Elektronische Bauelemente

SSD15P10

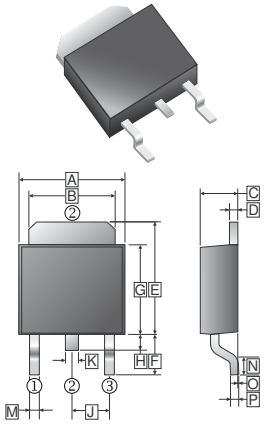
-15A, -100V, $R_{DS(ON)}$ 90mΩ
P-Ch Enhancement Mode Power MOSFET

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

DESCRIPTION

The SSD15P10 is the highest performance trench P-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 SSD15P10 meet the RoHS and Green Product with Function reliability approved.

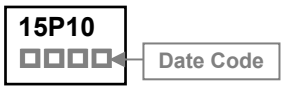
TO-252(D-Pack)

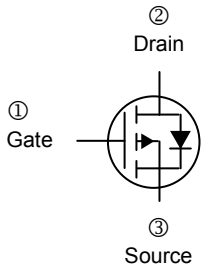


FEATURES

- $R_{DS(on)} \leqq 90m\Omega$ @V_{GS}= -10V
- $R_{DS(on)} \leqq 110m\Omega$ @V_{GS}= -4.5V
- Advanced high Cell Density Trench Technology
- Super Low Gate Charge
- Green Device Available
- TO-252 Package

MARKING





REF.	Millimeter Min.	Millimeter Max.	REF.	Millimeter Min.	Millimeter Max.
A	6.35	6.90	J	2.336 REF.	
B	4.95	5.53	K	0.89 REF.	
C	2.10	2.50	M	0.45	1.14
D	0.665 Typ.		N	1.55 Typ.	
E	6.0	7.5	O	0	0.13
F	2.90 REF		P	0.58 REF.	
G	5.40	6.40			
H	0.60	1.20			

PACKAGE INFORMATION

Package	MPQ	Leader Size
TO-252	2.5K	13 inch

ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current, @V_{GS}=10V [1]	T_C=25°C	I_D	-15	A
	T_C=100°C		-10	A
Pulsed Drain Current [2]		I_{DM}	-60	A
Power Dissipation [1]	T_C=25°C	P_D	50	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 ~ 175	°C
Thermal Resistance Ratings				
Maximum Thermal Resistance Junction-Ambient [1] (Max).		$R_{\theta JA}$	75	°C / W
Maximum Thermal Resistance Junction-Ambient			132	
Maximum Thermal Resistance Junction-Case [1] (Max).		$R_{\theta JC}$	3	

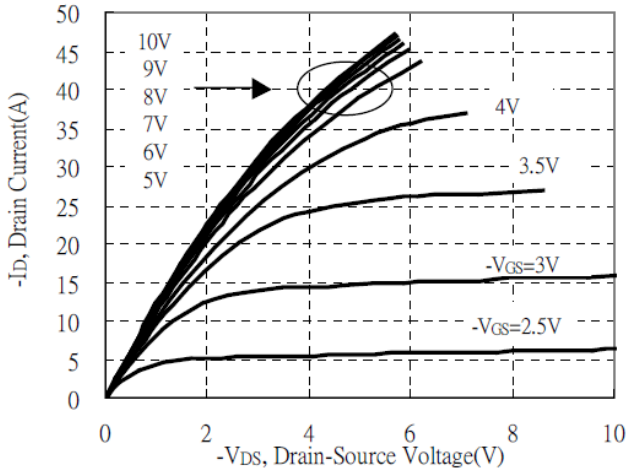
ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Drain-Source Breakdown Voltage	BV_{DSS}	-100	-	-	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 Transfer conductance	g_{fs}	-	11	-	S	V_{DS}= -10V, I_D= -4A
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±20V
Drain-Source Leakage Current	I_{DSS}	-	-	-1	μA	V_{DS}= -80V, V_{GS}=0, T_J=25°C
		-	-	-25		V_{DS}= -80V, V_{GS}=0, T_J=125°C
Static Drain-Source On-Resistance [3]	$R_{DS(ON)}$	-	-	90	mΩ	V_{GS}= -10V, I_D= -4.5A
		-	-	110		V_{GS}= -4.5V, I_D= -4A
Total Gate Charge	Q_g	-	13.3	-	nC	V_{GS}= -4.5V
Total Gate Charge	Q_g	-	29.2	-		I_D= -15A V_{DS}= -80V V_{GS}= -10V
Gate-Source Charge	Q_{gs}	-	4	-		
Gate-Drain Change	Q_{gd}	-	8.5	-		
Turn-on Delay Time	$T_{d(on)}$	-	8.8	-	nS	V_{DD}= -50V I_D= -1A V_{GS}= -10V R_G=6Ω
Rise Time	T_r	-	17.2	-		
Turn-off Delay Time	$T_{d(off)}$	-	86.2	-		
Fall Time	T_f	-	63	-		
Input Capacitance	C_{iss}	-	1726	-	pF	V_{GS}=0 V_{DS}= -25V f=1.0MHz
Output Capacitance	C_{oss}	-	104	-		
Reverse Transfer Capacitance	C_{rss}	-	71	-		
Source-Drain Diode						
Diode Forward Voltage [1]	I_S	-	-	-15	A	
Continuous Source Current [2]	I_{SM}	-	-	-60	A	
Forward On Voltage [3]	V_{SD}	-	-	-1.2	V	I_S= -2A, V_{GS}=0
Reverse Recovery Time	T_{rr}	-	28.8	-	nS	I_F= -15A, dI/dt=100A/μs T_J=25°C
Reverse Recovery Charge	Q_{rr}	-	40.9	-	nC	

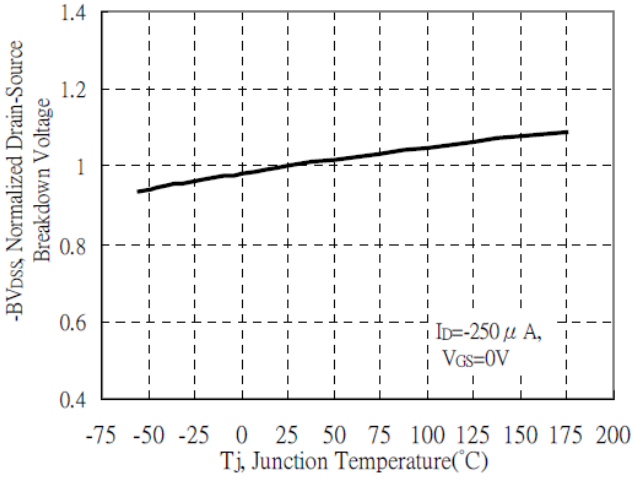
Notes:
1. The date tested by surface mounted on a 1 inch^2 FR-4 board with 2oz copper.
2. The power dissipation is limited by 150°C junction temperature.
3. The data tested by pulsed, pulse width≦300us,duty cycle≦2%.

TYPICAL CHARACTERISTICS CURVE

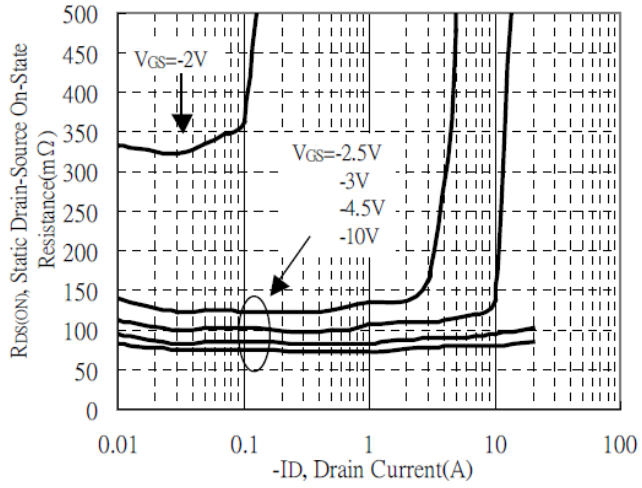
Typical Output Characteristics



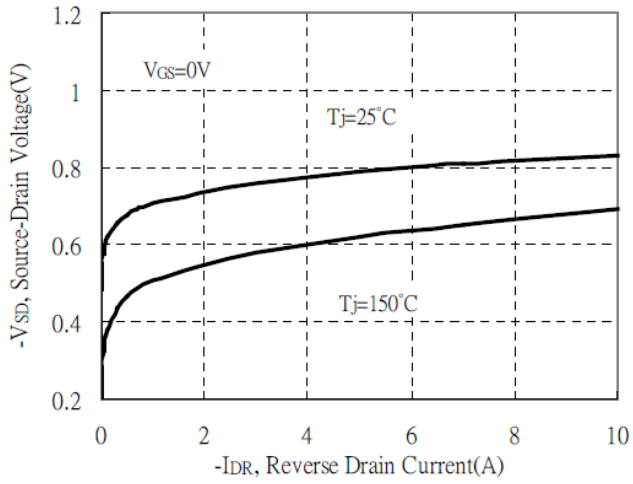
Brekdown Voltage vs Ambient Temperature



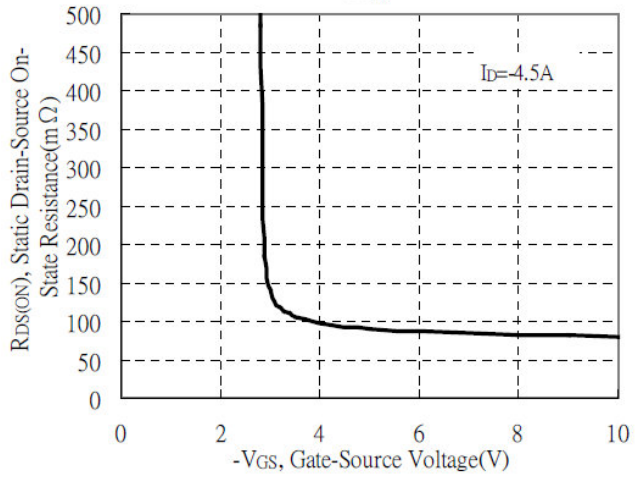
Static Drain-Source On-State resistance vs Drain Current



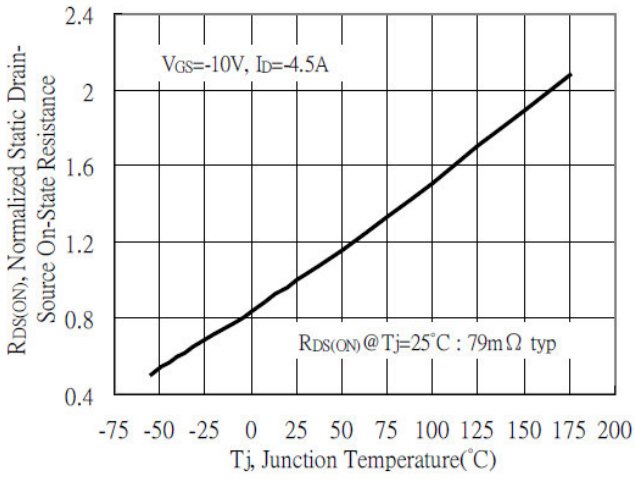
Reverse Drain Current vs Source-Drain Voltage



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



Drain-Source On-State Resistance vs Junction Tempearture



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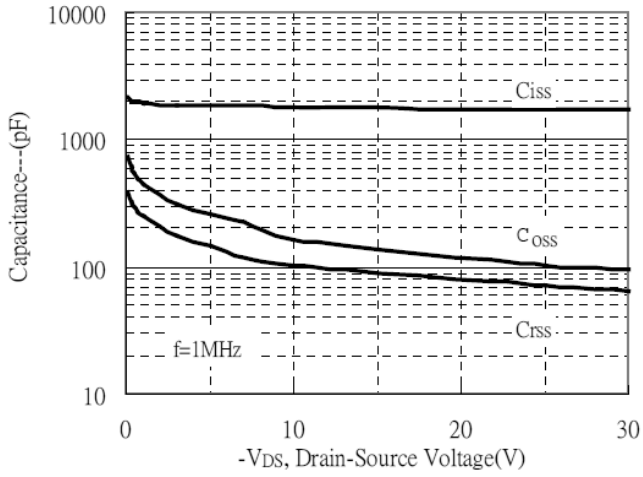
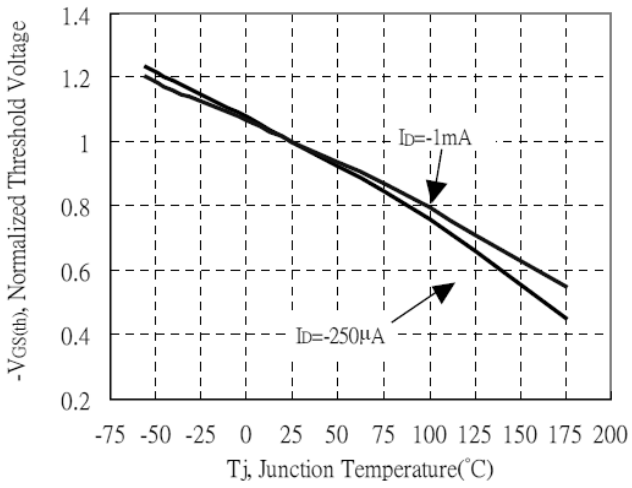
TYPICAL CHARACTERISTICS CURVE

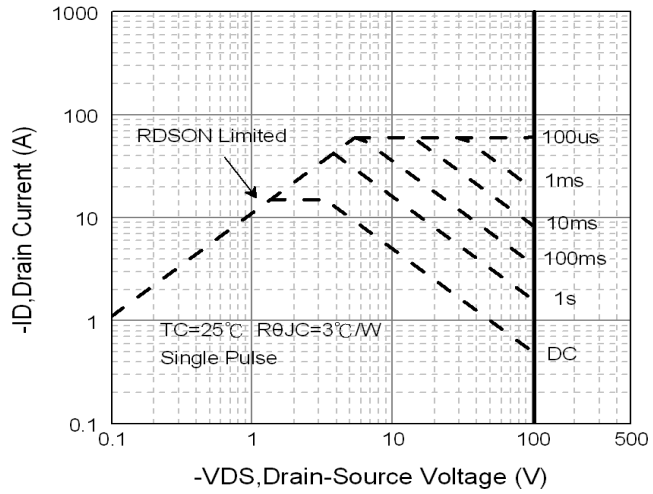
Capacitance vs Drain-to-Source Voltage



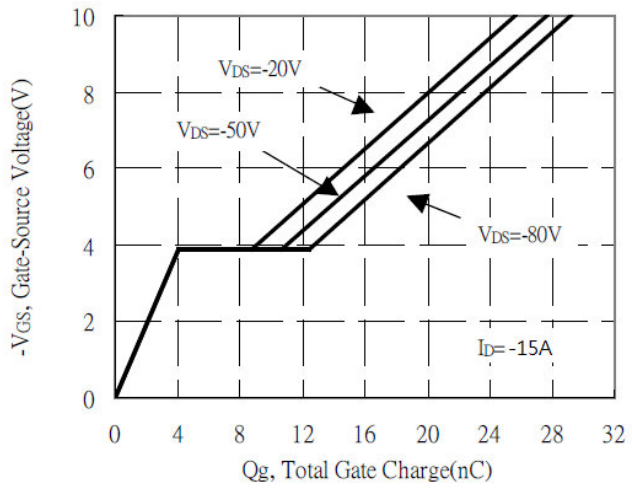
Threshold Voltage vs Junction Tempearture



Maximum Safe Operating Area



Gate Charge Characteristics



Transient Thermal Response Curves