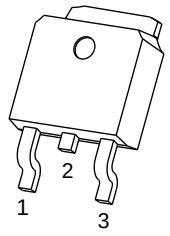
TO-252-2L Plastic-Encapsulate MOSFETS

CJU40P04A P-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$TYP	I_D
-40V	10.5mΩ@10V	-40A
	14mΩ@4.5V	

TO-252-2L



1. GATE
2. DRAIN
3. SOURCE

GENERAL DESCRIPTION

The CJU40P04A 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.

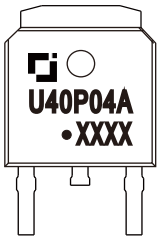
FEATURE

- Advanced trench process technology
- Reliable and rugged
- High density cell design for ultra low On-Resistance

APPLICATION

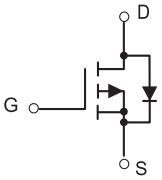
- Power management in notebook computer
- Portable equipment and battery powered systems

MARKING



U40P04A = 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}	-40	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D ①	-40	A
Pulsed Drain Current	I_{DM} ②	-160	A
Single Pulsed Avalanche Energy	E_{AS} ③	240	mJ
Power Dissipation	P_D ①	74	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$ ⑥	100	℃/W
Thermal Resistance from Junction to Case	$R_{\theta JC}$ ①	1.67	℃/W
Operating Junction and Storage Temperature Range	T_J ,T_{stg}	-55~+150	℃

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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		-40			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-32V, 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 characteristics ④							
Gate-threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA		-1.0	-1.5	-2.5	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-10A			10.5	15	mΩ
	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-8A			14	22	mΩ
Dynamic characteristics ④⑤							
Input capacitance	C_{iss}	V_{DS} =-25V,V_{GS} =0V, f =1MHz			2800	4600	pF
Output capacitance	C_{oss}				250	480	
Reverse transfer capacitance	C_{rss}				150	300	
Gate resistance	Rg	f =1MHz			7.0		Ω
Switching characteristics ④⑤							
Total gate charge	Q_g	V_{DS}=-32V, V_{GS}=-4.5V, I_D=-10A			23	46	nC
Gate-source charge	Q_{gs}				9.0	18	
Gate-drain charge	Q_{gd}				8.8	18	
Turn-on delay time	$t_{d(on)}$	V_{DD}=-20V,V_{GS}=-10V, R_G=6Ω, I_D=-1A			24	48	ns
Turn-on rise time	t_r				12	24	
Turn-off delay time	$t_{d(off)}$				140	280	
Turn-off fall time	t_f				48	96	
Drain-Source Diode Characteristics							
Drain-source diode forward voltage	V_{SD} ④	V_{GS} =0V, I_S=-1A				-1.2	V
Continuous drain-source diode forward current	I_S ①					-40	A
Pulsed drain-source diode forward current	I_{SM} ②					-160	A

Notes:

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

2.P_W≤10μs, Duty cycle≤1%.

3.EAS condition: V_{DD}=-20V,V_{GS}=-10V, L=0.5mH, R_g=25Ω Starting T_J = 25°℃.

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

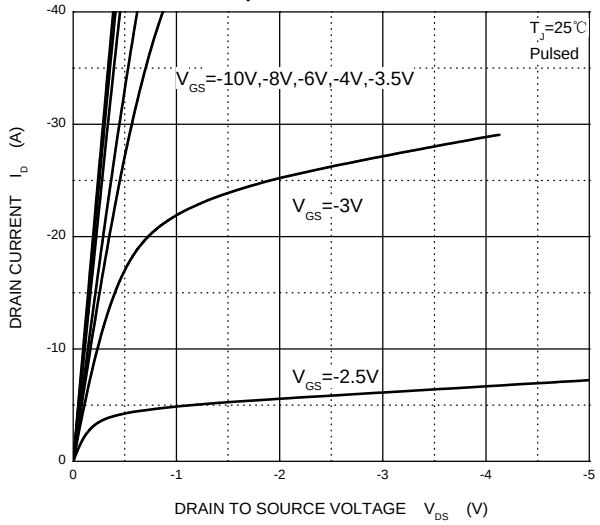
5.Guaranteed by design, not subject to production.

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℃.

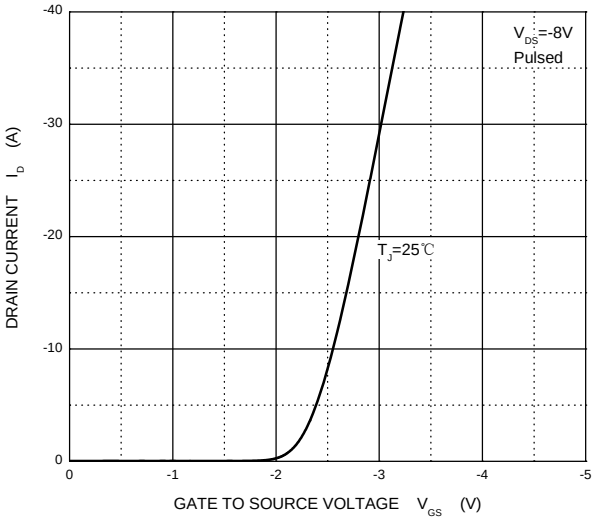
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Typical Characteristics

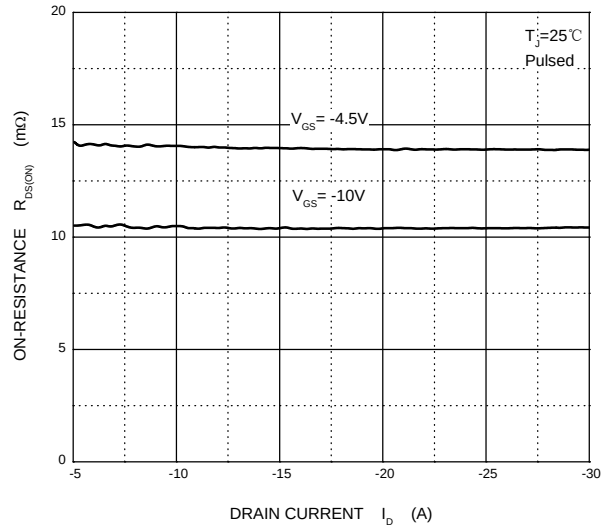
Output Characteristics



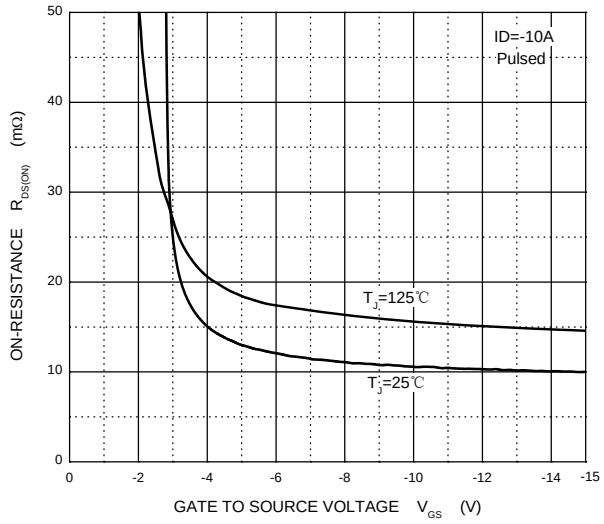
Transfer Characteristics



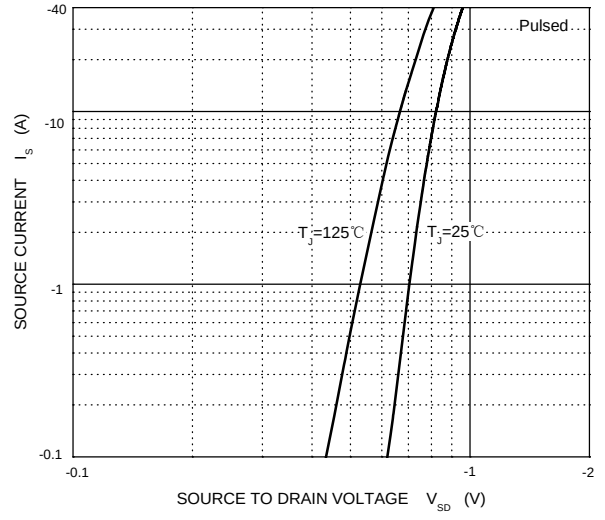
$R_{DS(ON)}$ —— I_D



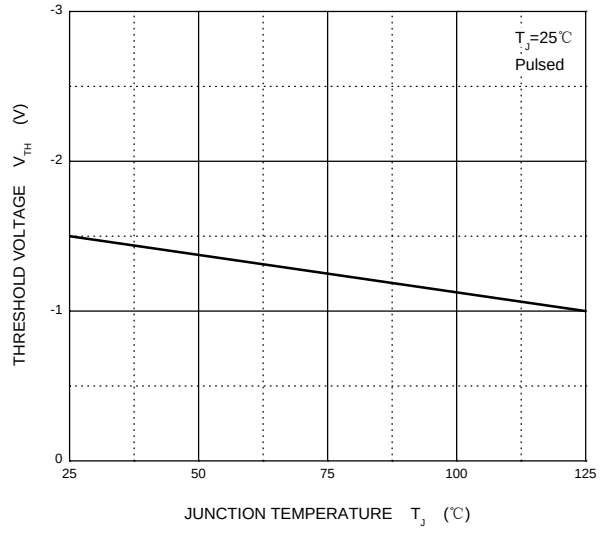
$R_{DS(ON)}$—— V_{GS}



I_S —— V_{SD}

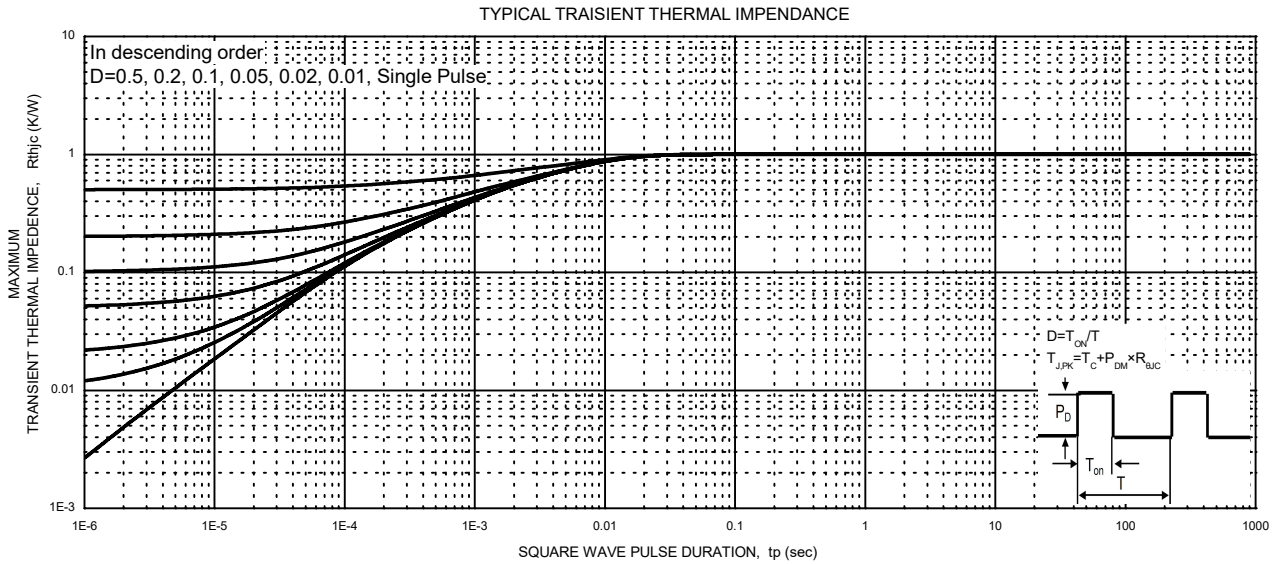


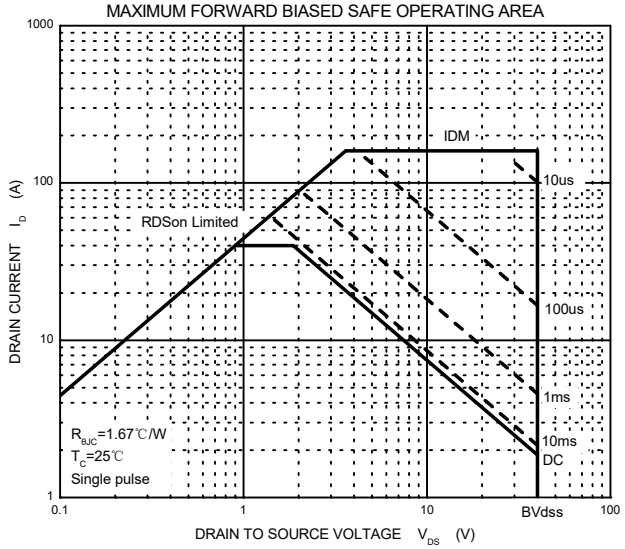
Threshold Voltage



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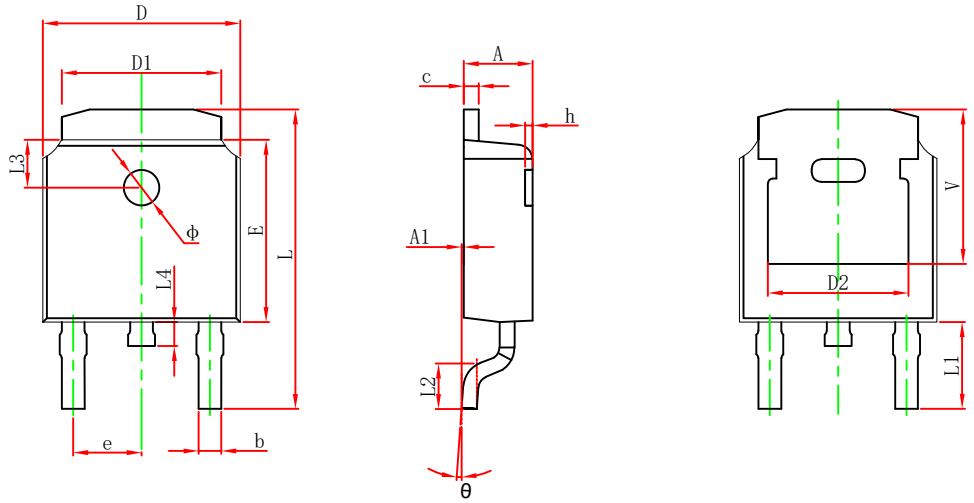
Typical Characteristics





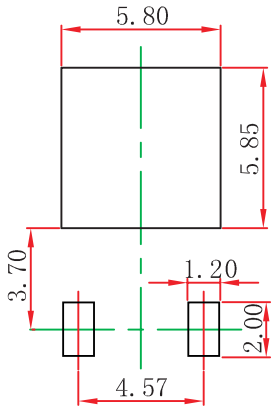
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TO-252-2L Package Outline Dimensions



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.

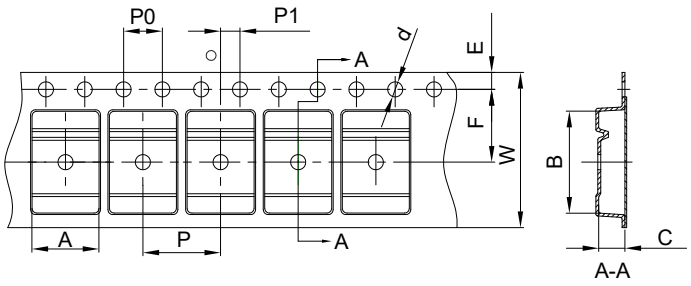
NOTICE

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TO-252-2L Tape and Reel

TO-252-2L Embossed Carrier Tabe

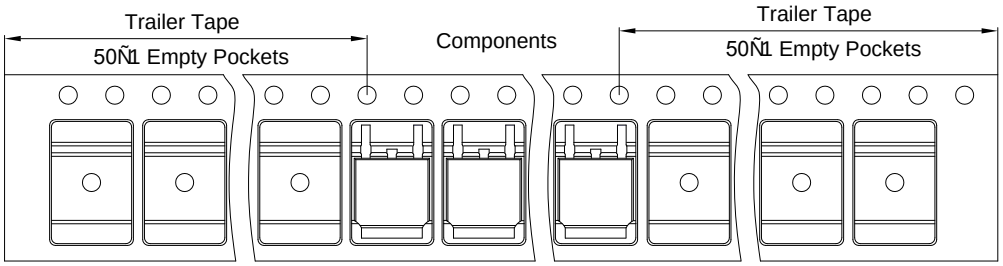


Packaging Description:

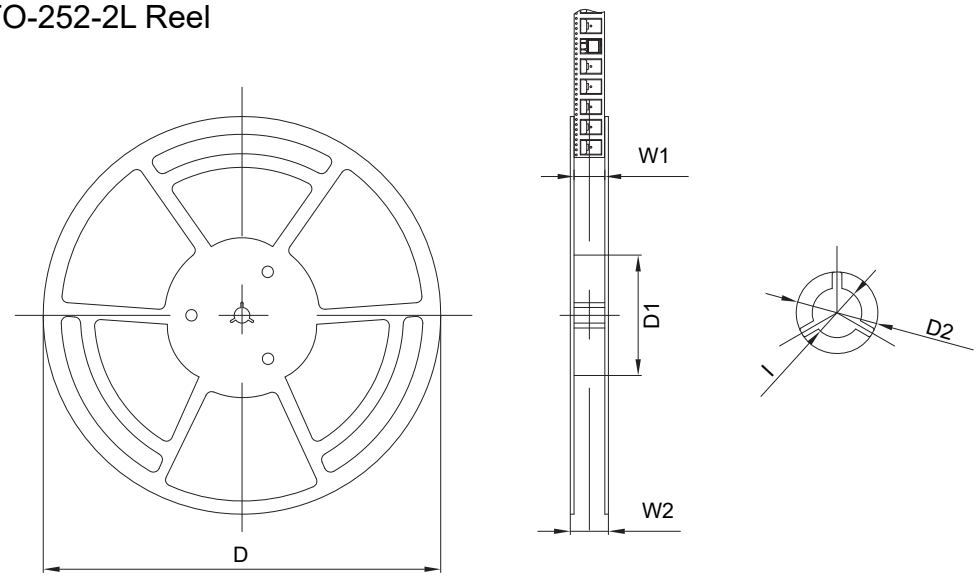
TO-252-2L parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Hear Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts 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

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