

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

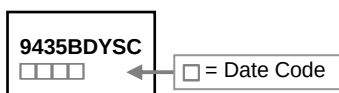
DESCRIPTION

The SSG9435BDY 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.

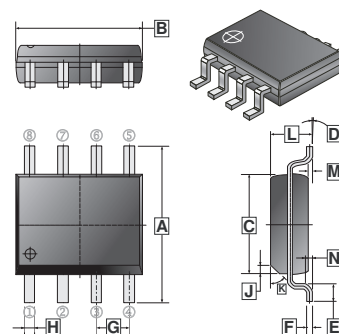
FEATURES

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

MARKING



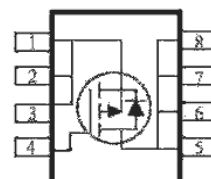
SOP-8



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.			

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOP-8	3K	13 inch



MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ 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	$T_A = 25^\circ\text{C}$	I_D	-5.3	A
	$T_A = 70^\circ\text{C}$		-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 / $^\circ\text{C}$
Operating Junction & Storage temperature		T_J, T_{STG}	-55~150	$^\circ\text{C}$
Thermal Resistance Ratings				
Thermal Resistance Junction-ambient ¹ (Max.)		$R_{\theta JA}$	50	$^\circ\text{C} / \text{W}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	-30	-	-	V	$V_{GS}=0$, $I_D= -250\mu A$
Gate Threshold Voltage	$V_{GS(th)}$	-1.0	-	-2.5	V	$V_{DS}=V_{GS}$, $I_D= -250\mu A$
Forward Transconductance ²	g_{fs}	-	5	-	S	$V_{DS}= -5V$, $I_D= -5.3A$
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	$V_{GS}= \pm 20V$
Dreain-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	$V_{DS}= -24V$ $I_D= -1A$ $V_{GS}= -10V$ $R_G=3.3\Omega$
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	$V_{GS}=0$ $V_{DS}= -15V$ $f=1.0MHz$
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	$I_S= -1.7A$, $V_{GS}=0V$

Note:

1. Surface mounted on 1 in² copper pad of FR4 board; 125°C/W when mounted on min. copper pad.
2. Pulse width limited by Max. junction temperature.

CHARACTERISTICS CURVE

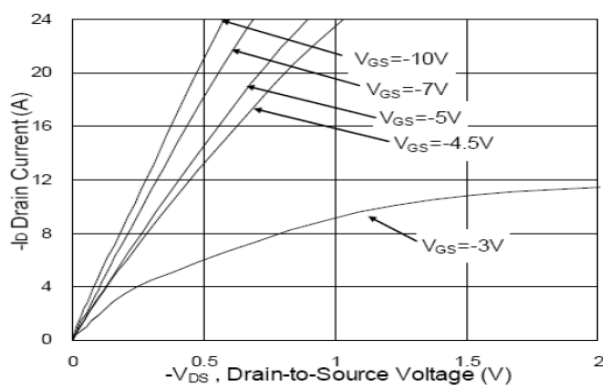


Fig 1. Typical Output Characteristics

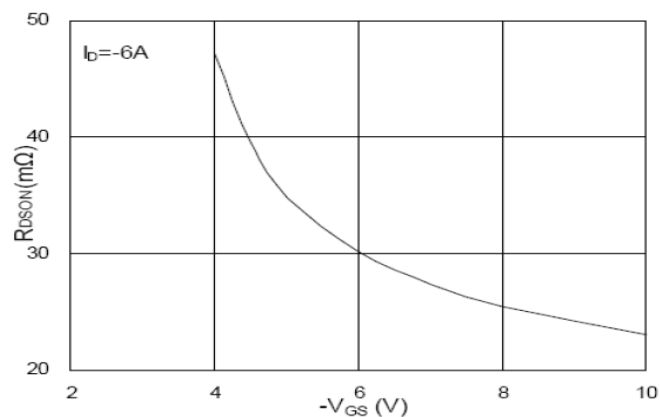


Fig 2. On-Resistance v.s. Gate Voltage

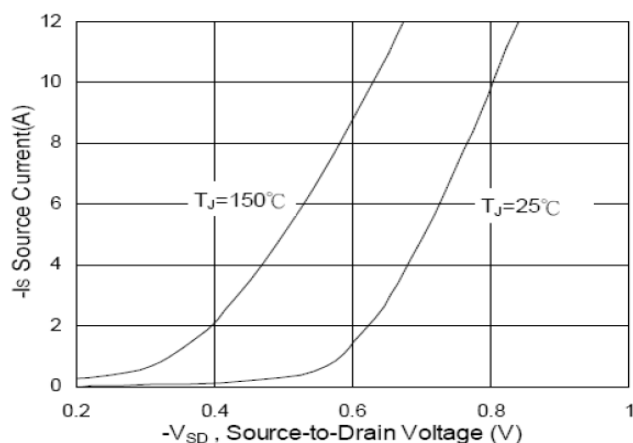


Fig 3. Body Diode Forward Voltage v.s. Source Current

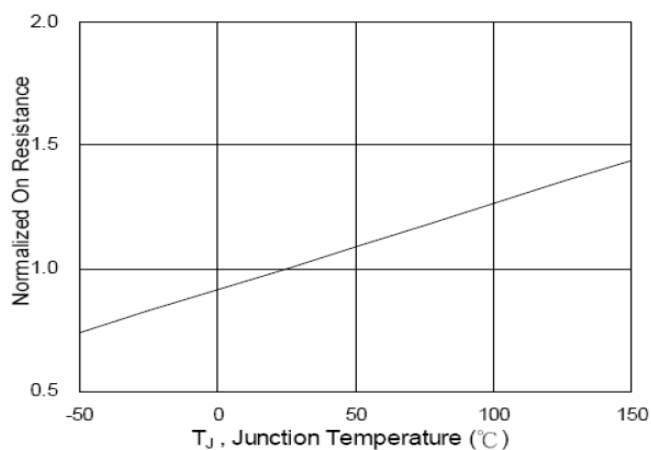


Fig 4. On-Resistance v.s. Junction Temperature

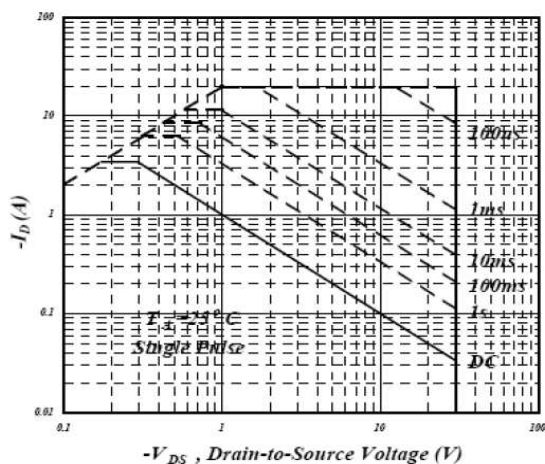


Fig 5. Maximum Safe Operating Area

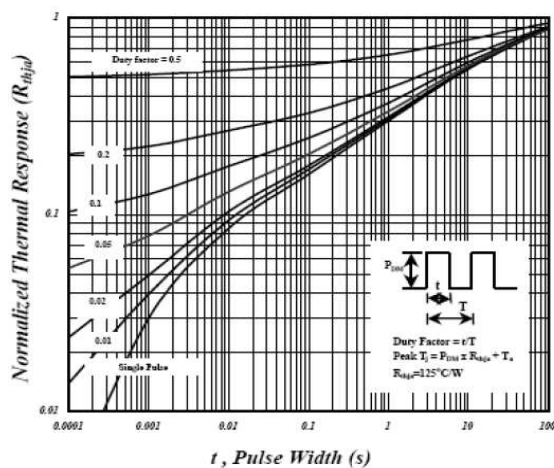


Fig 6. Normalized Thermal Transient Impedance Curve

CHARACTERISTICS CURVE

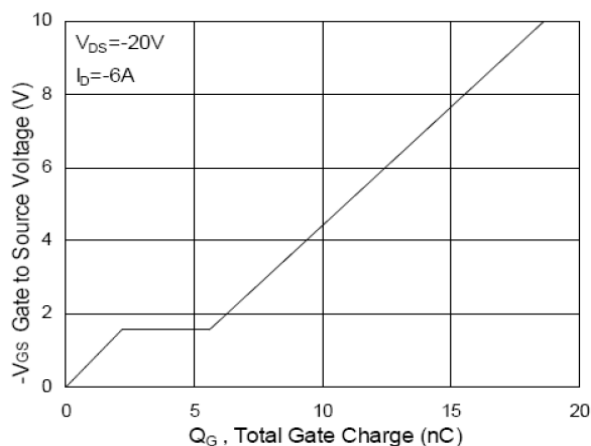


Fig 7. Gate Charge Characteristics

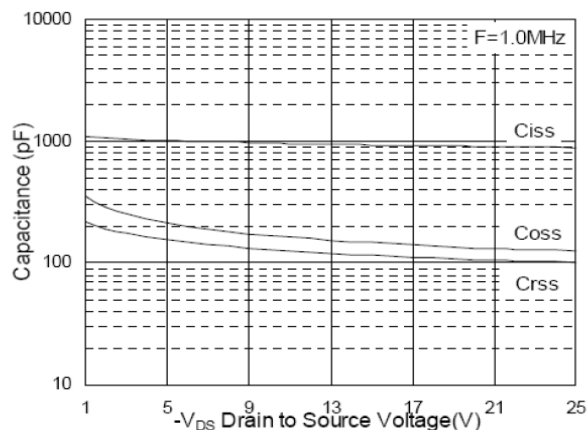
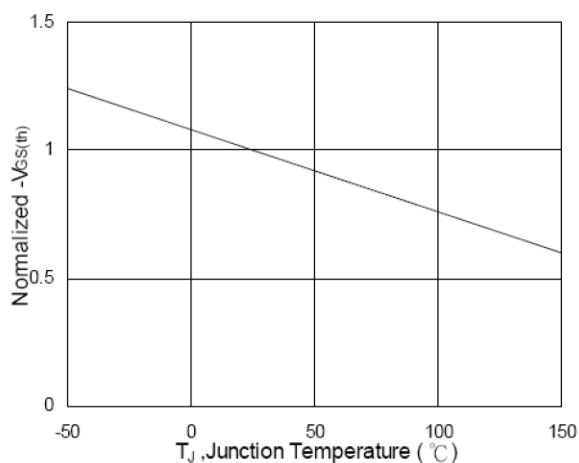


Fig 8. Typical Capacitance Characteristics



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

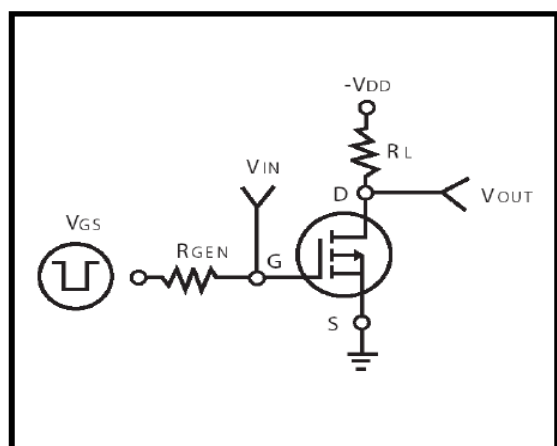


Fig 10. Switching Time Circuit

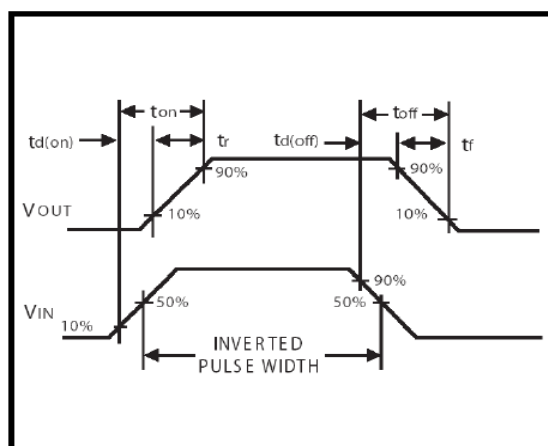


Fig 11. Switching Time Waveform