

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

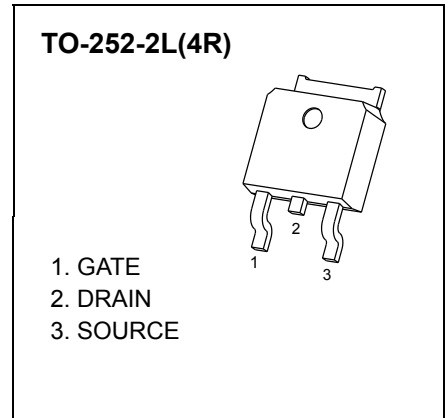
CJU05N60 N-CHANNEL POWER MOSFET

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
600V	2.5Ω@10V	4.5A

DESCRIPTION

This advanced high voltage MOSFET is designed to withstand high energy in the avalanche mode and switch efficiently. This new high energy device also offers a drain-to-source diode with fast recovery time.

Designed for high voltage, high speed switching applications such as power supplies, converters, power motor controls and bridge circuits.



FEATURES

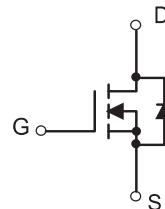
- Low $R_{DS(on)}$
- Lower Capacitances
- Lower Total Gate Charge
- Tighter V_{SD} Specifications
- Avalanche Energy Specified

MARKING



CJU05N60= Device code
Solid dot = Green molding compound device,
if none, the normal device
XXX=Date Code

EQUIVALENT CIRCUIT



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	600	V
Gate-Source Voltage	V_{GS}	±30	
Continuous Drain Current	I_D	4.5	A
Single Pulsed Avalanche Energy (note1)	E_{AS}	250	mJ
Power Dissipation (note 2, $T_a=25^\circ\text{C}$)	P_D	1.25	W
Maximum Power Dissipation (note 3, $T_c=25^\circ\text{C}$)		120	
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}	-50 ~+150	

MOSFET ELECTRICAL CHARACTERISTICS

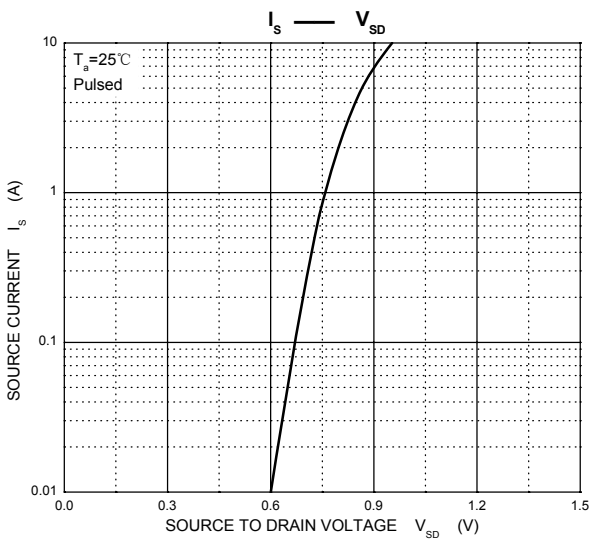
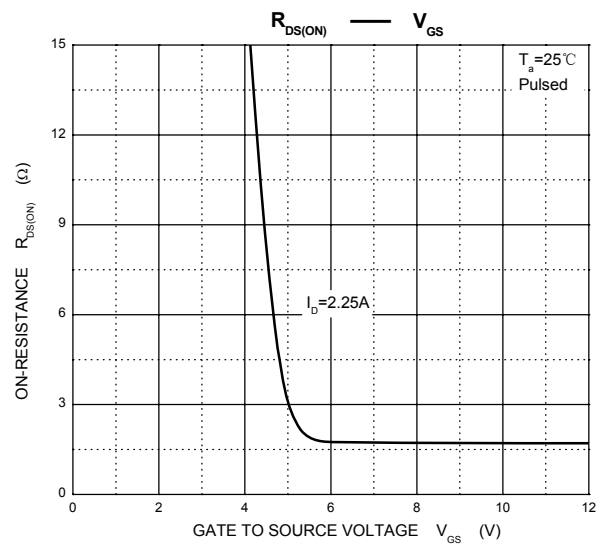
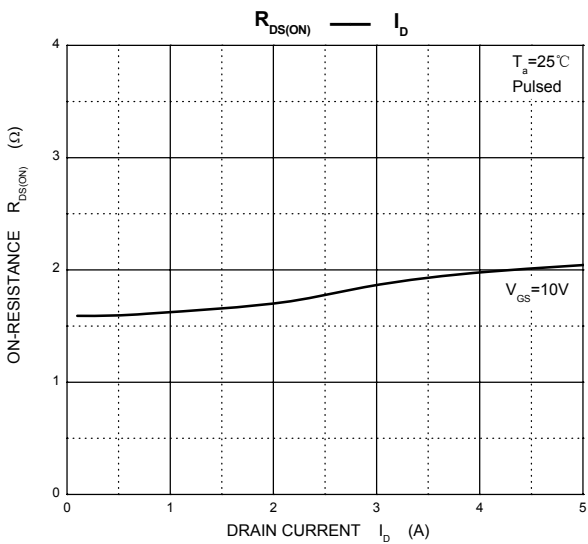
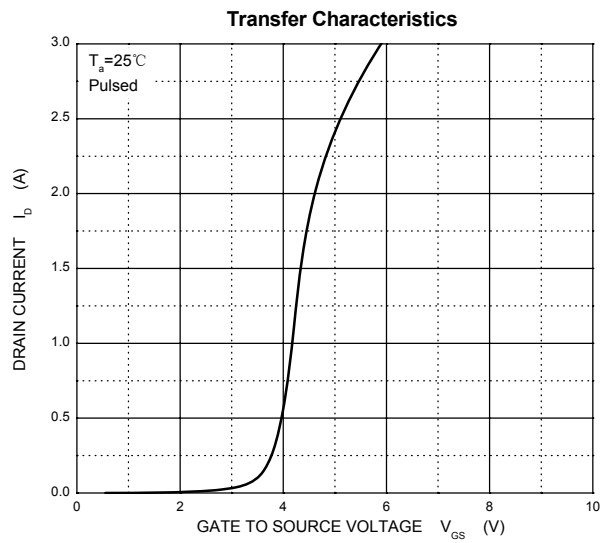
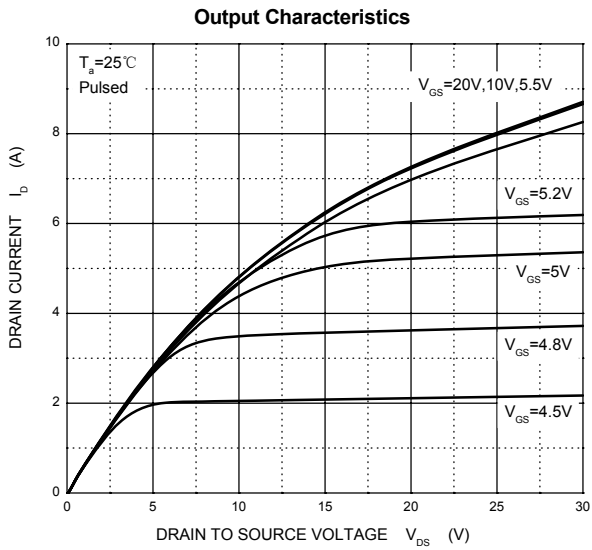
$T_a=25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	600			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.0	3.5	4.0	
Gate-Body Leakage Current (note 4)	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 30V$			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 600V, V_{GS} = 0V$			1	μA
Drain-Source On-State Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 2.25A$		1.8	2.5	Ω
Forward transconductance (note 4)	g_{FS}	$V_{DS} = 40V, I_D = 2.25A$	2.9			S
Input Capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V,$ $f = 1MHz$			670	pF
Output Capacitance	C_{oss}				72	
Reverse Transfer Capacitance	C_{rss}				8.5	
Turn-On Delay Time (note 4)	$T_{d(on)}$	$V_{DD} = 300V, I_D = 4.5A,$ $R_G = 25\Omega$			30	ns
Rise Time (note 4)	t_r				90	
Turn-Off Delay Time (note 4)	$T_{d(off)}$				85	
Fall Time (note 4)	t_f				100	
Forward on Voltage (note 4)	V_{SD}	$V_{GS} = 0V, I_S = 4.5A$			1.4	V

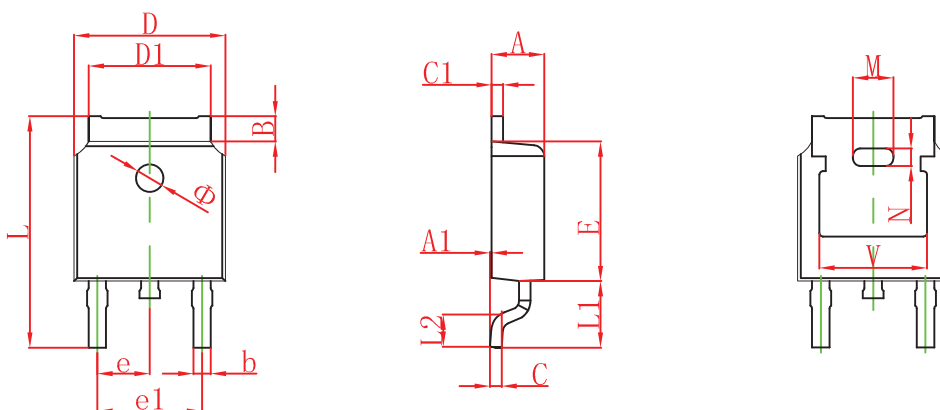
Notes:

1. E_{AS} condition: $T_j = 25^\circ\text{C}$, $V_{DD} = 50V, R_G = 25\Omega, L = 16mH, I_{AS} = 5A$.
2. This test is performed with no heat sink at $T_a = 25^\circ\text{C}$.
3. This test is performed with infinite heat sink at $T_c = 25^\circ\text{C}$.
4. Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

Typical Characteristics

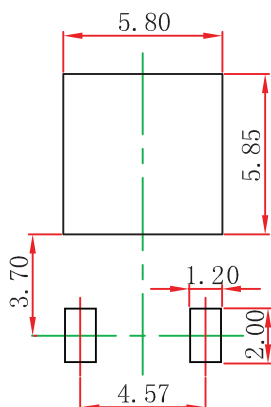


TO-252-2L(4R) Package Outline Dimensions



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:

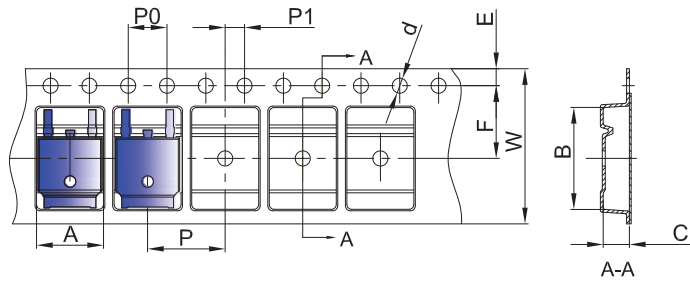
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

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

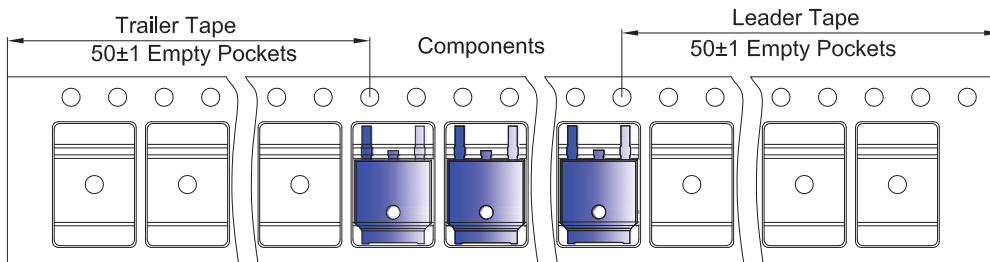


Packaging Description:

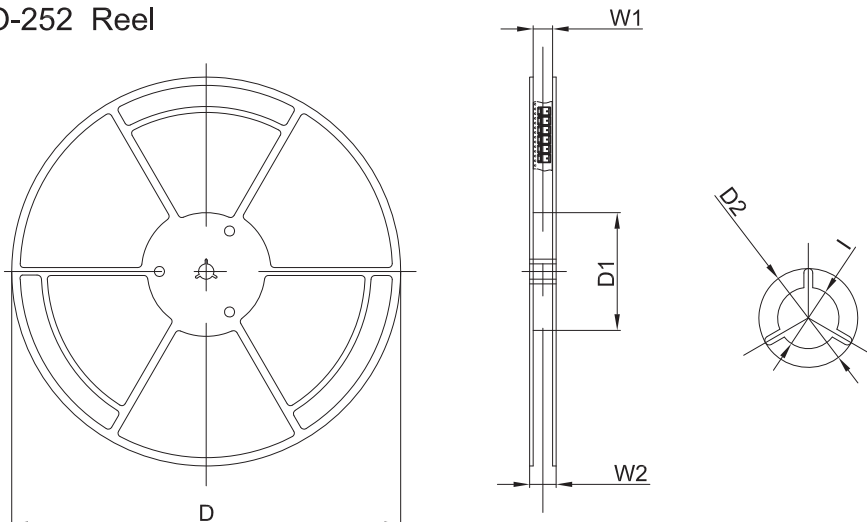
TO-252 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in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