

- ★ 100% EAS Guaranteed
- ★ Green Device Available
- ★ Super Low Gate Charge
- ★ Excellent CdV/dt effect decline
- ★ Advanced high cell density Trench technology

## Product Summary



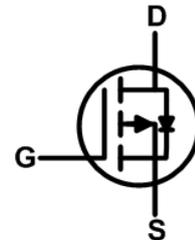
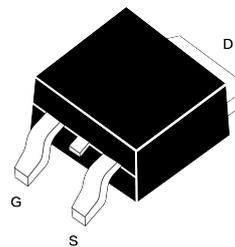
BVDSS	RDSON	ID
-60V	30mΩ	-30A

## Description

The JH30P06 is the high cell density trenched P-ch MOSFETs, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications.

The JH30P06 meet the RoHS and Green Product requirement, 100% EAS guaranteed with full function reliability approved.

## TO-252 Pin Configuration



**Table 1. Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise noted)**

Symbol	Parameter	Limit	Unit
V <sub>DS</sub>	Drain-Source Voltage (V <sub>GS</sub> =0V)	-60	V
V <sub>GS</sub>	Gate-Source Voltage (V <sub>DS</sub> =0V)	±20	V
I <sub>D</sub>	Drain Current-Continuous(T <sub>C</sub> =25°C)	-30	A
	Drain Current-Continuous(T <sub>C</sub> =100°C)	-25.5	A
I <sub>DM (pluse)</sub>	Drain Current-Continuous@ Current-Pulsed (Note 1)	-144	A
P <sub>D</sub>	Maximum Power Dissipation(T <sub>C</sub> =25°C)	79	W
	Maximum Power Dissipation(T <sub>C</sub> =100°C)	39.5	W
E <sub>AS</sub>	Avalanche energy (Note 2)	196	mJ
T <sub>J</sub> , T <sub>STG</sub>	Operating Junction and Storage Temperature Range	-55 To 175	°C

**Table 2. Thermal Characteristic**

Symbol	Parameter	Typ	Max	Unit
R <sub>θJC</sub>	Thermal Resistance, Junction-to-Case		1.9	°C/W

**Table 3. Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)**

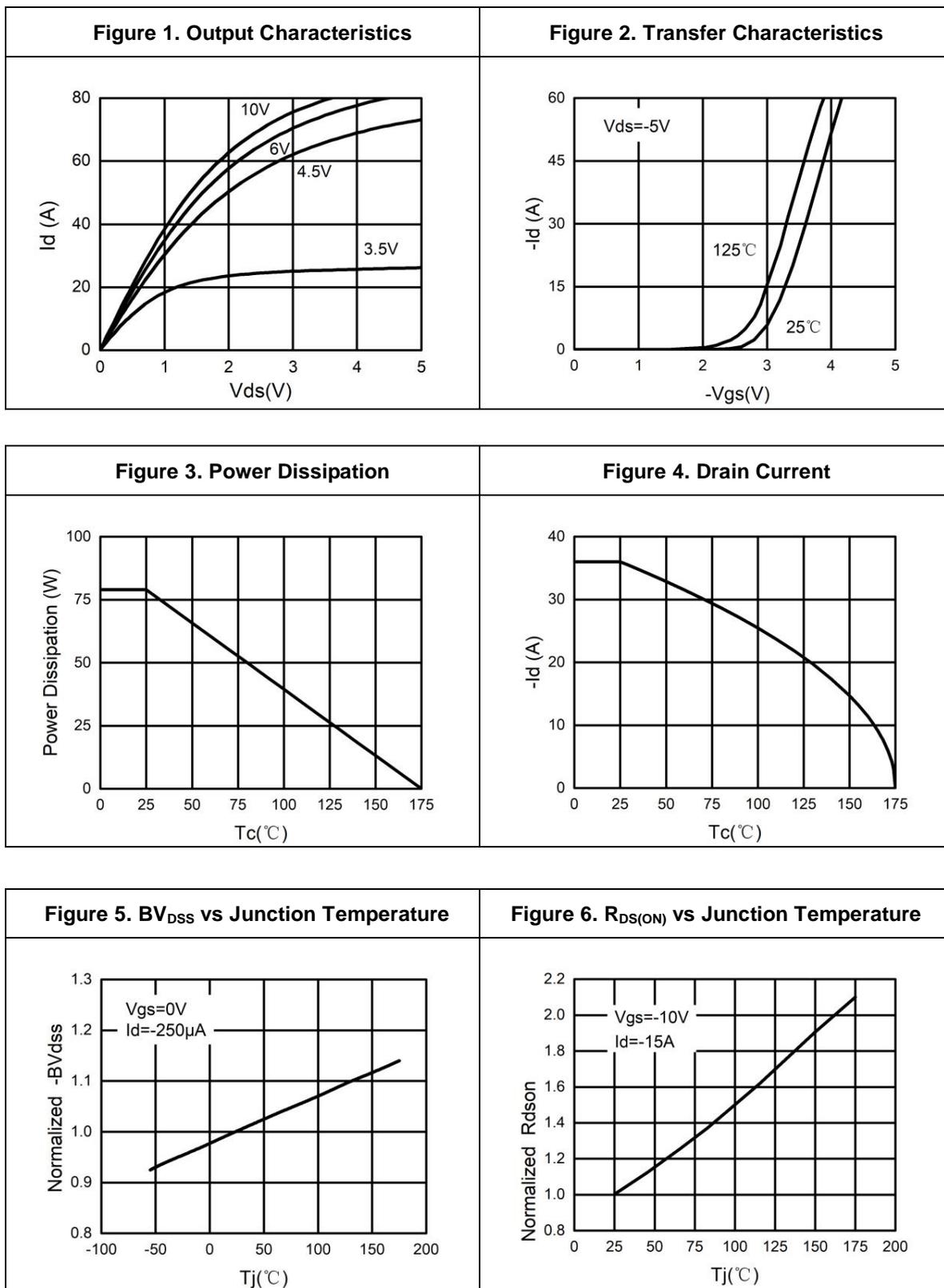
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>On/Off States</b>						
B <sub>VDSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V I <sub>D</sub> =-250μA	-60			V
I <sub>DSS</sub>	Zero Gate Voltage Drain Current	V <sub>DS</sub> =-60V, V <sub>GS</sub> =0V			-1	μA
I <sub>GSS</sub>	Gate-Body Leakage Current	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V			±100	nA
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA	-1	-1.8	-2.5	V
g <sub>FS</sub>	Forward Transconductance	V <sub>DS</sub> =-5V, I <sub>D</sub> =-15A		35		S
R <sub>DS(ON)</sub>	Drain-Source On-State Resistance	V <sub>GS</sub> =-10V, I <sub>D</sub> =-15A		24	29	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-10A		30.4	39	mΩ
<b>Dynamic Characteristics</b>						
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =-25V, V <sub>GS</sub> =0V, f=1.0MHz		4026		pF
C <sub>oss</sub>	Output Capacitance			134		pF
C <sub>rss</sub>	Reverse Transfer Capacitance			98		pF
<b>Switching Parameters</b>						
t <sub>d(on)</sub>	Turn-on Delay Time	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-30V, R <sub>L</sub> =1.5Ω, R <sub>GEN</sub> =3Ω		12.2		nS
t <sub>r</sub>	Turn-on Rise Time			10		nS
t <sub>d(off)</sub>	Turn-Off Delay Time			64		nS
t <sub>f</sub>	Turn-Off Fall Time			14		nS
Q <sub>g</sub>	Total Gate Charge	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-30V, I <sub>D</sub> =-20A		68		nC
Q <sub>gs</sub>	Gate-Source Charge			10.5		nC
Q <sub>gd</sub>	Gate-Drain Charge			13		nC
<b>Source-Drain Diode Characteristics</b>						
I <sub>SD</sub>	Source-Drain Current (Body Diode)				30	A
V <sub>SD</sub>	Forward on Voltage (Note 3)	V <sub>GS</sub> =0V, I <sub>S</sub> =-15A			-1.2	V
t <sub>rr</sub>	Reverse Recovery Time	I <sub>F</sub> =-20A, di/dt=100A/μs		26		ns
Q <sub>rr</sub>	Reverse Recovery Charge	I <sub>F</sub> =-20A, di/dt=100A/μs		29		nC

Notes 1.Repetitive Rating: Pulse width limited by maximum junction temperature.

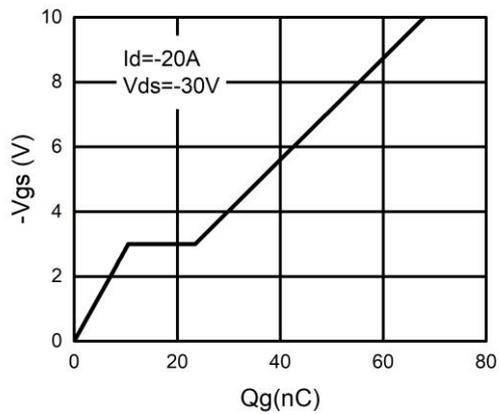
Notes 2.E<sub>AS</sub> condition: T<sub>J</sub>=25°C, V<sub>DD</sub>=40V, V<sub>G</sub>=-10V, R<sub>g</sub>=25Ω, L=0.5mH.

Notes 3.Repetitive Rating: Pulse width limited by maximum junction temperature.

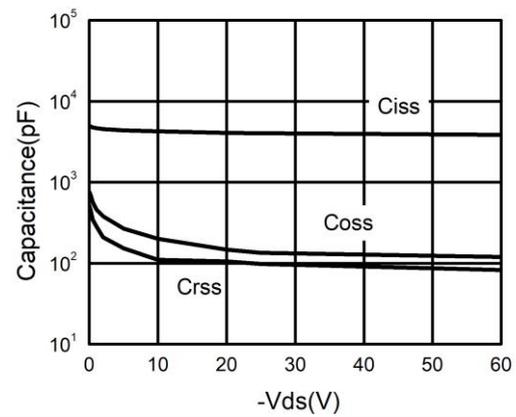
## Typical Electrical And Thermal Characteristics (Curves)



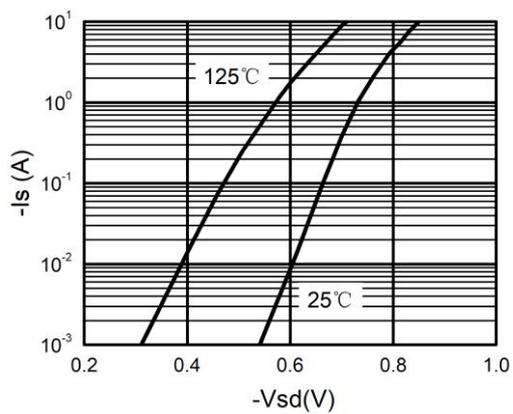
**Figure 7. Gate Charge Waveforms**



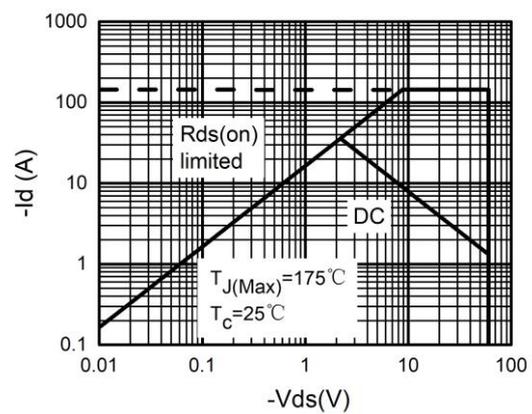
**Figure 8. Capacitance**



**Figure 9. Body-Diode Characteristics**

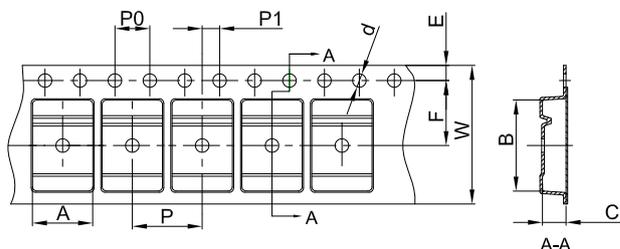


**Figure 10. Maximum Safe Operating Area**



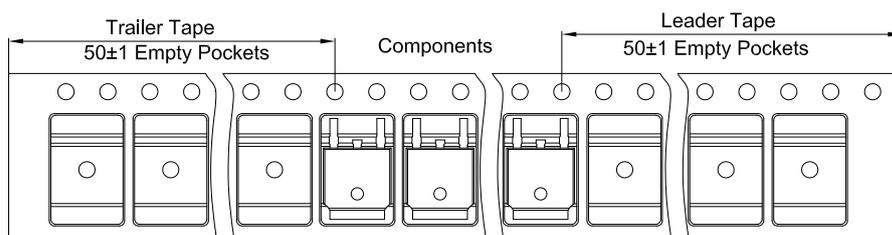
## TO-252-2L Tape and Reel

### TO-252 Embossed Carrier Tape

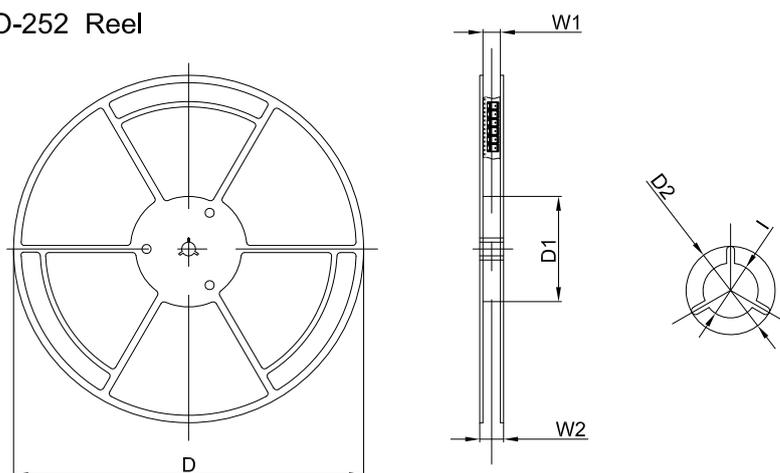


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
TO-252	6.90	10.50	2.70	Ø1.55	1.75	7.50	4.00	8.00	2.00	16.00

### TO-252 Tape Leader and Trailer

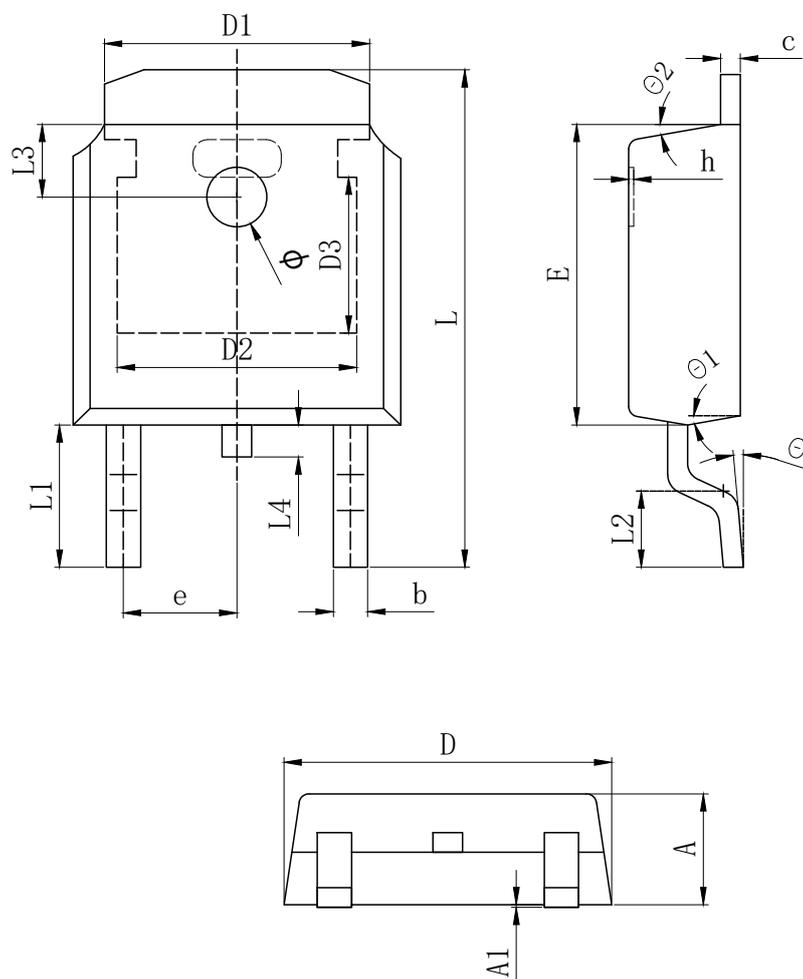


### TO-252 Reel



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	



SYMBOL	MILLIMETER		
	MIN	Typ.	MAX
A	2.200	2.300	2.400
A1	0.000		0.127
b	0.640	0.690	0.740
c (电镀后)	0.460	0.520	0.580
D	6.500	6.600	6.700
D1	5.334 REF		
D2	4.826 REF		
D3	3.166 REF		
E	6.000	6.100	6.200
e	2.286 TYP		
h	0.000	0.100	0.200
L	9.900	10.100	10.300
L1	2.888 REF		
L2	1.400	1.550	1.700
L3	1.600 REF		
L4	0.600	0.800	1.000
$\phi$	1.100	1.200	1.300
$\theta$	0°		8°
$\theta_1$	9° TYP		
$\theta_2$	9° TYP		

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