



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

## Product Summary

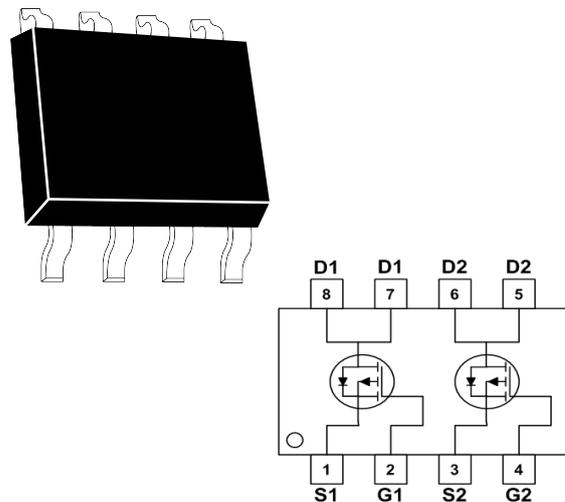
BVDSS	RDS(on)	ID
-30V	35mΩ	-5.3A

## Description

The JH4953A is the high cell density trenched P-ch MOSFETs, which provide excellent RDS(on) and gate charge for most of the synchronous buck converter applications.

The JH4953A meet the RoHS and Green Product

## Dual SOP8 Pin Configuration



## Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V <sub>DS</sub>	Drain-Source Voltage	-30	V
V <sub>GS</sub>	Gate-Source Voltage	±20	V
I <sub>D</sub> @T <sub>A</sub> =25°C	Continuous Drain Current, V <sub>GS</sub> @ 10V <sup>1</sup>	-5.3	A
I <sub>D</sub> @T <sub>A</sub> =70°C	Continuous Drain Current, V <sub>GS</sub> @ 10V <sup>1</sup>	-4.3	A
I <sub>DM</sub>	Pulsed Drain Current <sup>2</sup>	-20	A
EAS	Single Pulse Avalanche Energy <sup>3</sup>	---	mJ
I <sub>AS</sub>	Avalanche Current	---	A
P <sub>D</sub> @T <sub>A</sub> =25°C	Total Power Dissipation <sup>4</sup>	2.0	W
T <sub>STG</sub>	Storage Temperature Range	-55 to 150	°C
T <sub>J</sub>	Operating Junction Temperature Range	-55 to 150	°C

## Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
R <sub>θJA</sub>	Thermal Resistance Junction-Ambient <sup>1</sup>	---	100	°C/W
R <sub>θJC</sub>	Thermal Resistance Junction-Case <sup>1</sup>	---	---	°C/W

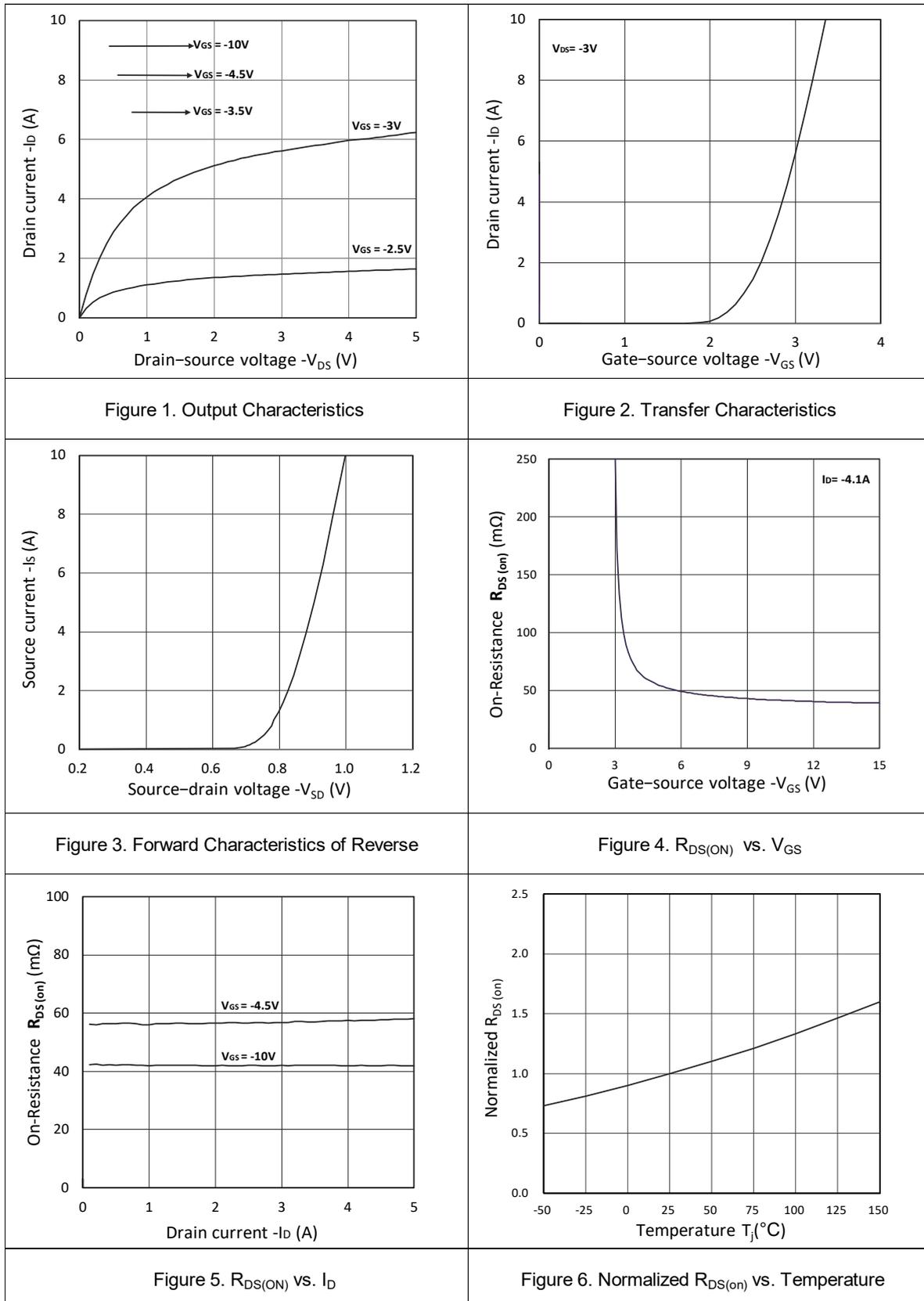
## Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	<b>BV<sub>DSS</sub></b>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-30	-	-	V
Gate-body Leakage current	<b>I<sub>GSS</sub></b>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V	-	-	±100	nA
Zero Gate Voltage Drain Current	<b>I<sub>DSS</sub></b>	V <sub>DS</sub> = -30V, V <sub>GS</sub> = 0V	-	-	-1	μA
Gate-Threshold Voltage	<b>V<sub>GS(th)</sub></b>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-1.0	-1.5	-2.1	V
Drain-Source On-Resistance <sup>3</sup>	<b>R<sub>DS(on)</sub></b>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -4.1A	-	35	60	mΩ
		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -3A	-	52	90	
<b>Dynamic Characteristics<sup>4</sup></b>						
Input Capacitance	<b>C<sub>iss</sub></b>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, f = 1MHz	-	530	-	pF
Output Capacitance	<b>C<sub>oss</sub></b>		-	70	-	
Reverse Transfer Capacitance	<b>C<sub>rss</sub></b>		-	56	-	
<b>Switching Characteristics<sup>4</sup></b>						
Total Gate Charge	<b>Q<sub>g</sub></b>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -4.1A, V <sub>DS</sub> = -15V	-	10	-	nC
Gate-Source Charge	<b>Q<sub>gs</sub></b>		-	2	-	
Gate-Drain Charge	<b>Q<sub>gd</sub></b>		-	2.8	-	
Turn-On Delay Time	<b>t<sub>d(on)</sub></b>	V <sub>GS</sub> = -10V, V <sub>DD</sub> = -15V, ,R <sub>GEN</sub> = 6Ω, I <sub>D</sub> = -4.1A,	-	6.9	-	ns
Rise Time	<b>t<sub>r</sub></b>		-	12	-	
Turn-Off Delay Time	<b>t<sub>d(off)</sub></b>		-	19	-	
Fall Time	<b>t<sub>f</sub></b>		-	7.5	-	
<b>Source-Drain Body Diode Characteristics</b>						
Diode Forward Voltage <sup>3</sup>	<b>V<sub>SD</sub></b>	I <sub>S</sub> = -1.7A, V <sub>GS</sub> = 0V	-	-	-1.2	V
Continuous Source Current	<b>I<sub>S</sub></b>		-	-	-5.3	A

### Notes:

1. Repetitive rating, pulse width limited by junction temperature T<sub>J(MAX)</sub>=150°C.
2. The data tested by surface mounted on a 1 inch<sup>2</sup> FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.
3. Pulse Test: Pulse width≤300μs, duty cycle≤2%.
4. This value is guaranteed by design hence it is not included in the production test.

## Typical Characteristics



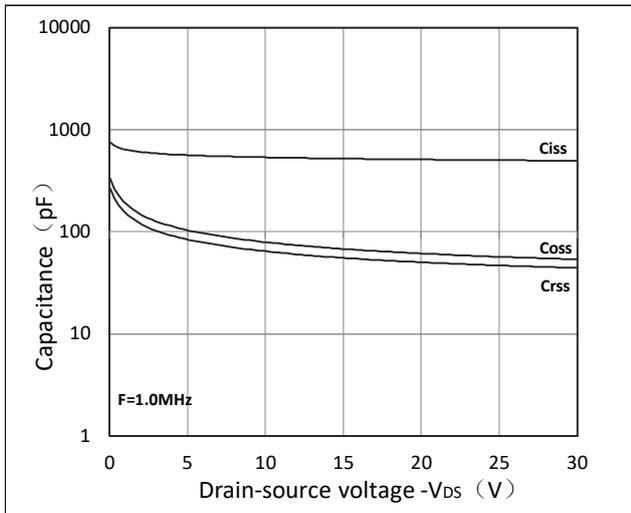


Figure 7. Capacitance Characteristics

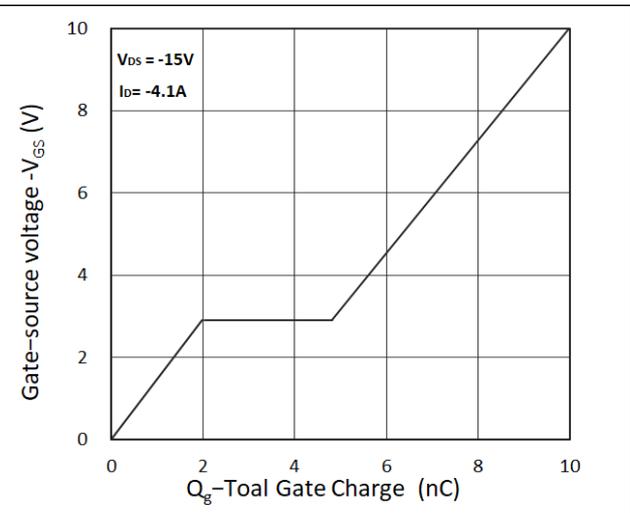
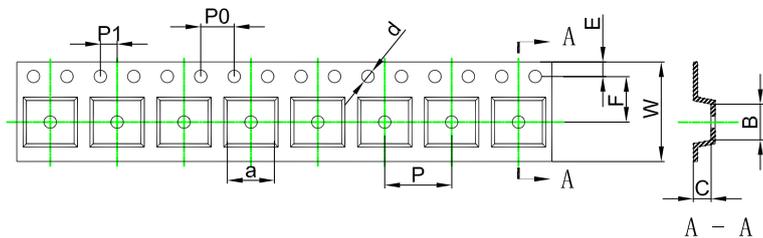


Figure 8. Gate Charge Characteristics

## SOP8 Tape and Reel Information

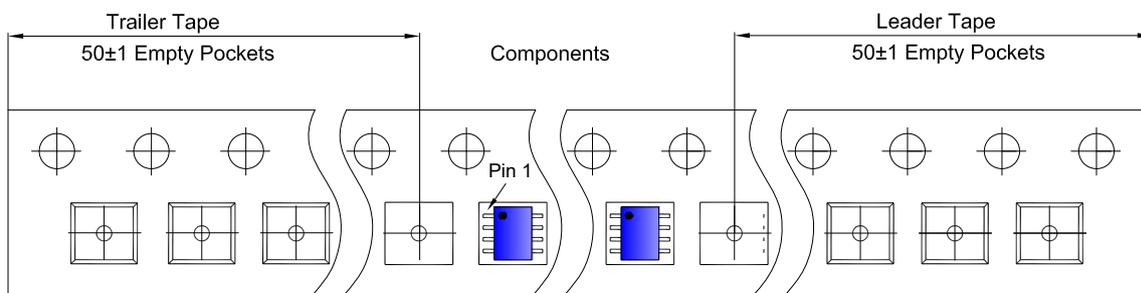
### Embossed Carrier Tape



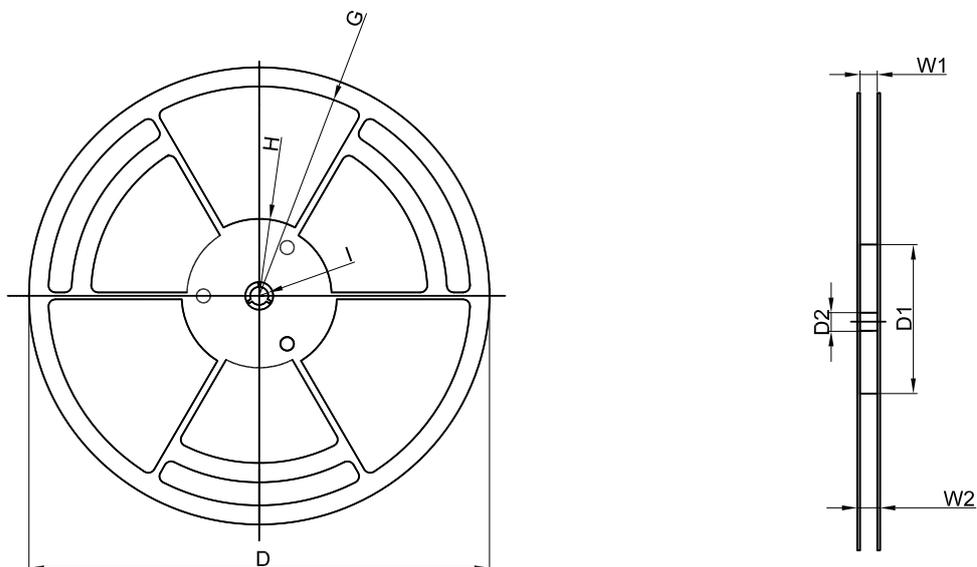
Dimensions are in millimeter

Pkg type	a	B	C	d	E	F	P0	P	P1	W
SOP8	6.40	5.40	2.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

### Tape Leader and Trailer



### Reel

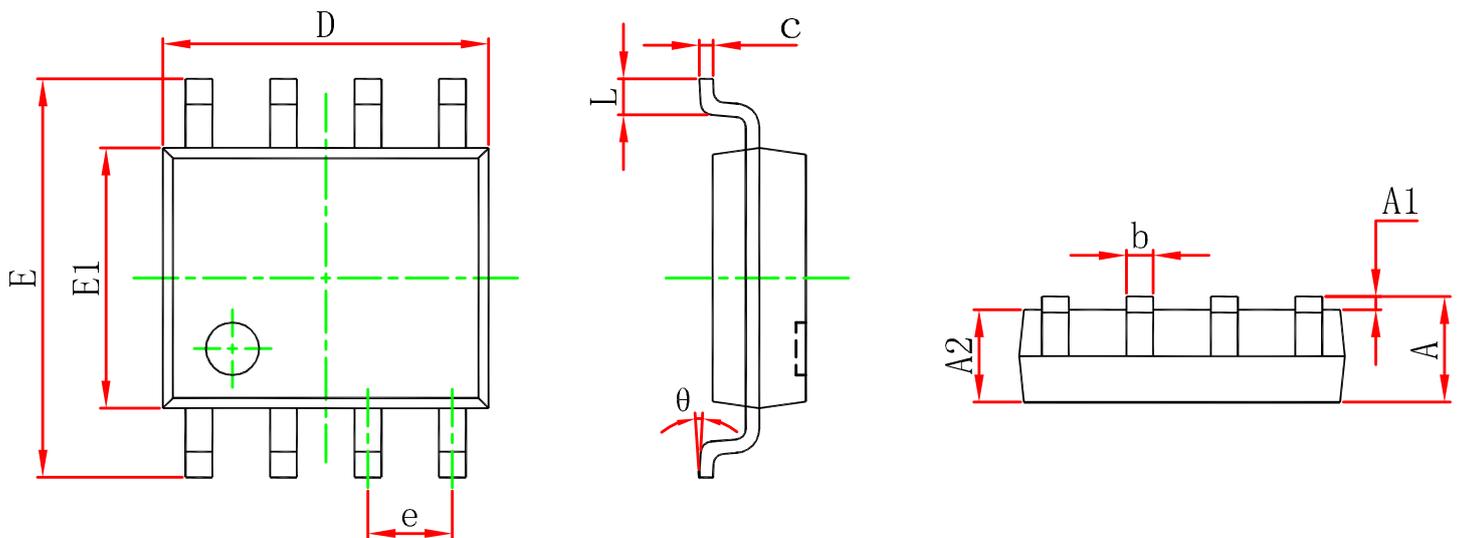


Dimensions are in millimeter

Reel Option	D	D1	D2	G	H	I	W1	W2
13" Dia	Ø330.00	100.00	13.00	R151.00	R56.00	R6.50	12.40	17.60

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3,000 pcs	13 inch	6,000 pcs	360×360×65	48,000 pcs	565×380×390	



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.450	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.700	5.100	0.185	0.201
e	1.270 (BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

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