

RoHS Compliant Product
A suffix of "-C" specifies halogen free

DESCRIPTION

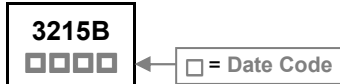
The SSD3215B-C is the highest performance trench N-Ch MOSFETs with extreme high cell density, which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications.

The SSD3215B-C meet the RoHS and Green Product requirement with full function reliability approved.

FEATURES

- Advanced High Cell Density Trench Technology
- Super Low Gate Charge
- Green Device Available

MARKING



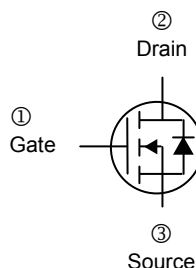
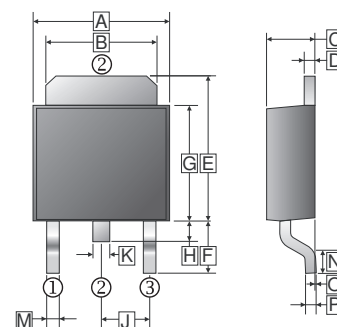
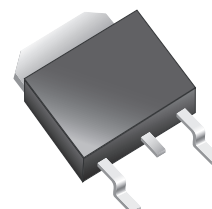
PACKAGE INFORMATION

Package	MPQ	Leader Size
TO-252	2.5K	13 inch

ORDER INFORMATION

Part Number	Type
SSD3215B-C	Lead (Pb)-free and Halogen-free

TO-252(D-Pack)



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.3	6.9	J	2.3	REF.
B	4.95	5.53	K	0.89	REF.
C	2.1	2.5	M	0.45	1.14
D	0.4	0.9	N	1.55	Typ.
E	6	7.7	O	0	0.15
F	2.90	REF.	P	0.58	REF.
G	5.4	6.4			
H	0.6	1.2			

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	150	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹ , @ $V_{GS}=10V$	I_D	$T_C=25^\circ C$	6
		$T_C=100^\circ C$	4.2
		$T_A=25^\circ C$	2
		$T_A=70^\circ C$	1.6
Pulsed Drain Current ³	I_{DM}	18	A
Total Power Dissipation	P_D	25	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ C$
Thermal Resistance Ratings			
Thermal Resistance Junction-Ambient ¹	$R_{\theta JA}$	62.5	$^\circ C/W$
Thermal Resistance Junction-Ambient ²		110	
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	5	

ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

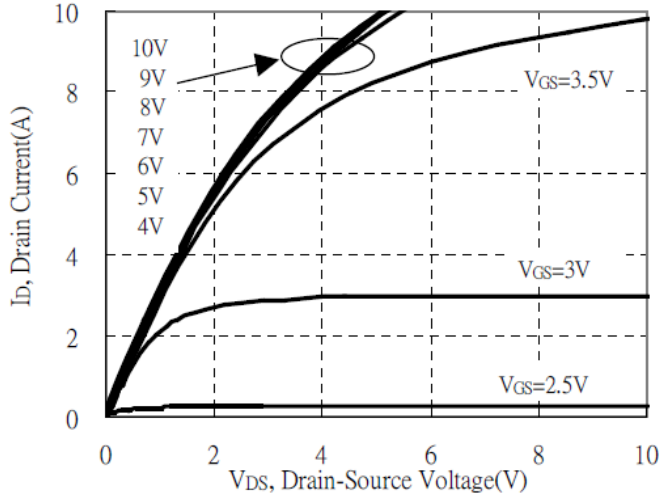
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions	
Drain-Source Breakdown Voltage	BV _{DSS}	200	-	-	V	V _{GS} =0, I _D =250μA	
Gate Threshold Voltage	V _{GS(th)}	1	-	2.5	V	V _{DS} =V _{GS} , I _D =250μA	
Forward Transconductance	g _{fs}	-	3.9	-	S	V _{DS} =10V, I _D =1A	
Gate-Source Leakage Current	I _{GSS}	-	-	±100	nA	V _{GS} = ±20V	
Drain-Source Leakage Current	I _{DSS}	T _J =25°C	-	-	1	μA	V _{DS} =120V, V _{GS} =0
		T _J =55°C	-	-	10		V _{DS} =120V, V _{GS} =0
Static Drain-Source On-Resistance ⁴	R _{DS(ON)}	-	-	340	mΩ	V _{GS} =10V, I _D =3A	
		-	-	380		V _{GS} =4.5V, I _D =2A	
Gate Resistance	R _g	-	4.5	-	Ω	f=1MHz	
Total Gate Charge	Q _g	-	9.1	-	nC	I _D =2A V _{DS} =120V V _{GS} =10V	
Gate-Source Charge	Q _{gs}	-	1.2	-			
Gate-Drain Charge	Q _{gd}	-	2.6	-			
Turn-on Delay Time	T _{d(on)}	-	6	-	nS	V _{DD} =75V I _D =2A V _{GS} =10V R _G =6Ω	
Rise Time	T _r	-	16.4	-			
Turn-off Delay Time	T _{d(off)}	-	21.6	-			
Fall Time	T _f	-	15.6	-			
Input Capacitance	C _{iss}	-	313	-	pF	V _{GS} =0 V _{DS} =50V f=1MHz	
Output Capacitance	C _{oss}	-	32	-			
Reverse Transfer Capacitance	C _{rss}	-	17	-			
Source-Drain Diode							
Continuous Source Current ¹	I _S	-	-	6	A		
Pulsed Source Current ³	I _{SM}	-	-	18			
Diode Forward Voltage ⁴	V _{SD}	-	-	1.2	V	V _{GS} =0, I _S =2A, T _J =25°C	
Reverse Recovery Time	t _{rr}	-	26.9	-	nS	I _F =2A, di/dt=100A/μs	
Reverse Recovery Charge	Q _{rr}	-	33.6	-	nC	T _J =25°C	

Notes:

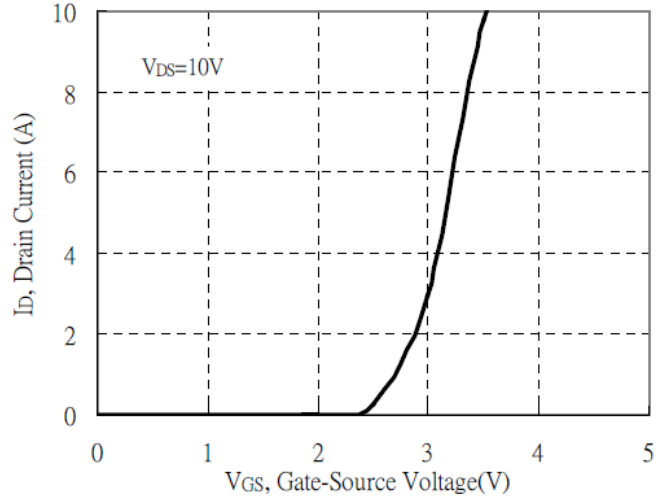
- Surface Mounted on 1"x1" FR4 Board with 2OZ copper.
- When mounted on Min. copper pad.
- Pulse width limited by maximum junction temperature.
- Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

TYPICAL CHARACTERISTICS CURVE

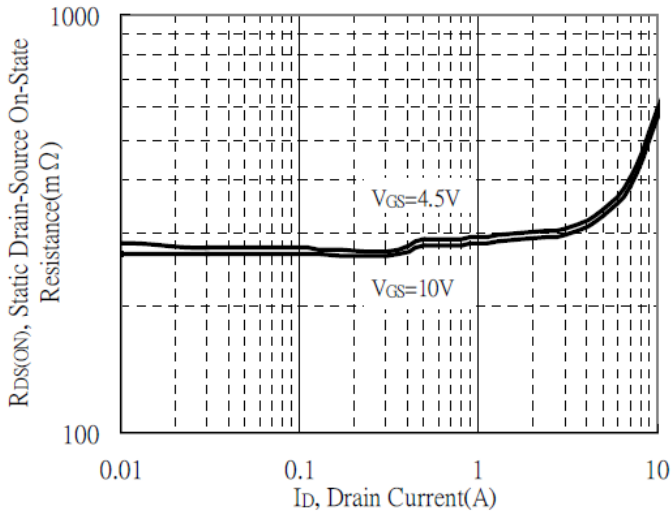
Typical Output Characteristics



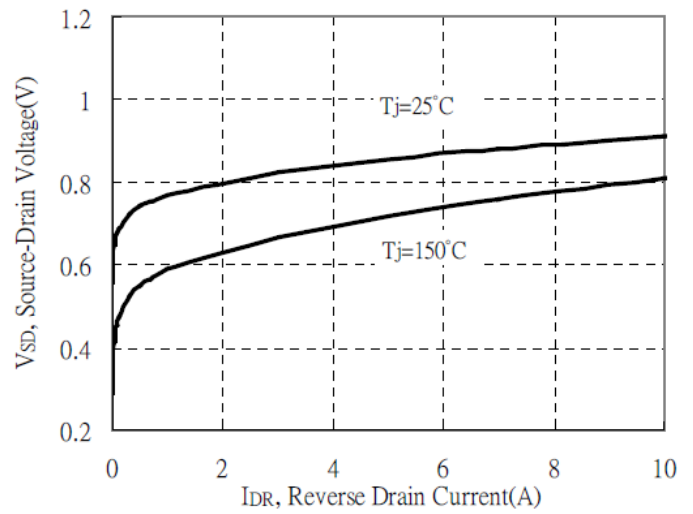
Typical Transfer Characteristics



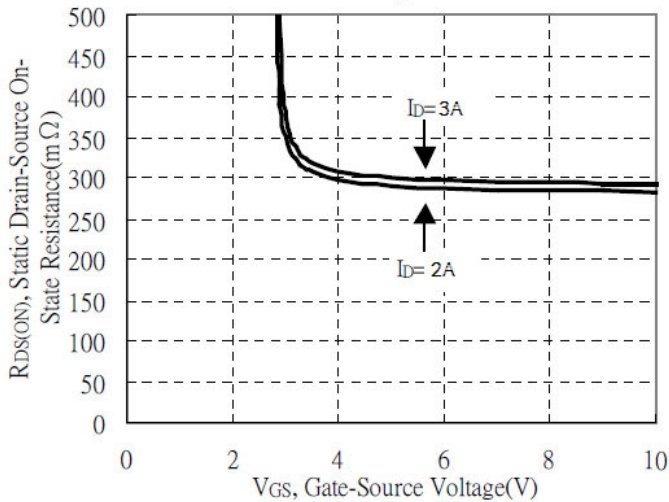
Static Drain-Source On-State resistance vs Drain Current



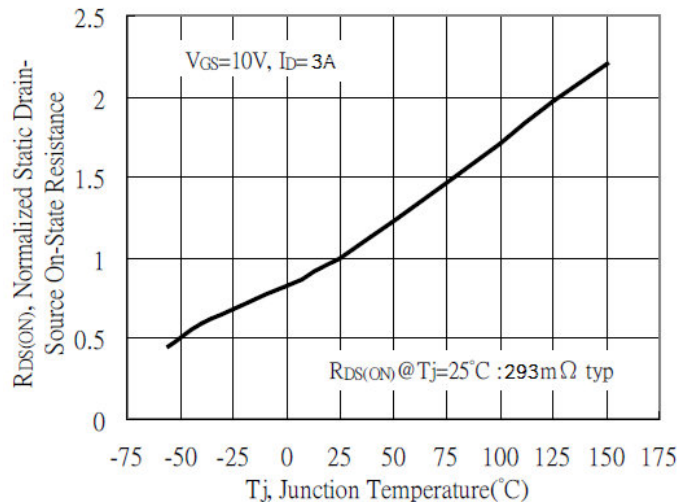
Reverse Drain Current vs Source-Drain Voltage



Static Drain-Source On-State Resistance vs Gate-Source Voltage

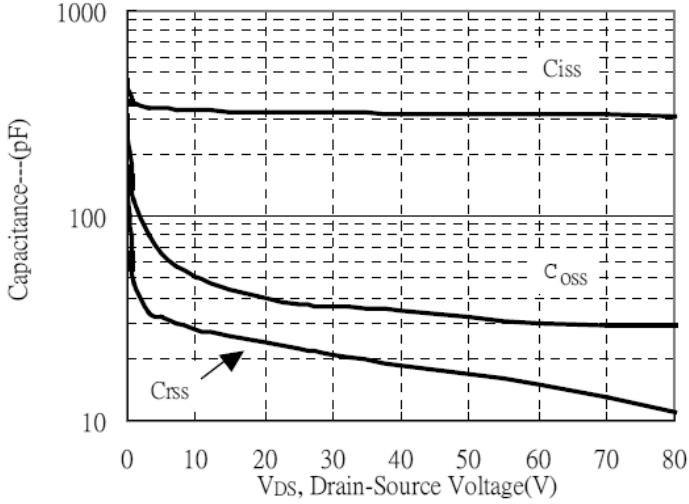


Drain-Source On-State Resistance vs Junction Temperature

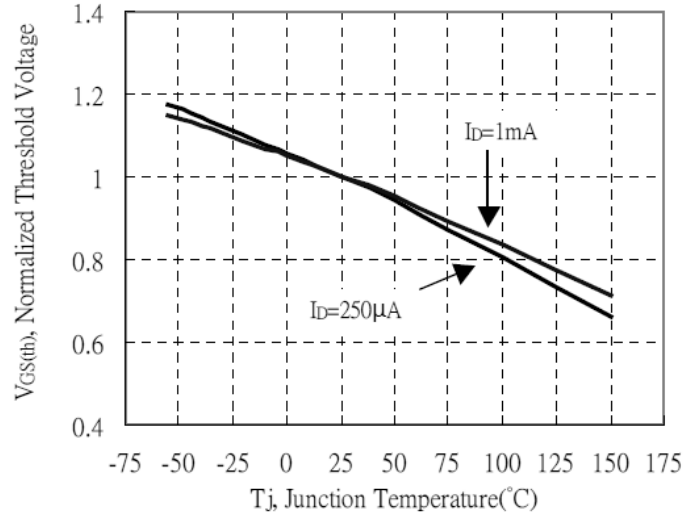


TYPICAL CHARACTERISTICS CURVE

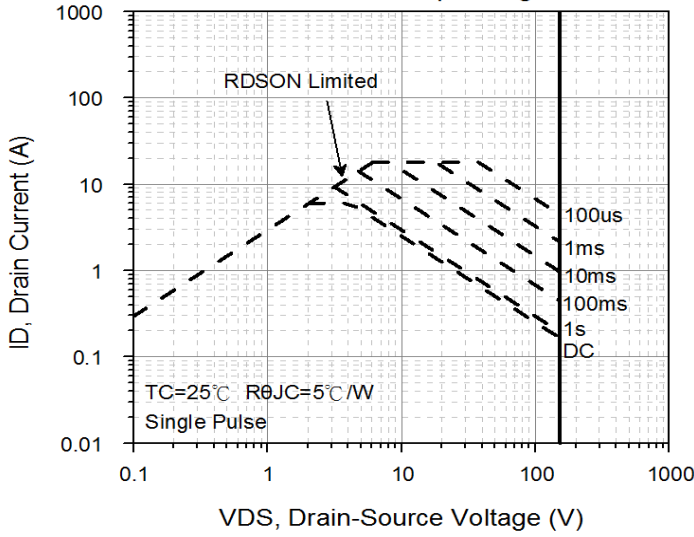
Capacitance vs Drain-to-Source Voltage



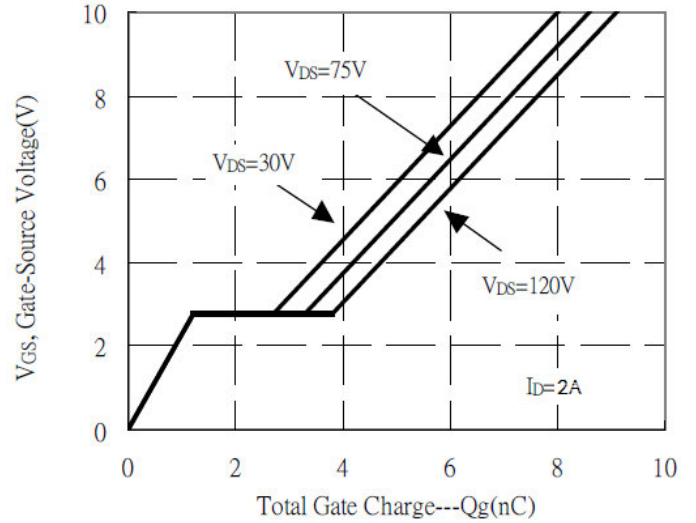
Normalized Threshold Voltage vs Junction Temperature



Maximum Safe Operating Area



Gate Charge Characteristics



Transient Thermal Response Curve

