LX252T30P100
TO-252-2L Plastic-Encapsulate MOSFETS

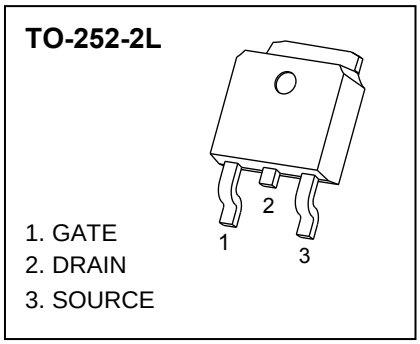
GENERAL DESCRIPTION

The LX252T30P100 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.

P-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)}$ TYP	I_D
-100V	38mΩ@-10V	-30A
	41mΩ@-4.5V	

TO-252-2L



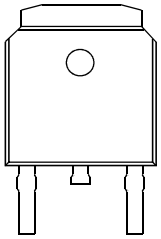
FEATURE

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

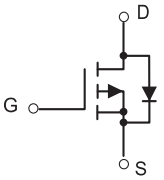
APPLICATION

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

MARKING：



EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D ①	-30	A
Pulsed Drain Current	I_{DM} ②	-120	A
Single Pulsed Avalanche Energy	E_{AS} ③	240	mJ
Power Dissipation	P_D ①	108	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$ ⑥	100	℃/W
Thermal Resistance from Junction to Case	$R_{\theta JC}$ ①	1.15	℃/W
Junction Temperature and Storage Temperature Range	TJ Tstg	-55~+150	℃

MOSFET ELECTRICAL CHARACTERISTICS

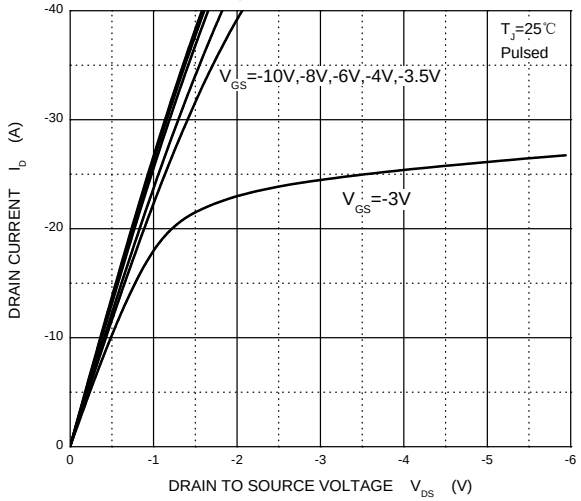
Ta=25 ℃ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)\ DSS}$	V_{GS} = 0V, I_D =-250μA	-100			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-80V, V_{GS} =0V, T_J =25℃			-1.0	μA
		V_{DS} =-80V, V_{GS} =0V, 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	-1.5	-2.5	V
Static drain-source on-sate resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-15A		38	45	mΩ
	$R_{DS(on)}$	V_{GS} =-4.5V, I_D =-15A		41	55	mΩ
Dynamic characteristics ④⑤						
Input capacitance	C_{iss}	V_{DS} =-20V,V_{GS} =0V, f =1MHz		6315	12630	pF
Output capacitance	C_{oss}			220	440	
Reverse transfer capacitance	C_{rss}			50	100	
Gate resistance	R_g	f =1MHz		5.7		Ω
Switching characteristics ④⑤						
Total gate charge	Q_g	V_{DS}=-20V, V_{GS}=-10V, I_D=-12A		98	196	nC
Gate-source charge	Q_{gs}			16.2	32	
Gate-drain charge	Q_{gd}			13.8	28	
Turn-on delay time	$t_{d(on)}$	V_{DD} =-20V,V_{GS}=-10V, R_G=3Ω, I_D=-20A		10		ns
Turn-on rise time	t_r			18		
Turn-off delay time	$t_{d(off)}$			38		
Turn-off fall time	t_f			24		
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} ②				-120	A

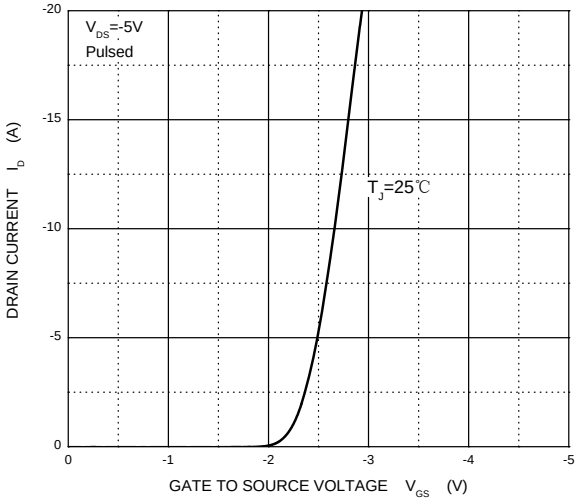
Notes:
1.TC=25℃ Limited only by maximum temperature allowed.
2.PW≤10μs, Duty cycle≤1%.
3.EAS condition: VDD=-50V,VGS=-10V, L=0.5mH, Rg=25Ω Starting TJ = 25°℃.
4.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.
5.Guaranteed by design, not subject to production.
6.The value of RθJA is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with Ta=25℃.

Typical Characteristics

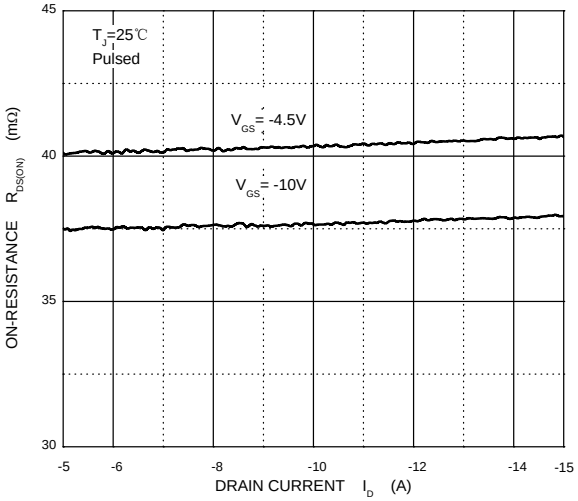
Output Characteristics



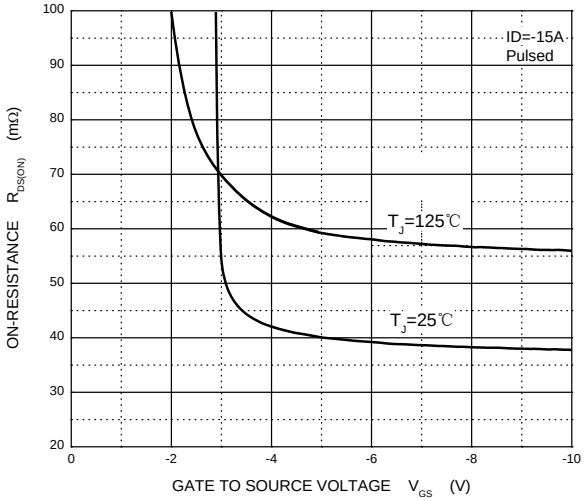
Transfer Characteristics



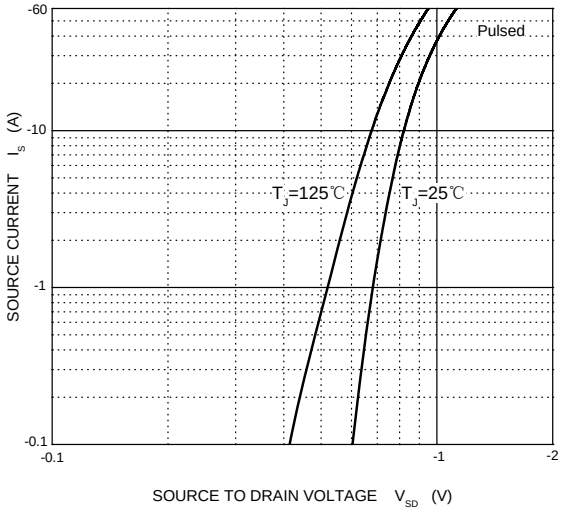
$R_{DS(ON)}$ —— I_D



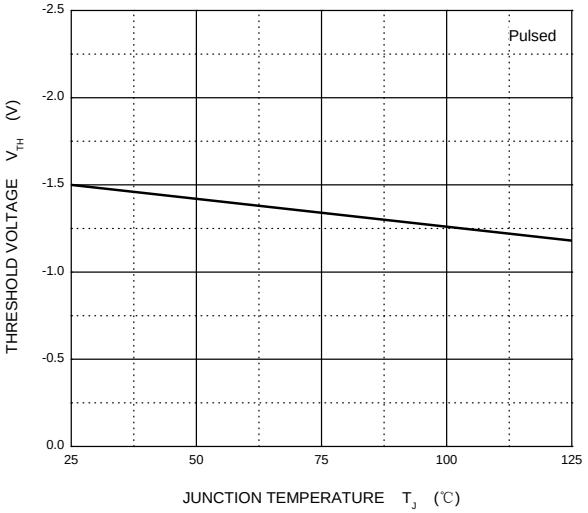
$R_{DS(ON)}$ —— V_{GS}



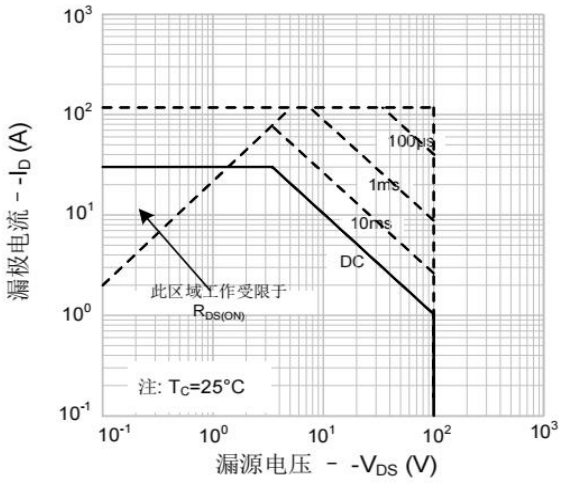
I_S —— V_{SD}



Threshold Voltage

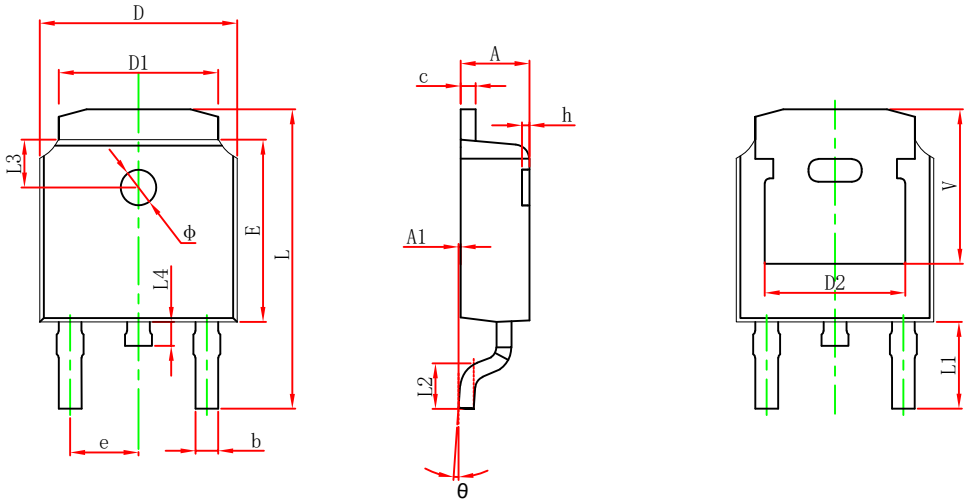


Typical Characteristics



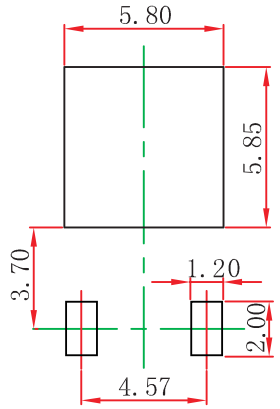
SOA

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.	

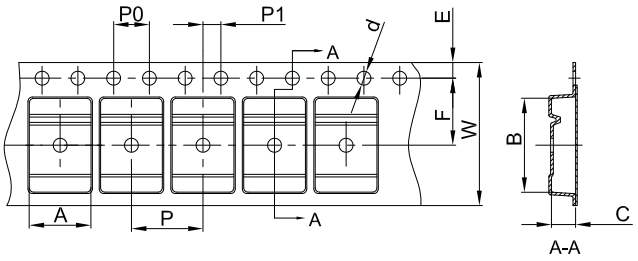
TO-252-2L Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

TO-252-2L Tape and Reel

TO-252 Embossed Carrier Tape

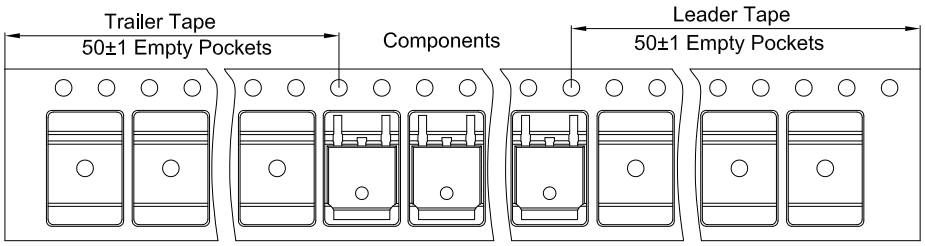


Packaging Description:

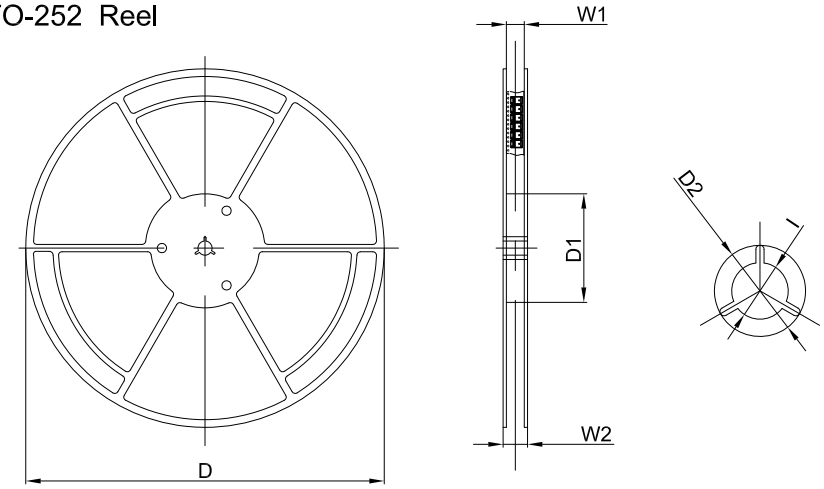
TO-252 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in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