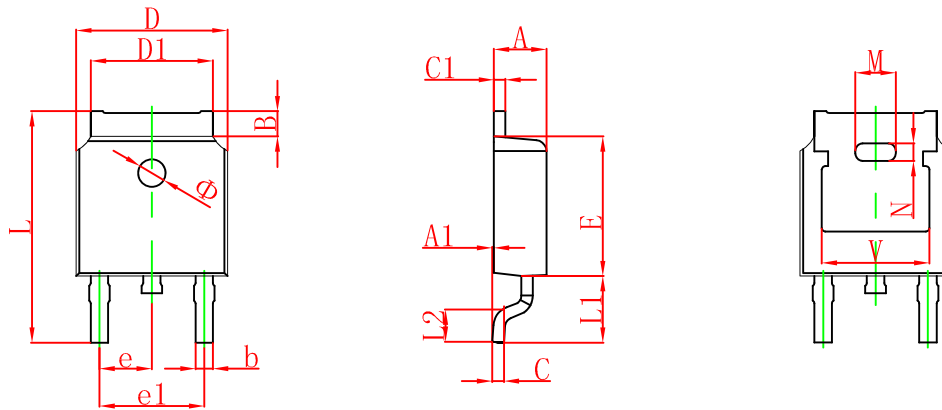
I_S — V_{SD}



Threshold Voltage

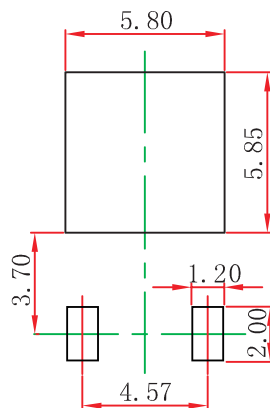


TO-252(4R)-2L Package Outline Dimensions



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	1.778 REF.		0.070 REF.	
N	0.762 REF.		0.018 REF.	
L	9.800	10.400	0.386	0.409
L1	2.9 REF.		0.114 REF.	
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(4R)-2L Suggested Pad Layout



Note:

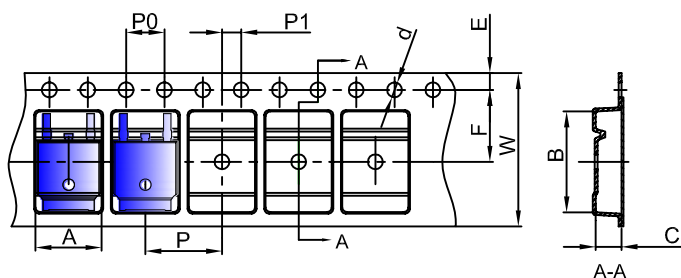
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

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 Tape and reel

TO-252 Embossed Carrier Tape

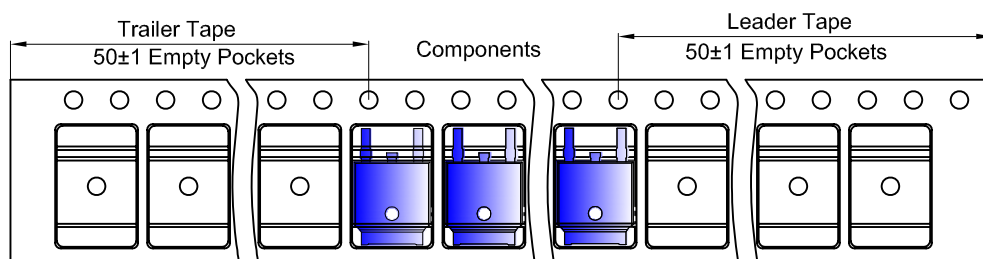


Packaging Description:

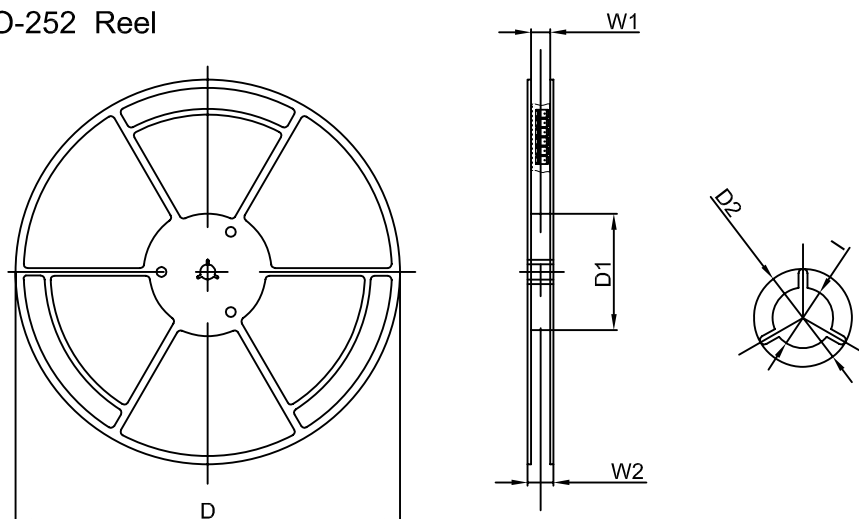
TO-252 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in 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
(Tolerance)	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+0.3/-0.1

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
Tolerance	+/-2	+/-1	+/-1	+/-1	+/-1	+/-1

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	14.04