Elektronische Bauelemente

SSG9435BDY-C

-5.3A, -30V, $R_{DS(ON)}$ 36mΩ

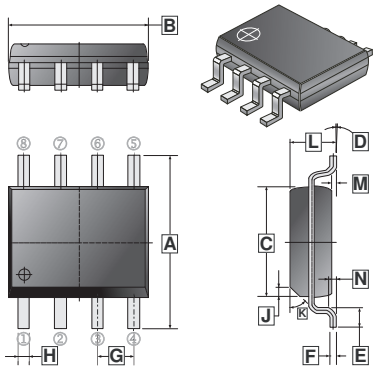
P-Ch Enhancement Mode Power MOSFET

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

DESCRIPTION

The SSG9435BDY-C provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness. The SOP-8 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

SOP-8

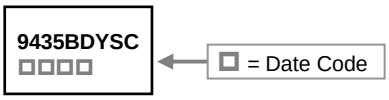


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	H	0.35	0.49
B	4.80	5.00	J	0.375 REF.	
C	3.80	4.00	K	45°	
D	0°	8°	L	1.35	1.75
E	0.40	0.90	M	0.10	0.25
F	0.19	0.25	N	0.25 REF.	
G	1.27 TYP.				

FEATURES

- Simple Drive Requirement
- Lower On-resistance
- Fast Switching

MARKING

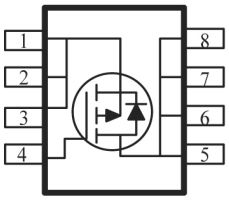


PACKAGE INFORMATION

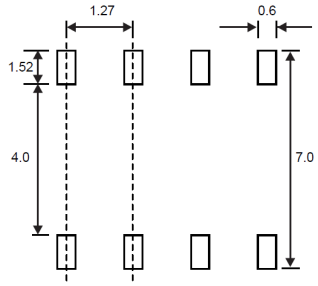
Package	MPQ	Leader Size
SOP-8	2.5K	13 inch

ORDER INFORMATION

Part Number	Type
SSG9435BDY-C	Lead (Pb)-free and Halogen-free



Mounting Pad Layout



*Dimensions in millimeters

MAXIMUM RATINGS (T_A=25℃ unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_A=25℃	I_D	-5.3	A
	T_A=70℃		-4.7	A
Pulsed Drain Current [2]		I_{DM}	-20	A
Total Power Dissipation [1]		P_D	2.5	W
Linear Derating Factor			0.02	W/℃
Operating Junction & Storage Temperature		T_J, T_{STG}	-55~150	℃
Thermal Resistance Ratings				
Thermal Resistance Junction-ambient [1] (Max.)		$R_{\theta JA}$	50	℃/W

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	-30	-	-	V	V_{GS}=0, I_D= -250μA
Gate Threshold Voltage	$V_{GS(th)}$	-1.0	-	-2.5	V	V_{DS}=V_{GS}, I_D= -250μA
Forward Transconductance [2]	g_{fs}	-	5	-	S	V_{DS}= -5V, I_D= -5.3A
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±20V
Drain-Source Leakage Current	I_{DSS}	-	-	-1	μA	V_{DS}= -30V, V_{GS}=0
Static Drain-Source On-Resistance [2]	$R_{DS(ON)}$	-	-	36	mΩ	V_{GS}= -10V, I_D= -5.3A
		-	-	55		V_{GS}= -4.5V, I_D= -4.2A
Total Gate Change [2]	Q_g	-	9.8	-	nC	I_D= -6A V_{DS}= -20V V_{GS}= -4.5V
Gate-Source Charge	Q_{gs}	-	2.2	-		
Gate-Drain("Miller") Change	Q_{gd}	-	3.4	-		
Turn-on Delay Time [2]	$T_{d(On)}$	-	16.4	-	nS	V_{DS}= -24V I_D= -1A V_{GS}= -10V R_G=3.3Ω
Rise Time	T_r	-	20.2	-		
Turn-off Delay Time	$T_{d(OFF)}$	-	55	-		
Fall Time	T_f	-	10	-		
Input Capacitance	C_{iss}	-	930	-	pF	V_{GS}=0 V_{DS}= -15V f=1MHz
Output Capacitance	C_{oss}	-	148	-		
Reverse Transfer Capacitance	C_{rss}	-	115	-		
Source-Drain Diode						
Forward on Voltage [2]	V_{SD}	-	-0.84	-1.2	V	I_S= -1.7A, V_{GS}=0V

Notes:
1. Surface mounted on 1 inch^2 copper pad of FR-4 board; 125℃/W when mounted on min. copper pad.
2. Pulse width limited by Max. junction temperature.

CHARACTERISTICS CURVE

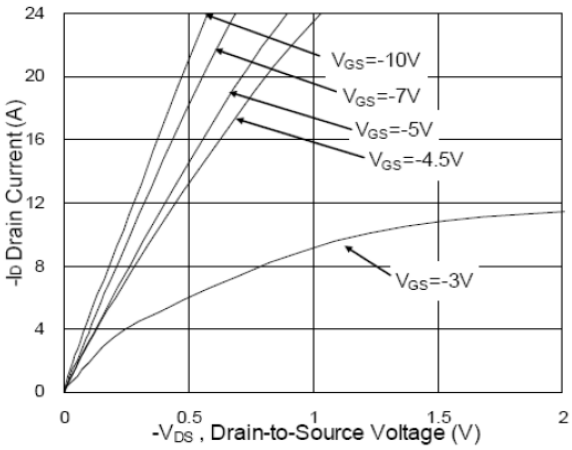


Fig 1. Typical Output Characteristics

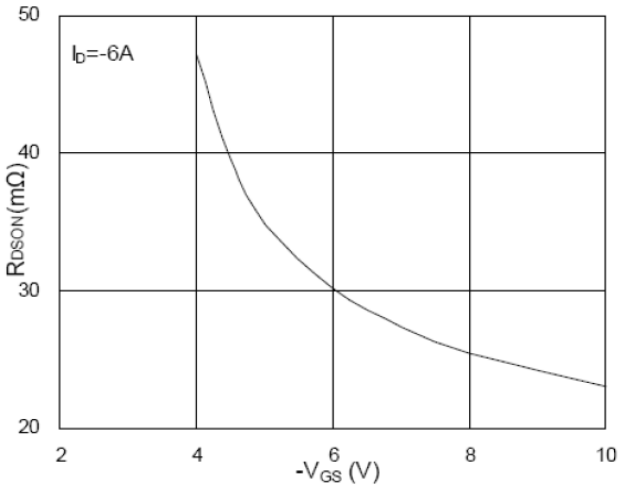


Fig 2. On-Resistance v.s. Gate Voltage

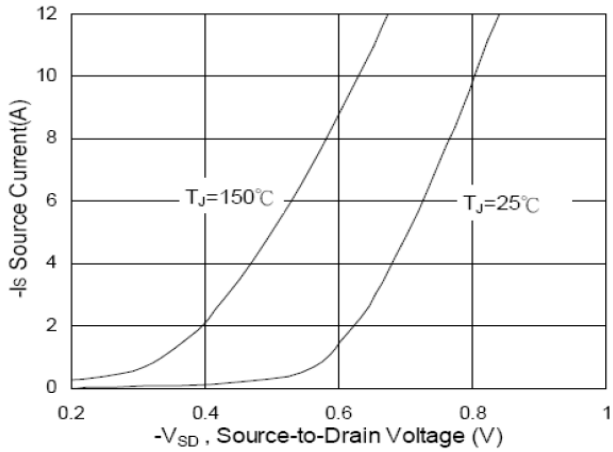


Fig 3. Body Diode Forward Voltage v.s. Source Current

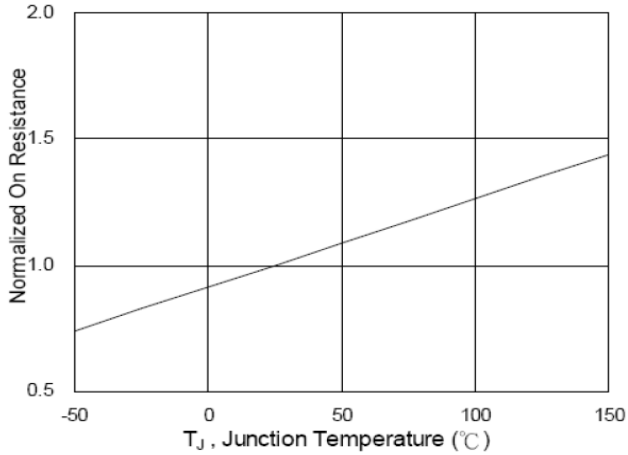


Fig 4. On-Resistance v.s. Junction Temperature

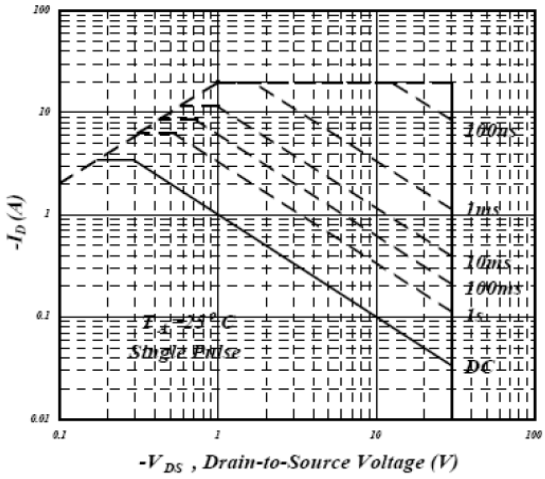


Fig 5. Maximum Safe Operating Area

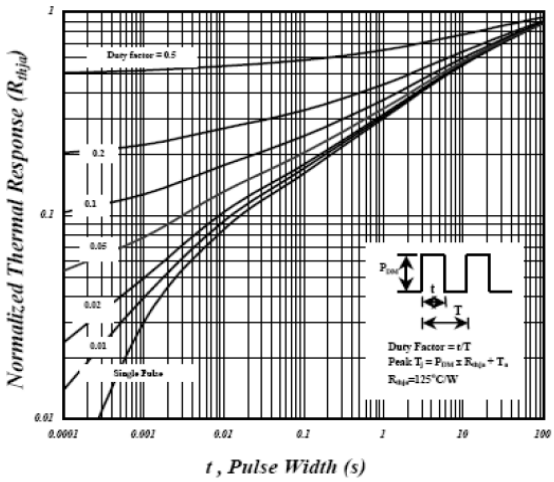


Fig 6. Normalized Thermal Transient Impedance Curve

CHARACTERISTICS CURVE

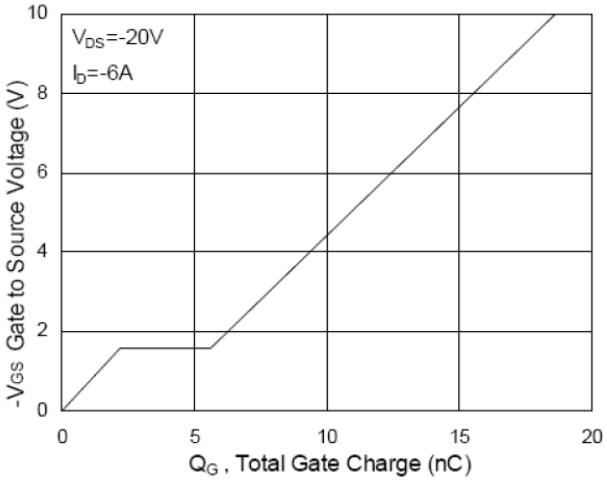


Fig 7. Gate Charge Characteristics

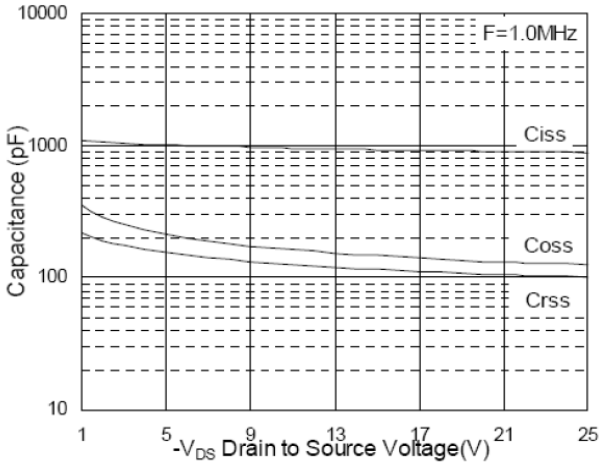


Fig 8. Typical Capacitance Characteristics

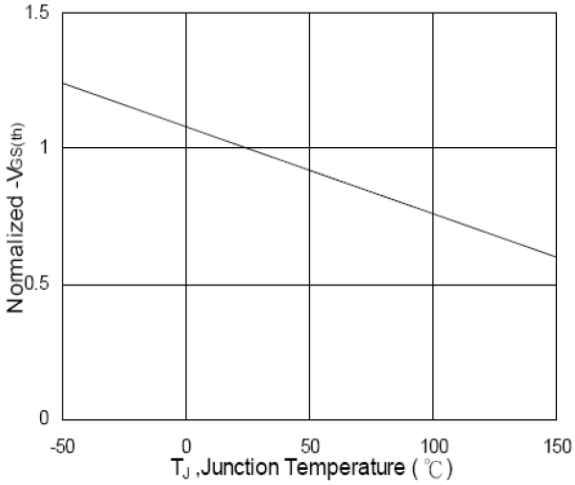


Fig 9. Gate Threshold Voltage v.s. Junction Temperature

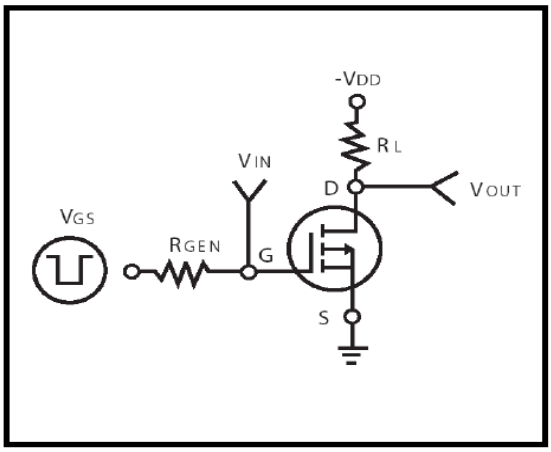


Fig 10. Switching Time Circuit

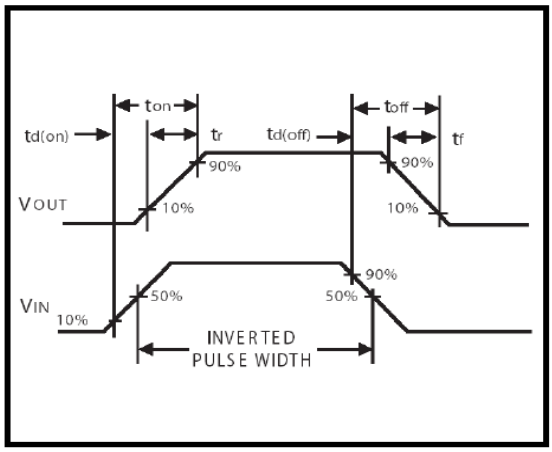


Fig 11. Switching Time Waveform