General Description

The BSS192,115-CN is the high cell density trenched P-ch MOSFETs which provides excellent RDSON and efficiency for most of the small power switching and load switch applications.

The BSS192,115-CN meets the RoHS and Green Product requirement with full function reliability approved.

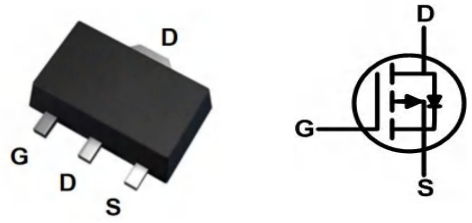
Product Summary

V_{DS}	-250	V
$R_{DS(ON),Max}$	4	Ω
I_D	-2	A

Features

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

SOT-89 Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-250	V
V_{GS}	Gate-Source Voltage	±20	V
I_D@T_C=25°C	Continuous Drain Current, V_{GS} @ -10V[1]	-2.0	A
I_D@T_C=70°C	Continuous Drain Current, V_{GS} @ -10V[1]	-1.0	A
I_D@T_A=25°C	Continuous Drain Current, V_{GS} @ -10V[1]	-0.4	A
I_D@T_A=70°C	Continuous Drain Current, V_{GS} @ -10V[1]	-0.3	A
I_{DM}	Pulsed Drain Current[2]	-1.2	A
P_D@T_A=25°C	Total Power Dissipation[3]	1.0	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient [1]	---	130	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-Case[1]	---	50	°C/W

Electrical Characteristics (T_J=25 ℃, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V , I_D=-250uA	-250	---	---	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS}=-10V , I_D=-0.3A	---	3.3	4	Ω
$V_{GS(th)}$	Gate Threshold Voltage	V_{GS}=V_{DS} , I_D =-250uA	-2.0	-3.0	-4.0	V
I_{DSS}	Drain-Source Leakage Current	V_{DS}=-200V , V_{GS}=0V , T_J=25℃	---	---	1	uA
		V_{DS}=-200V , V_{GS}=0V , T_J=55℃	---	---	10	
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V , V_{DS}=0V	---	---	±100	nA
gfs	Forward Transconductance	V_{DS}=-5V , I_D=-0.8A	---	1.5	---	S
Q_g	Total Gate Charge	V_{DS}=-100V , V_{GS}=-4.5V , I_D=-0.3A	---	8.9	---	nC
Q_{gs}	Gate-Source Charge		---	1.5	---	
Q_{gd}	Gate-Drain Charge		---	1.8	---	
$T_{d(on)}$	Turn-On Delay Time	V_{DD}=-100V , V_{GS}=-10V , R_G=6Ω I_D=-0.3A	---	1.9	---	ns
T_r	Rise Time		---	1.6	---	
$T_{d(off)}$	Turn-Off Delay Time		---	22	---	
T_f	Fall Time		---	10.5	---	
C_{iss}	Input Capacitance	V_{DS}=-100V , V_{GS}=0V , f=1MHz	---	500	---	pF
C_{oss}	Output Capacitance		---	39	---	
C_{rss}	Reverse Transfer Capacitance		---	20	---	

Diode Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current[1,4]	V_G=V_D=0V , Force Current	---	---	-0.3	A
I_{SM}	Pulsed Source Current[2,4]		---	---	-1.2	A
V_{SD}	Diode Forward Voltage[2]	V_{GS}=0V , I_S=-1A , T_J=25℃	---	---	-1.3	V

Note :
1.The data tested by surface mounted on a 1 inch² FR-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℃ 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

Figure 1. Output Characteristics

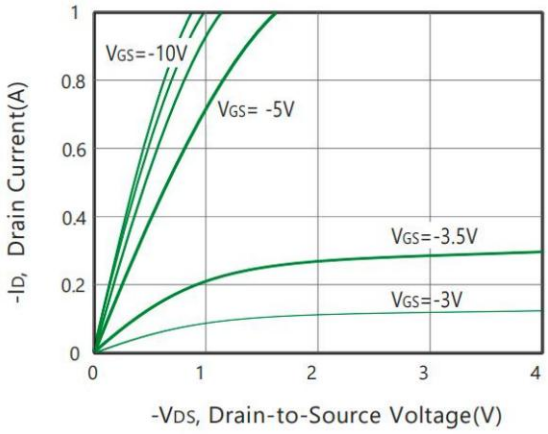


Figure 2. Body Diode Forward Voltage Variation with Source Current

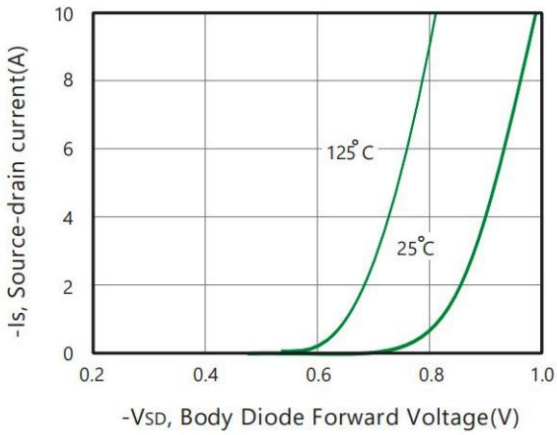


Figure 3. On-Resistance vs. Gate-Source Voltage

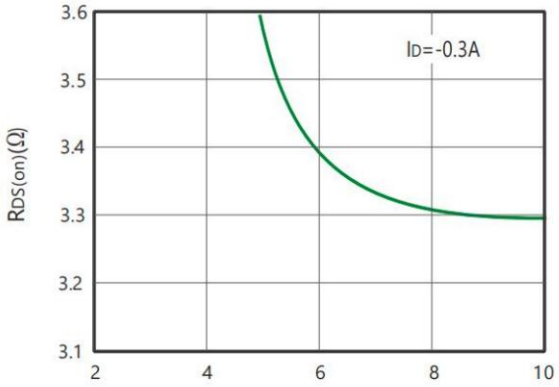


Figure 4. On-Resistance Variation with Drain Current and Temperature

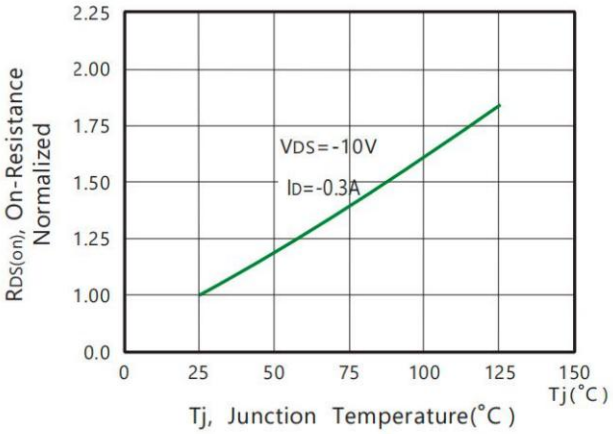


Figure 5. Gate Threshold Variation with Temperature

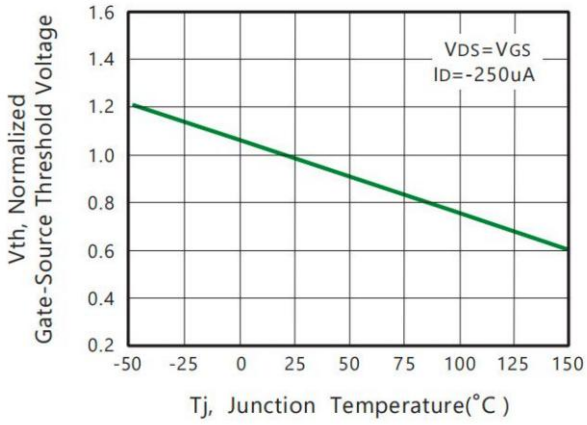


Figure 6. Gate Charge

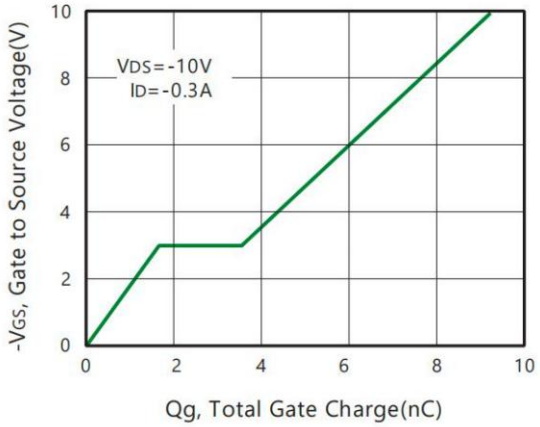


Figure 7. Capacitance

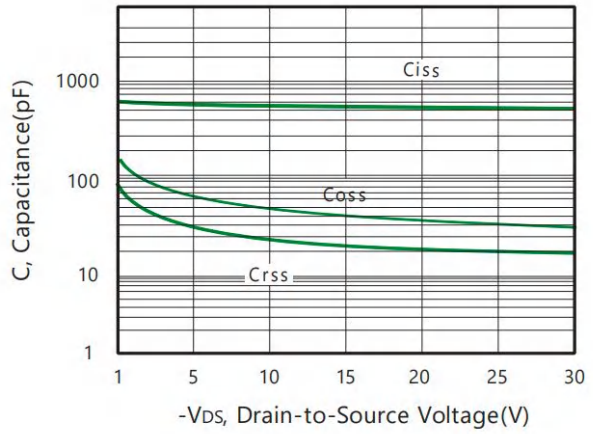
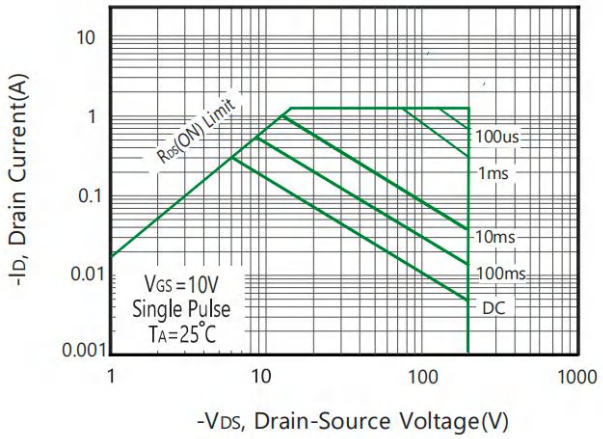


Figure 8. Maximum Safe Operating Area



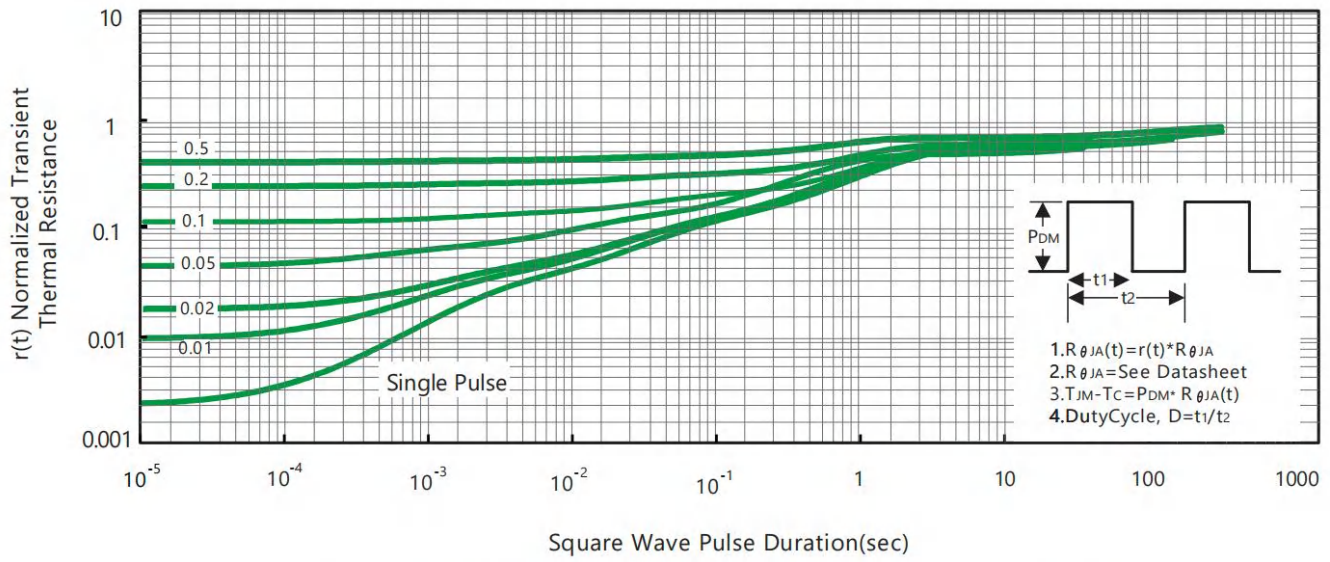
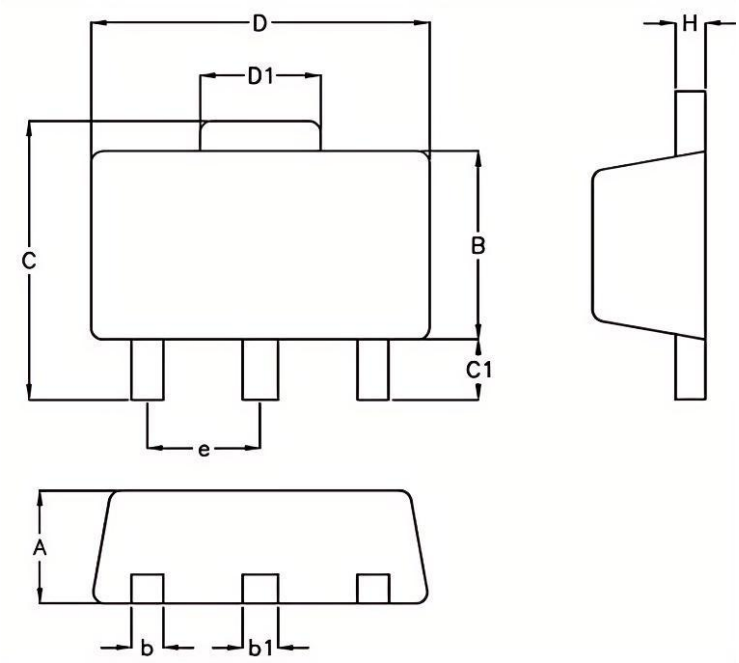


Figure 9. Normalized Thermal Transient Impedance Curve

Ordering Information

Part Number	Marking	Package code	Packaging
BSS192,115-CN	CR4RP25H	SOT-89	1000/Tape&Reel

SOT-89 Package Outline



SYMBOLS	MILLIMETERS		NCHES	
	MIN	MAX	MIN	MAX
A	1.397	1.600	0.055	0.063
b	0.420	0.540	0.017	0.021
b1	0.420	0.540	0.017	0.021
B	2.388	2.591	0.094	0.102
C	3.937	4.242	0.155	0.167
C1	0.787	1.194	0.031	0.047
D	4.394	4.597	0.173	0.181
D1	1.397	1.753	0.055	0.069
e	1.448	1.549	0.057	0.061
H	0.350	0.44	0.014	0.017

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