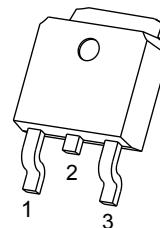


**TO-252-2L Plastic-Encapsulate MOSFETS****CJU30P03A**

P-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$ TYP	I_D
-30V	13mΩ@-10V	-30A
	19mΩ@-4.5V	

TO-252-2L

1. GATE
2. DRAIN
3. SOURCE

General Description

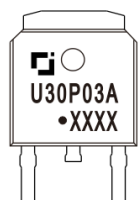
The CJU30P03A uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge. It can be used in a wide variety of applications.

FEATURES

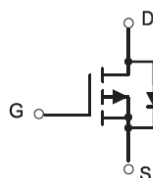
- High density cell design for ultra low $R_{DS(on)}$
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high E_{AS}
- Special process technology for high ESD capability
- Excellent package for good heat dissipation

APPLICATIONS

- Hard switched and high frequency circuits
- Uninterruptible power supply
- Power switching application

MARKING

U30P03A= Device code
Solid dot = Green molding compound device,
if none, the normal device
XXXX=Code

EQUIVALENT CIRCUIT**MAXIMUM RATINGS ($T_J=25^{\circ}\text{C}$ unless otherwise noted)**

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D ①	-30	A
Pulsed Drain Current	I_{DM} ①②	-120	A
Single Pulsed Avalanche Energy	E_{AS} ③	100	mJ
Power Dissipation	P_D ①	57	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$ ⑤	100	$^{\circ}\text{C/W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$ ①	2.2	$^{\circ}\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	$^{\circ}\text{C}$

MOSFET ELECTRICAL CHARACTERISTICS

$T_J=25^{\circ}\text{C}$ 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		-30	-	-	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =-30V, 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	-2.0	V
Static drain-source on-sate resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-20A			13	20	mΩ
		V _{GS} =-4.5V, I _D =-15A			19	27	mΩ
Dynamic characteristics							
Input capacitance	C _{iss}	V _{DS} =-15V,V _{GS} =0V, f =1MHz		-	1970	-	pF
Output capacitance	C _{oss}			-	203	-	
Reverse transfer capacitance	C _{rss}			-	191	-	
Gate resistance	R _g	f =1MHz		-	10	-	Ω
Switching characteristics							
Total gate charge	Q _g	V _{GS} =-4.5V,V _{DD} =-15V,I _D =-10A		-	19.7	-	nC
Total gate charge	Q _g	V _{GS} =-10V, V _{DD} =-15V, I _D =-10A		-	40	-	
Gate-source charge	Q _{gs}			-	6.1	-	
Gate-drain charge	Q _{gd}			-	8.5	-	
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 _S ①			-	-	-30	A
Pulsed drain-source diode forward current	I _{SM} ①②			-	-	-120	A

Notes:

1. $T_C = 25^{\circ}\text{C}$.

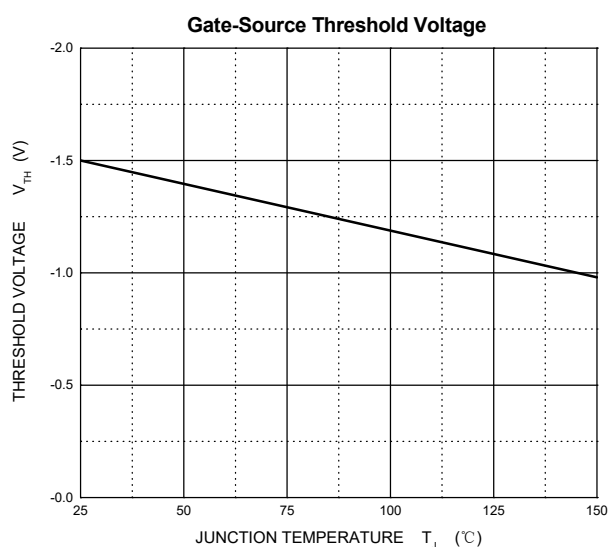
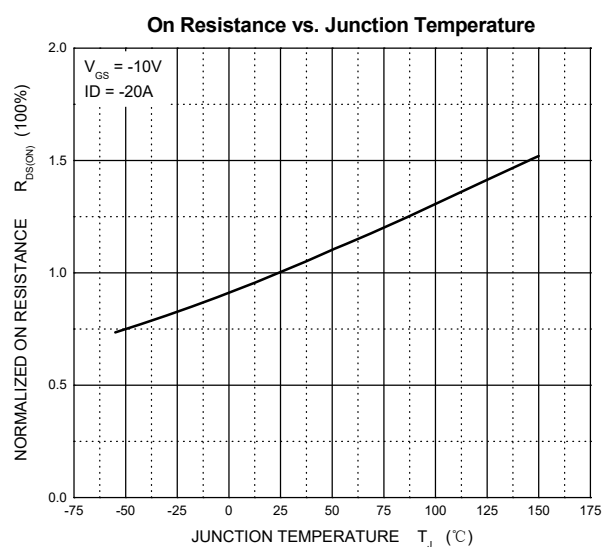
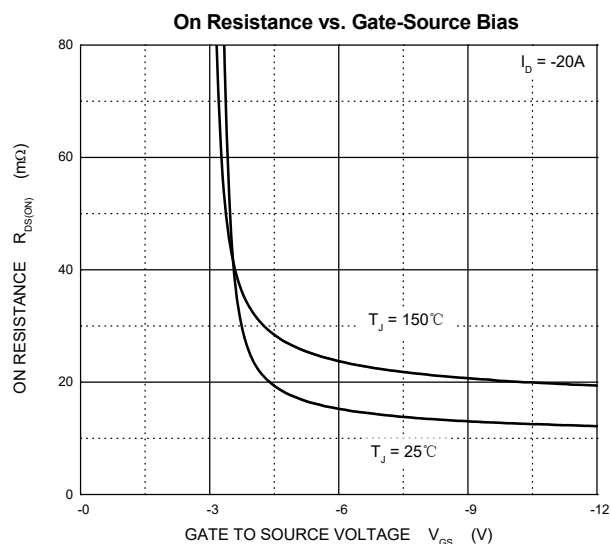
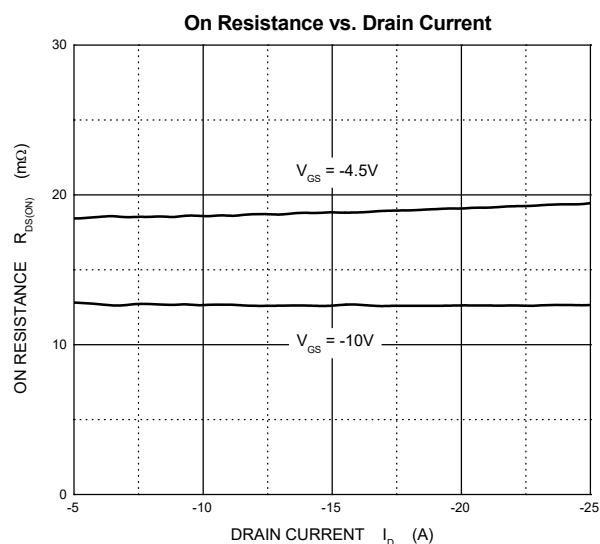
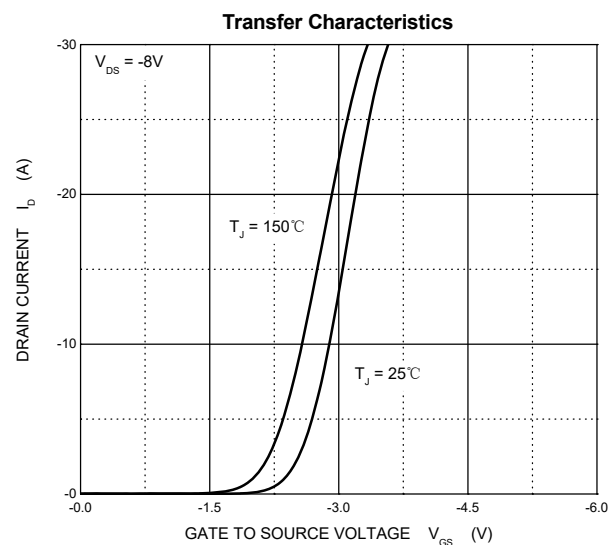
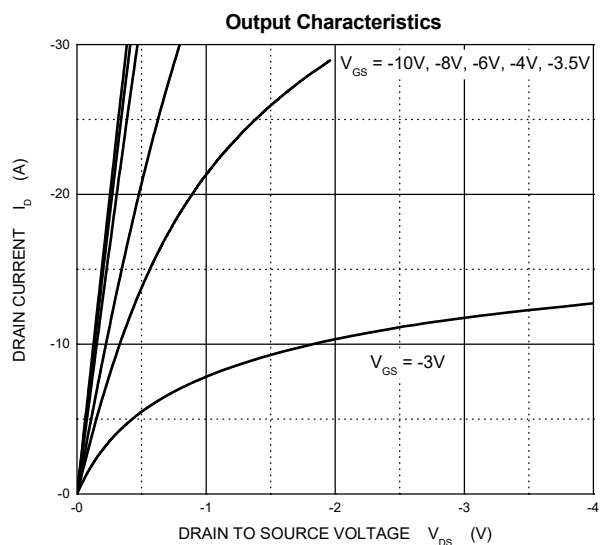
2. Limited only by maximum temperature allowed.

3. $V_{DD} = -15V, V_{GS} = -10V, L = 0.5\text{mH}, R_g = 25\Omega$ Starting $T_J = 25^{\circ}\text{C}$.

4. Pulse Test : Pulse Width $\leq 380\mu s$, duty cycle $\leq 2\%$.

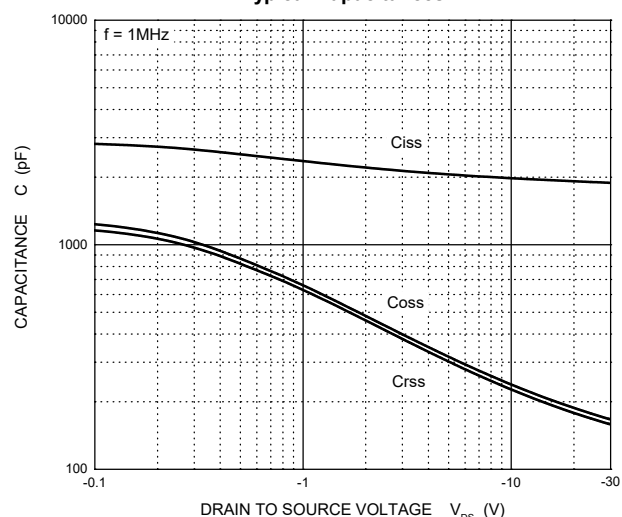
5. Device mounted on 1 in² FR-4 board with 2oz. single-sided Copper, in a still air environment with $T_A = 25^{\circ}\text{C}$.

Typical Characteristics ($T_J = 25^\circ\text{C}$, unless otherwise specified)

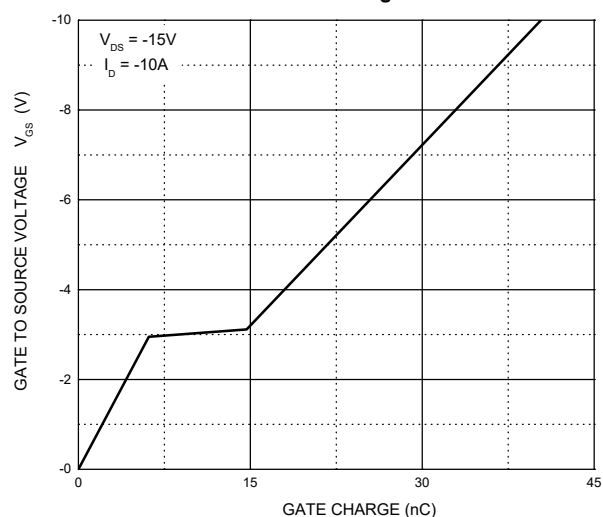


Typical Characteristics ($T_J = 25^\circ\text{C}$, unless otherwise specified)

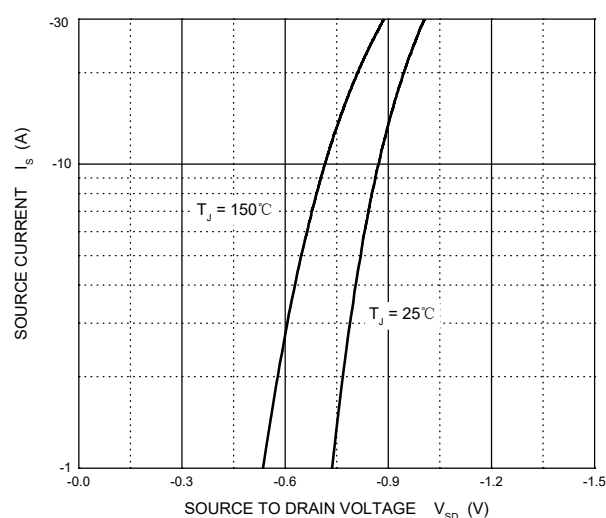
Typical Capacitances



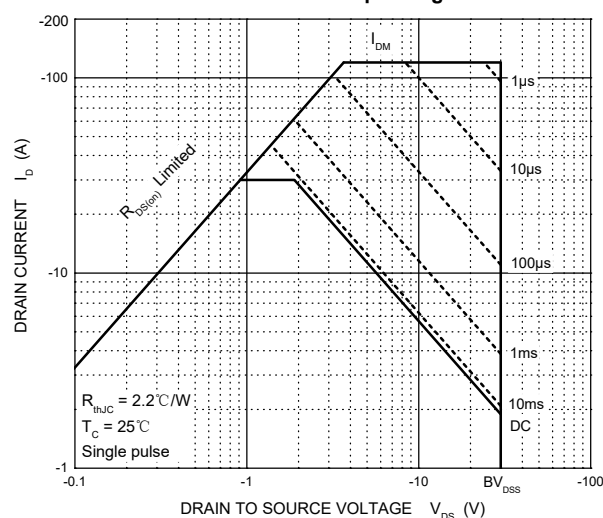
Gate Charge



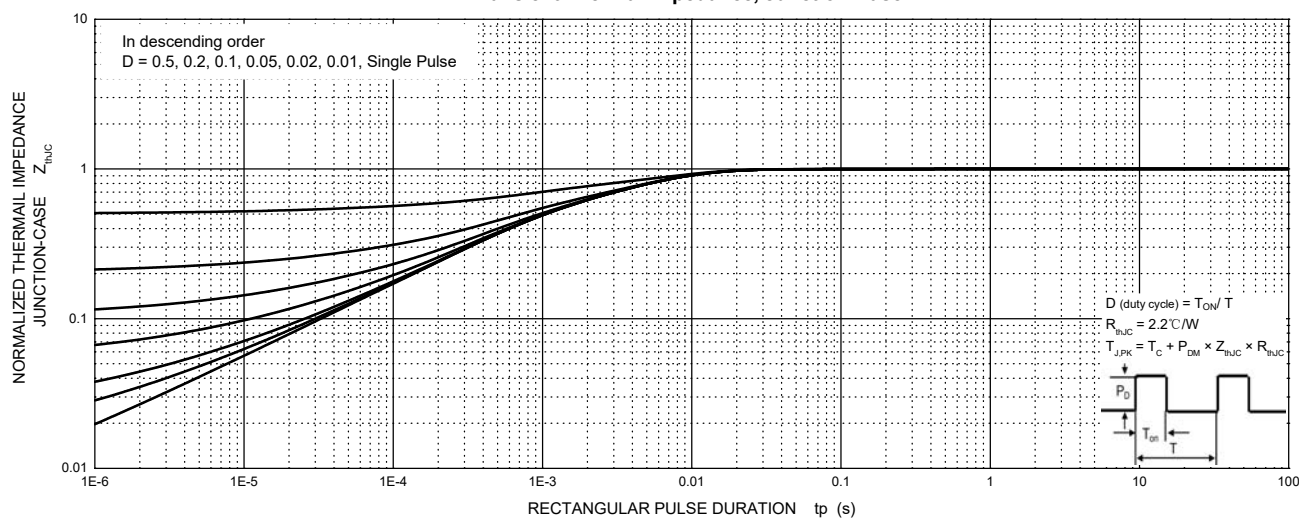
Source-Drain Diode Forward Characteristics



Maximum Safe Operating Area

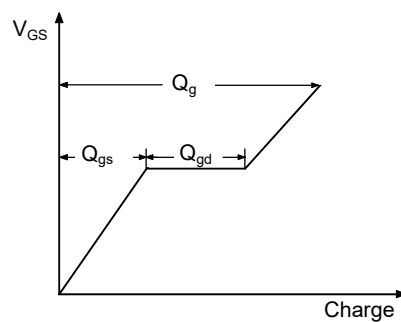
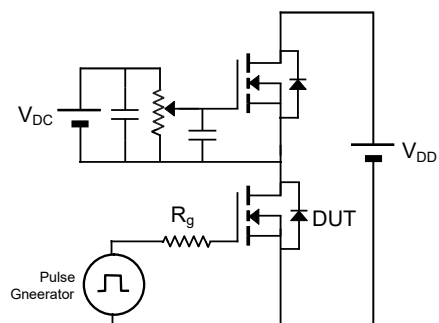


Transient Thermal Impedance, Junction-Case

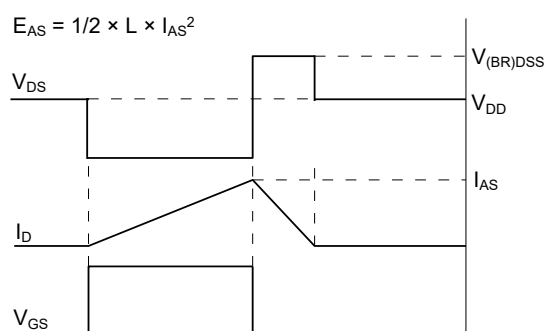
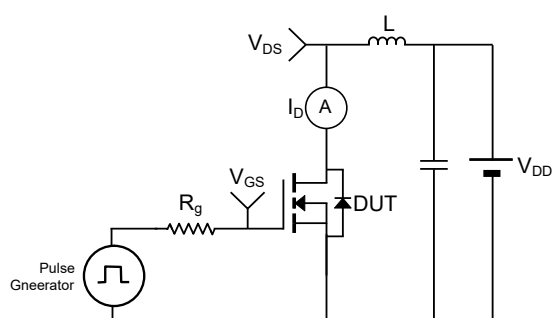


TEST CIRCUIT AND WAVEFORMS

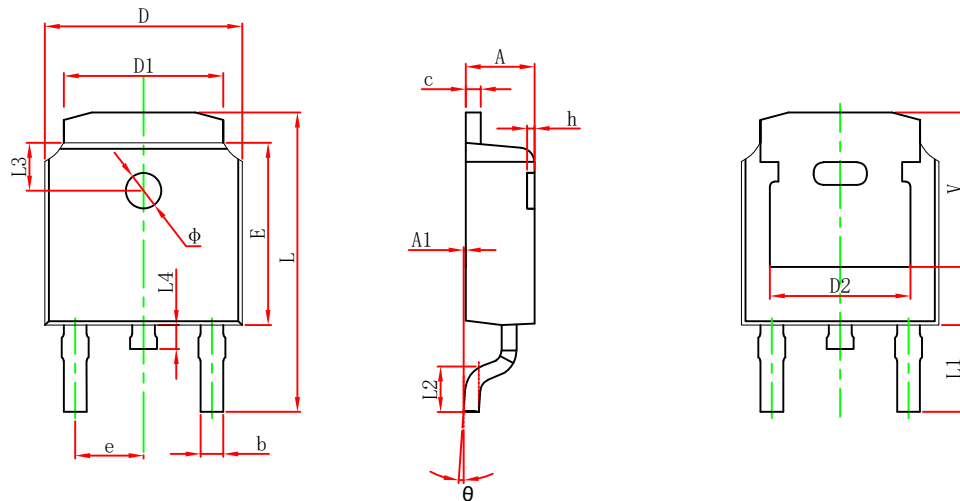
Gate Charge



Un-clamped Inductive Load Switching

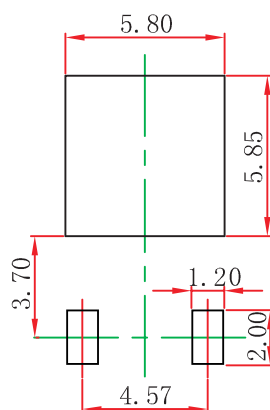


TO-252-2L Package Outline Dimensions



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:

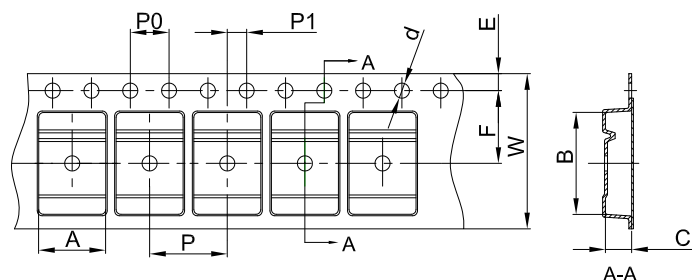
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

NOTICE

JSCJ reserves the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JSCJ does not assume any liability arising out of the application or use of any product described herein.

TO-252-2L Tape and Reel

TO-252 Embossed Carrier Tape

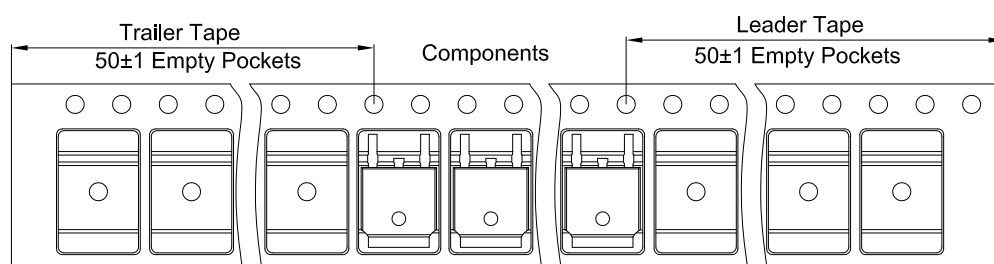


Packaging Description:

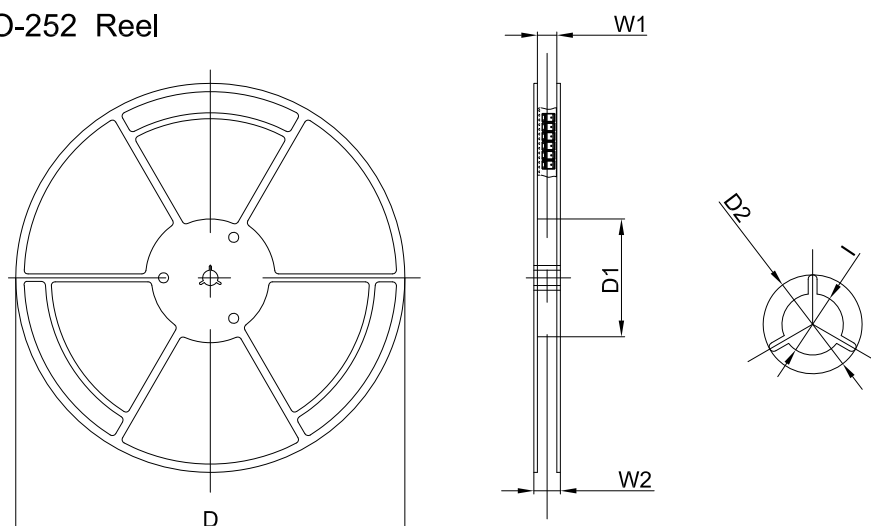
TO-252 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in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