

General Description

The HSU10N15 is the high cell density trench N-ch MOSFETs, which provides excellent RDSON and efficiency for most of the small power switching and load switch applications.

The HSU10N15 meet the RoHS and Green Product requirement with full function reliability approved.

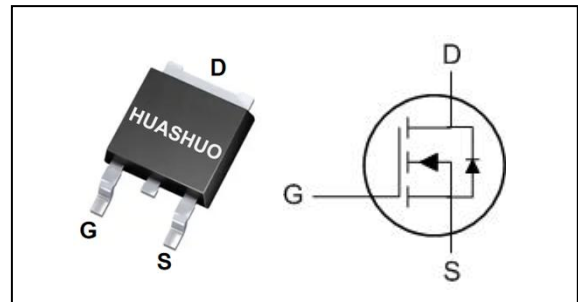
Features

- Green Device Available
- Super Low Gate Charge
- Excellent Cdv/dt effect decline
- Advanced high cell density Trench Technology

Product Summary

V_{DS}	150	V
$R_{DS(ON),max}$	280	mΩ
I_D	10	A

TO-252 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	150	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D@T_C=25^\circ\text{C}$	Continuous Drain Current, $V_{GS} @ 10V^1$	10	A
$I_D@T_C=70^\circ\text{C}$	Continuous Drain Current, $V_{GS} @ 10V^1$	7	A
I_{DM}	Pulsed Drain Current ²	40	A
$P_D@T_C=25^\circ\text{C}$	Total Power Dissipation ³	40	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient ¹	---	62	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-Case ¹	---	3	$^\circ\text{C/W}$



Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250uA	150	---	---	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =10V, I _D =2A	---	210	280	mΩ
		V _{GS} =4.5V, I _D =1A	---	220	300	
V _{GS(th)}	Gate Threshold Voltage	V _{GS} =V _{DS} , I _D =250uA	1.0	1.8	2.5	V
I _{DSS}	Drain-Source Leakage Current	V _{DS} =150V, V _{GS} =0V, T _J =25°C	---	---	1	uA
I _{DSS}	Drain-Source Leakage Current	V _{DS} =150V, V _{GS} =0V, T _J =125°C	---	---	30	uA
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	---	---	±100	nA
Q _g	Total Gate Charge (10V)	V _{DS} =75V, V _{GS} =10V, I _D =2A	---	18	---	nC
Q _{gs}	Gate-Source Charge		---	4.6	---	
Q _{gd}	Gate-Drain Charge		---	5.7	---	
T _{d(on)}	Turn-On Delay Time	V _{DD} =75V, V _{GS} =10V, R _G =6Ω I _D =2A	---	13	---	ns
T _r	Rise Time		---	19	---	
T _{d(off)}	Turn-Off Delay Time		---	26	---	
T _f	Fall Time		---	9	---	
C _{iss}	Input Capacitance	V _{DS} =75V, V _{GS} =0V, f=1MHz	---	840	---	pF
C _{oss}	Output Capacitance		---	119	---	
C _{rss}	Reverse Transfer Capacitance		---	25	---	

Diode Characteristics

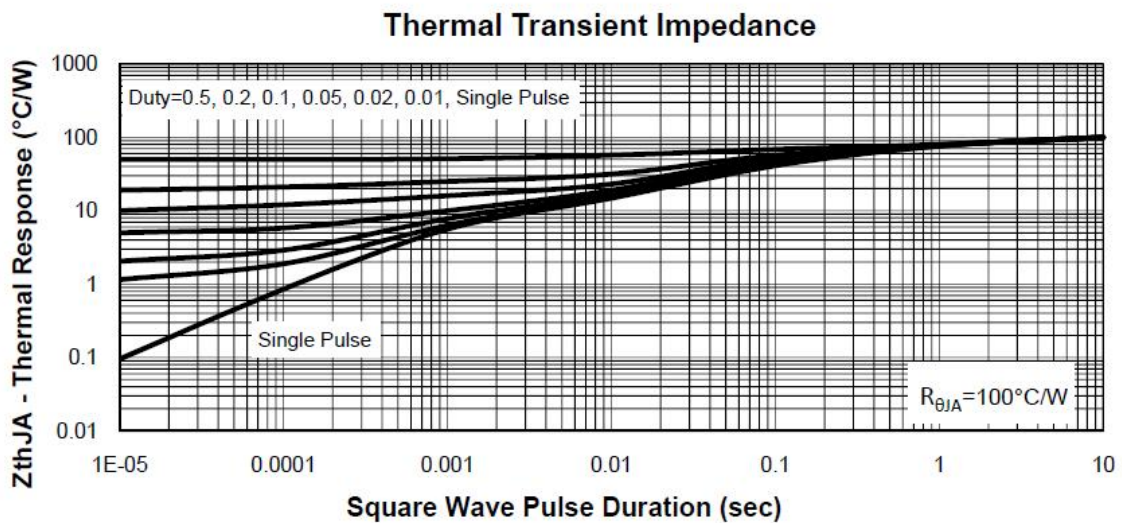
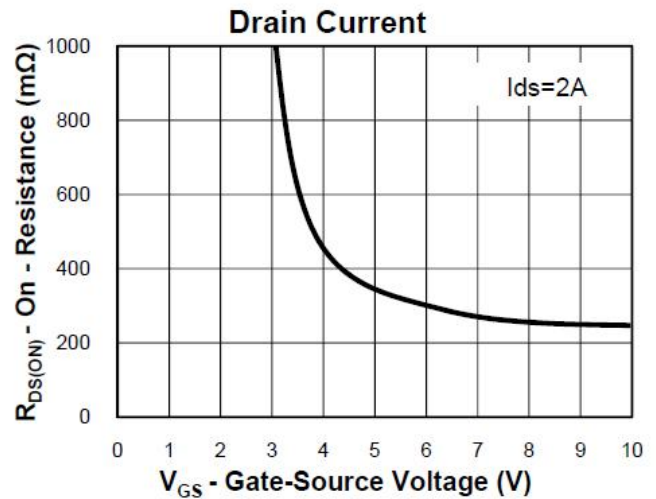
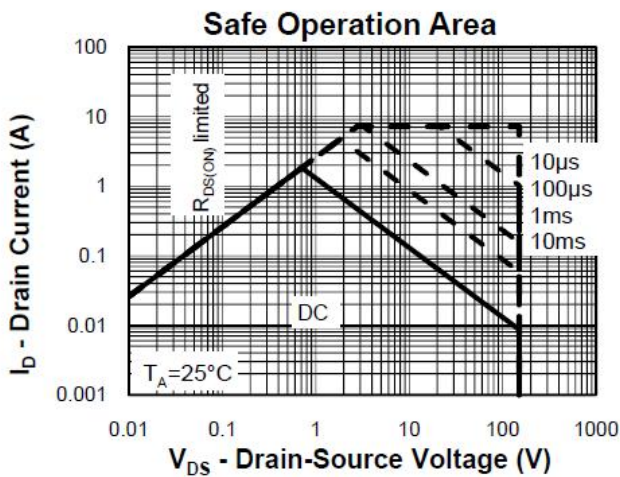
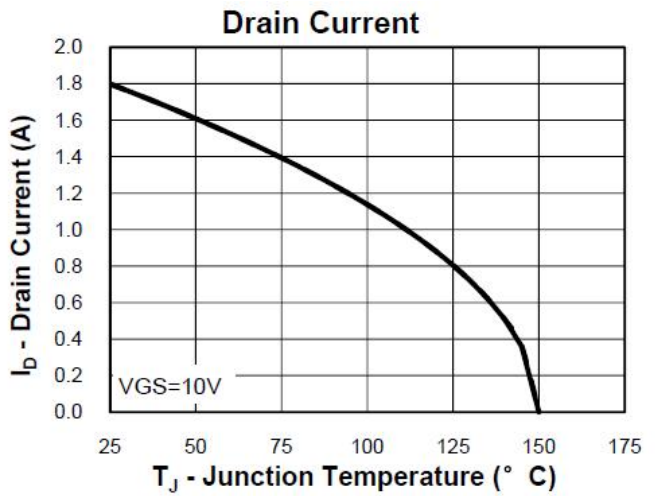
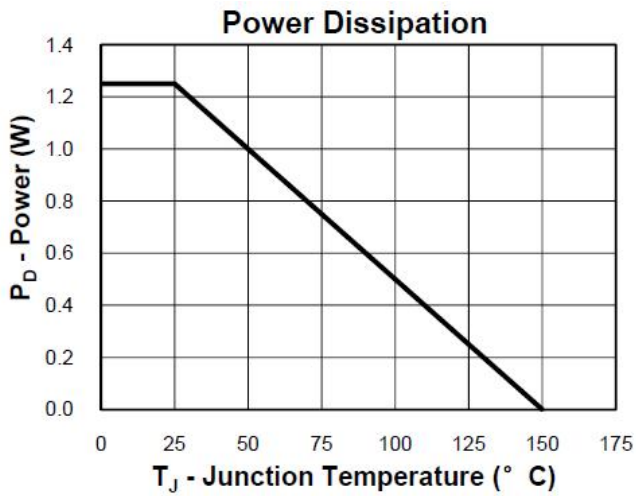
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I _S	Continuous Source Current ^{1,4}	V _G =V _D =0V, Force Current	---	---	10	A
V _{SD}	Diode Forward Voltage ²	V _{GS} =0V, I _S =1A, T _J =25°C	---	---	1.2	V

Note :

- 1.The data tested by surface mounted on a 1 inch²FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width ≤ 300us , duty cycle ≤ 2%
- 3.The power dissipation is limited by 150°C junction temperature
- 4.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

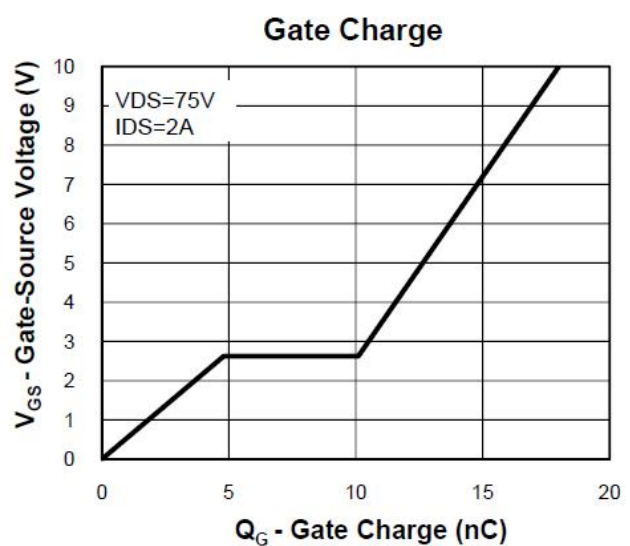
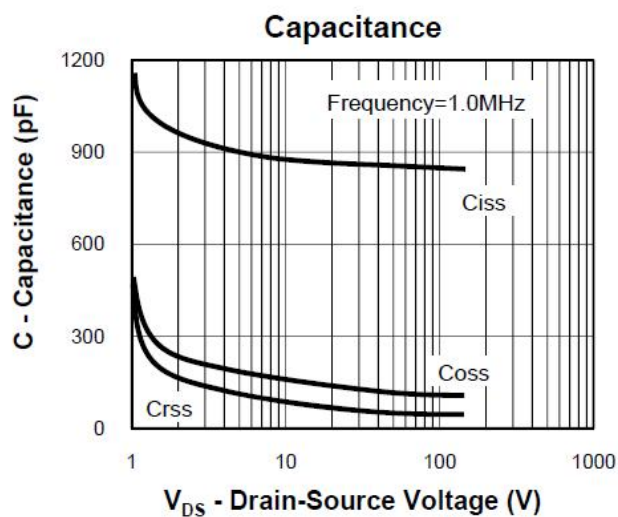
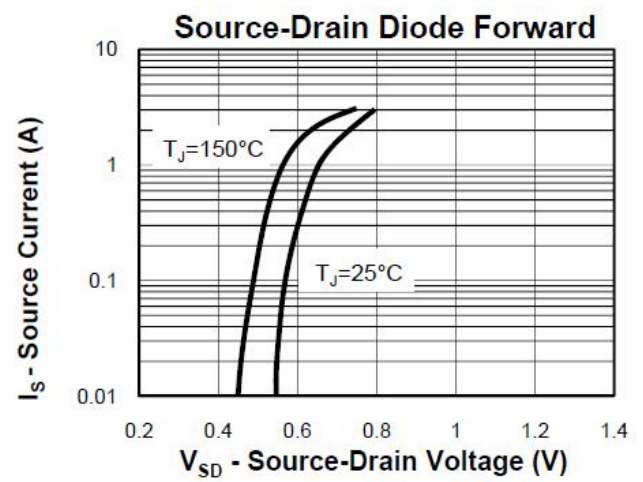
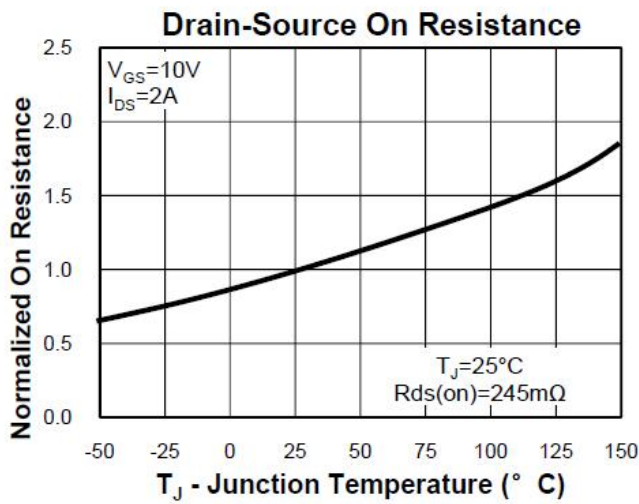
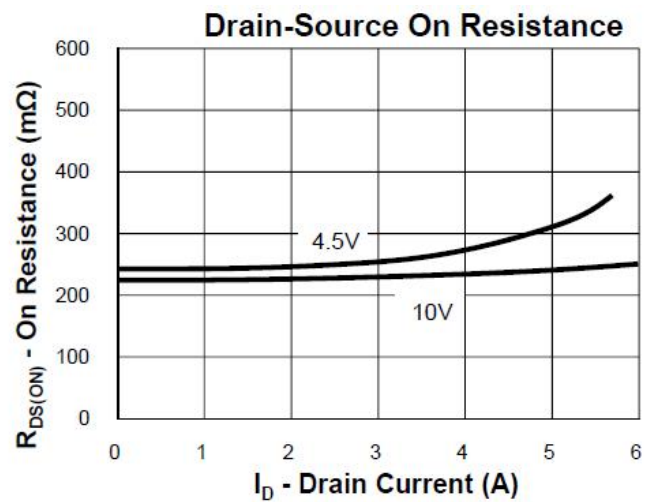
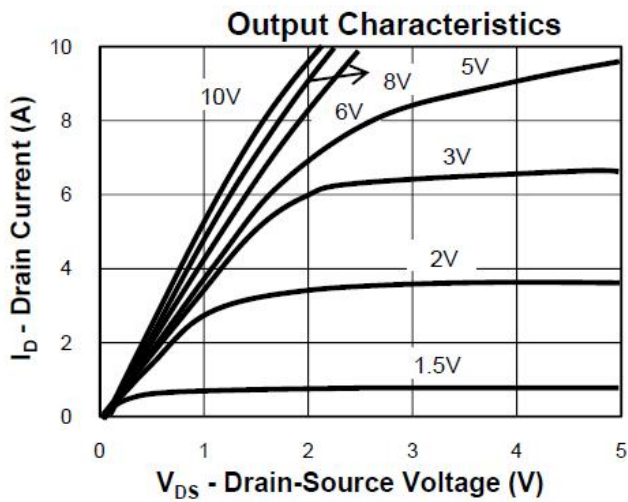


Typical Characteristics





N-Ch 150V Fast Switching MOSFETs

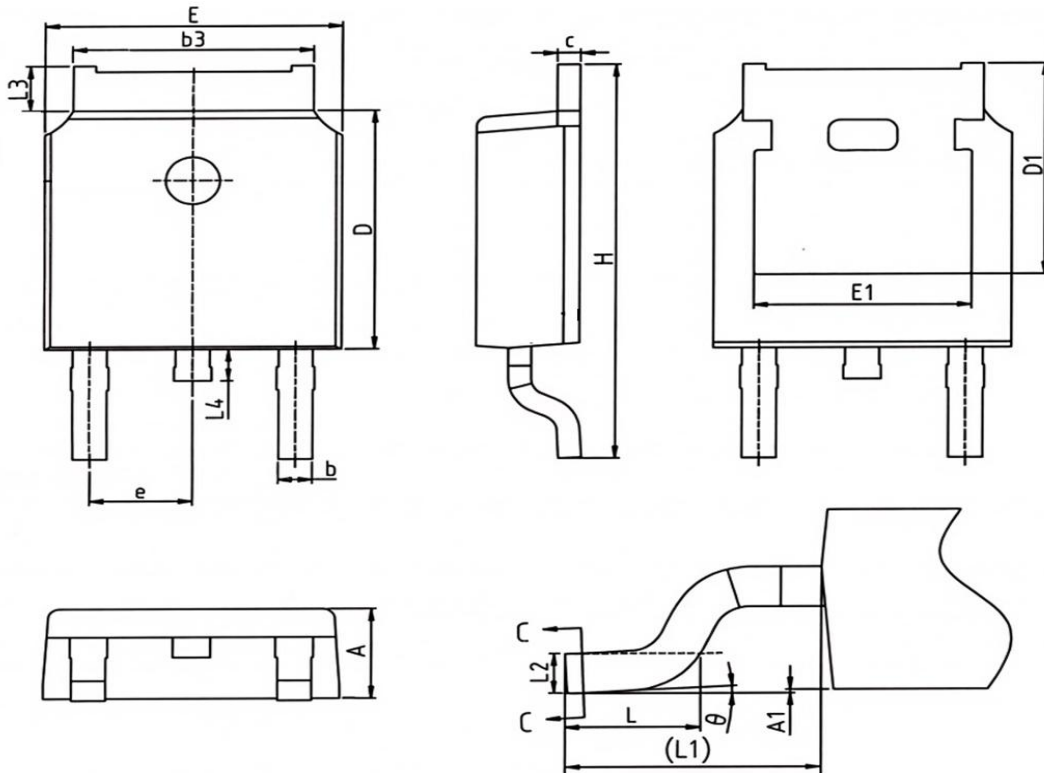




Ordering Information

Part Number	Package code	Packaging
HSU10N15	TO252	2500/Tape&Reel

TO252 Package Outline



SYMBOLS	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.18	2.40	0.086	0.095
A1	-	0.2	-	0.008
b	0.68	0.9	0.026	0.036
b3	4.95	5.46	0.194	0.215
C	0.43	0.89	0.017	0.035
D	5.97	6.22	0.235	0.245
D1	5.300REF		0.209REF	
E	6.35	6.73	0.250	0.265
E1	4.32	---	0.170	-
e	2.286BSC		0.09BSC	
H	9.4	10.5	0.370	0.413
L	1.38	1.78	0.054	0.070
L1	2.90REF		0.114REF	
L2	0.51BSC		0.020BSC	
L3	0.88	1.28	0.034	0.050
L4	0.5	1	0.019	0.039
θ	0°	8°	0°	8°



HSU10N15 Marking:

