Elektronische Bauelemente

SSG4435

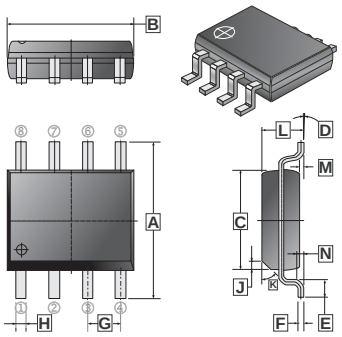
-8A, -30V, $R_{DS(ON)}$ 20mΩ
P-Channel Enhancement Mode Power MOSFET

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

DESCRIPTION

The SSG4435 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

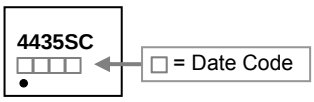


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	H	0.35	0.49
B	4.80	5.00	J	0.375 REF.	
C	3.80	4.00	K	45°	
D	0°	8°	L	1.35	1.75
E	0.40	0.90	M	0.10	0.25
F	0.19	0.25	N	0.25 REF.	
G	1.27 TYP.				

FEATURES

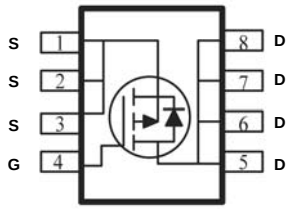
- Low on-resistance
- Simple Drive Requirement
- Fast switching

MARKING



PACKAGE INFORMATION

Package	MPQ	LeaderSize
SOP-8	3K	13' inch



ABSOLUTE MAXIMUM RATINGS (T_A = 25°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 [3]	T_A = 25°C	I_D	-8	A
	T_A = 70°C		-6	
Pulsed Drain Current [1.2]		I_{DM}	-50	A
Power Dissipation		P_D	2.5	W
Maximum Junction to Ambient [3]		$R_{\theta JA}$	50	°C / W
Linear Derating Factor			0.02	W / °C
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	°C

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

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test condition
Static							
Drain-Source Breakdown Voltage		BV_{DSS}	-30	-	-	V	V_{GS}=0, I_D=-250μA
Breakdown Voltage Temp. Coefficient		$\triangle BV_{DS}/\triangle T_j$	-	-0.037	-	V / °C	Reference to 25°C, I_D= -1mA
Gate-Threshold Voltage		$V_{GS(th)}$	-1	-	-3	V	V_{DS}=V_{GS}, I_D= -250μA
Forward Transfer Conductance		G_{fs}	-	20	-	S	V_{DS}= -10V, I_D= -8A
Gate-Body Leakage		I_{GSS}	-	-	±100	nA	V_{GS}=±20V
Zero Gate Voltage Drain Current	T_A = 25°C	I_{DSS}	-	-	-1	μA	V_{DS}= -30V, V_{GS}=0
	T_A = 70°C		-	-	-5	μA	V_{DS}= -24V, V_{GS}=0
Drain-Source On-Resistance [2]		$R_{DS(ON)}$	-	-	20	mΩ	V_{GS}= -10V, I_D= -8A
			-	-	35		V_{GS}= -4.5V, I_D= -5A
Total Gate Charge [2]		Q_g	-	12.4	-	nC	I_D= -12A V_{DS}= -20V V_{GS}= -4.5V
Gate-Source Charge		Q_{gs}	-	3.4	-		
Gate-Drain ("Miller") Charge		Q_{gd}	-	5.1	-		
Turn-On Delay Time [2]		$T_{d(on)}$	-	24.2	-	nS	V_{DS}= -15V I_D= -1A V_{GS}= -10V R_G=3.3Ω
Rise Time		T_r	-	23.8	-		
Turn-Off Delay Time		$T_{d(off)}$	-	58.2	-		
Fall Time		T_f	-	9	-		
Input Capacitance		C_{iss}	-	1345	-	pF	V_{GS}=0 V_{DS}= -15V f=1.0MHz
Output Capacitance		C_{oss}	-	194	-		
Reverse Transfer Capacitance		C_{rss}	-	158	-		
Source-Drain Diode							
Forward On Voltage [2]		V_{DS}	-	-0.75	-1.2	V	I_S= -2.1A, V_{GS}=0, T_j=25°C
Continuous Source Current (Body Diode)		I_s	-	-	-2.1	A	V_D=V_G=0V, V_S= -1.2V
Pulsed Source Current (Body Diode) [1]		I_{SM}	-	-	-50	A	

Notes:
1 Pulse width limited by Max. junction temperature.
2 Pulse width≦300us, duty cycle≦2%.
3 Surface mounted on 1 in^2 copper pad of FR4 board; 125°C/W when mounted on min. copper pad.

CHARACTERISTICS CURVE

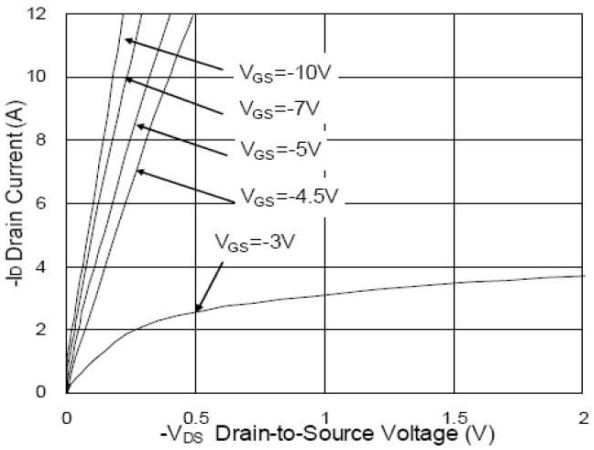


Fig 1. Typical Output Characteristics

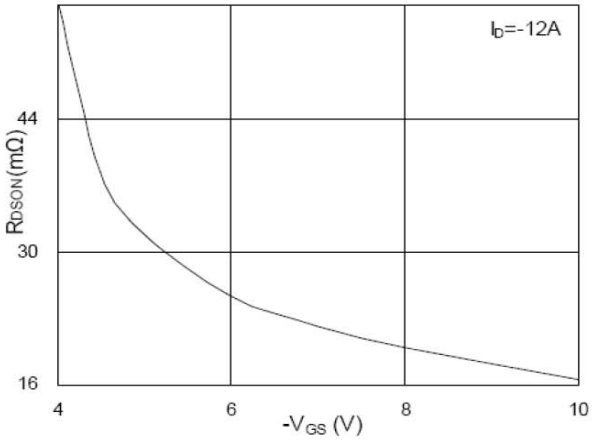


Fig 2. On-Resistance v.s. Gate Voltage

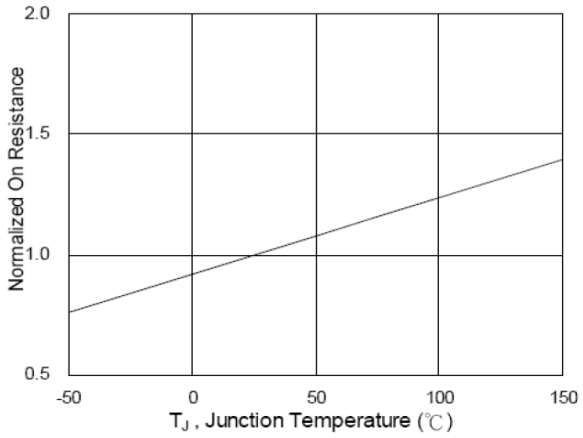


Fig 3. Normalized On-Resistance v.s. Junction Temperature

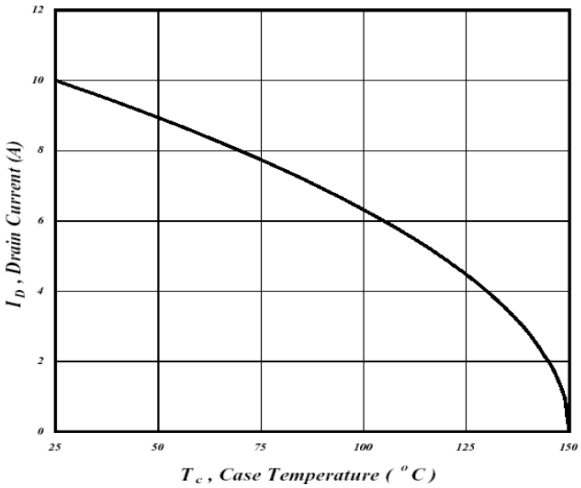


Fig 4. Maximum Drain Current v.s. Case Temperature

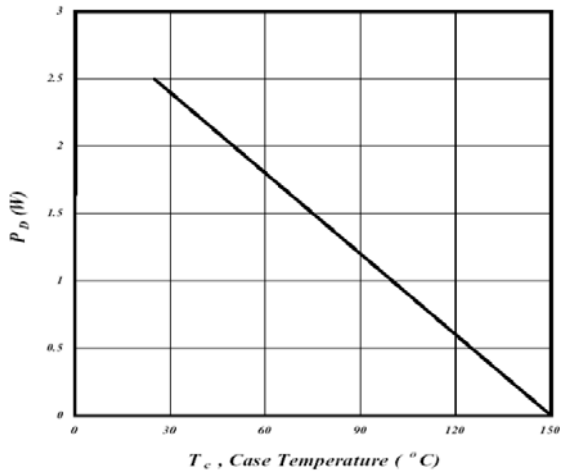


Fig 5. Type Power Dissipation

CHARACTERISTICS CURVE

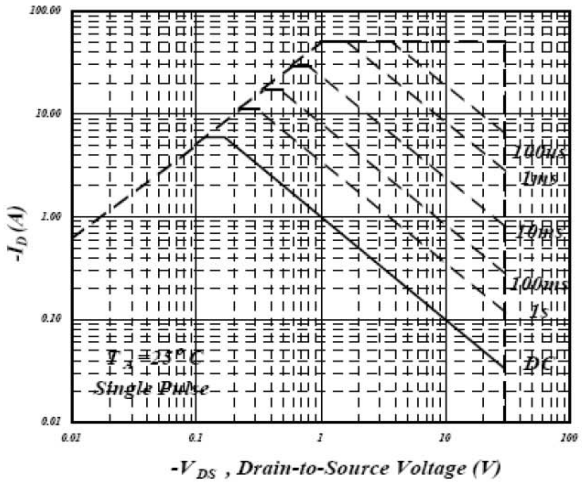


Fig 6. Maximum Safe Operating Area

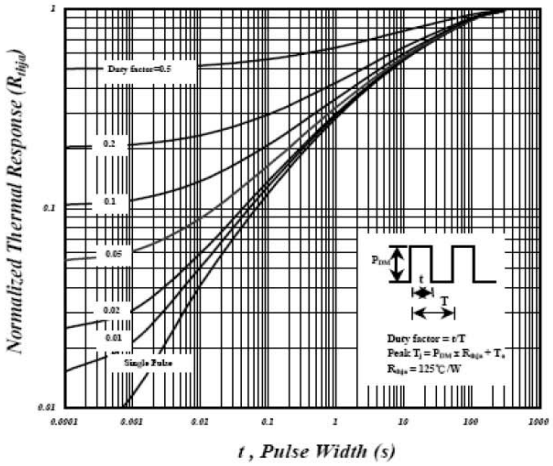


Fig 7. Effective Transient Thermal Impedance

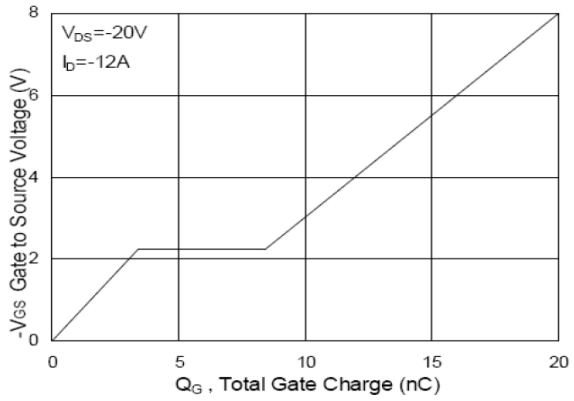


Fig 8. Gate Charge Characteristics

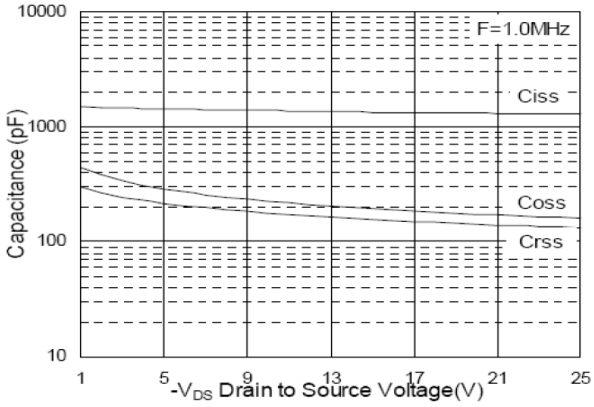


Fig 9. Typical Capacitance Characteristics

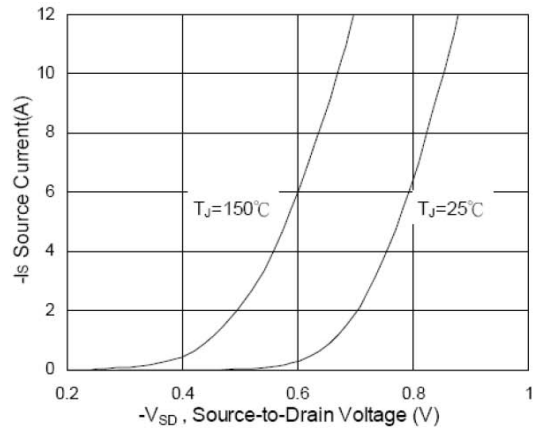


Fig 10. Forward Characteristics of Reverse Diode

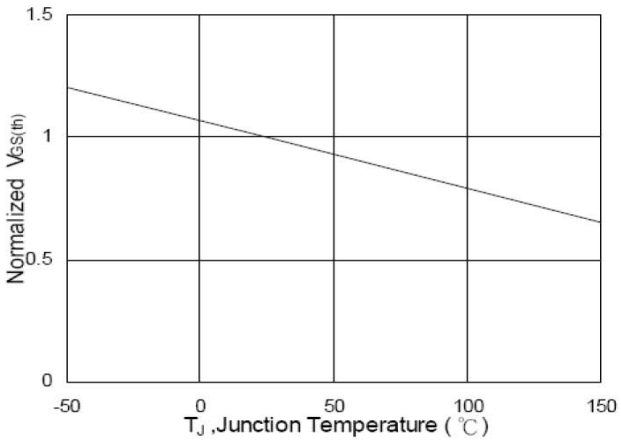


Fig 11. Gate Threshold Voltage v.s. Junction Temperature