Elektronische Bauelemente

SSE9575

-15 A, -60 V, $R_{DS(ON)}$ 90 mΩ
P-Channel Enhancement Mode Power Mos.FET

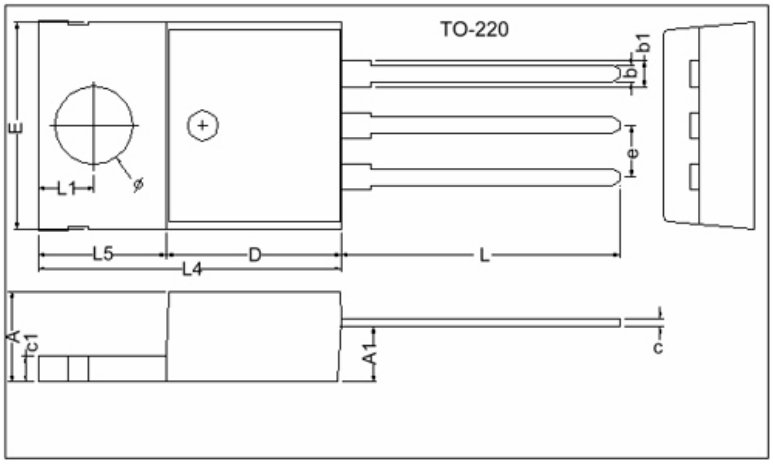
DESCRIPTION

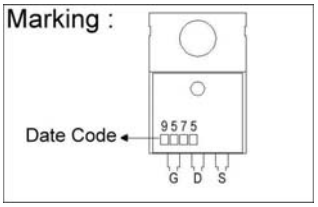
The SSE9575 provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness. The through-hole version (TO-220) is available for low-profile applications and suited for low voltage applications such as DC/DC converters.

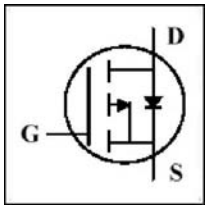
FEATURES

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

PACKAGE DIMENSIONS







REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.40	4. 80	c1	1.25	1.45
b	0.76	1.00	b1	1.17	1.47
c	0.36	0.50	L	13.25	14.25
D	8.60	9.00	e	2.54 REF.	
E	9.80	10.4	L1	2.60	2.89
L4	14.7	15.3	Ø	3.71	3.96
L5	6.20	6.60	A1	2.60	2.80

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	±25	V
Drain Current[3] ,VGS@ 10V	I_D @Ta=25℃	-15	A
Drain Current[3] ,VGS@ 10V	I_D @Ta=100℃	-9.5	A
Pulsed Drain Current[1,]	I_{DM}	-45	A
Power Dissipation	P_D @Ta=25℃	36	W
Operating Junction and Storage Temperature Range	Tj, Tstg	-55 ~ +150	℃
Linear Derating Factor		0.29	W/℃

THERMAL DATA

Parameter		Symbol	Value	Unit
Thermal Resistance Junction-case	Max.	Rθj-case	3.5	℃ / W
Thermal Resistance Junction-ambient	Max.	Rθj-amb	125	℃ / W

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	-60	-	-	V	V_{GS}=0, I_D=250uA
Breakdown Voltage Temp. Coefficient	$\triangle BV_{DSS}/\triangle Tj$	-	-0.04	-	V/℃	Reference to 25℃, I_D=-1mA
Gate Threshold Voltage	$V_{GS(th)}$	-1.0	-	-3.0	V	V_{DS}=V_{GS}, I_D=250uA
Forward Transconductance	g_{fs}	-	7	-	S	V_{DS}=-15V, I_D=-3.5A
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±25V
Drain-Source Leakage Current(Tj=25℃)	I_{DSS}	-	-	-1	uA	V_{DS}=-60V, V_{GS}=0
Drain-Source Leakage Current(Tj=150℃)		-	-	-25	uA	V_{DS}=-48V, V_{GS}=0
Static Drain-Source On-Resistance[2]	$R_{DS(ON)}$	-	-	90	mΩ	V_{GS}=-10V, I_D=-12A
		-	-	120		V_{GS}=-4.5V, I_D=-9A
Total Gate Charge[2]	Q_g	-	17	27	nC	I_D=-9A V_{DS}=-48V V_{GS}=-4.5V
Gate-Source Charge	Q_{gs}	-	5	-		
Gate-Drain (“Miller”) Change	Q_{gd}	-	6	-		
Turn-on Delay Time[2]	$T_{d(on)}$	-	10	-	ns	V_{DS}=-30V I_D=-9A V_{GS}=-10V R_G=3.3Ω R_D=3.3Ω
Rise Time	T_r	-	19	-		
Turn-off Delay Time	$T_{d(off)}$	-	46	-		
Fall Time	T_f	-	53	-		
Input Capacitance	C_{iss}	-	1660	2660	pF	V_{GS}=0V V_{DS}=-25V f=1.0MHz
Output Capacitance	C_{oss}	-	160	-		
Reverse Transfer Capacitance	C_{rss}	-	100	-		

SOURCE-DRAIN DIODE

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Forward On Voltage[2]	V_{SD}	-	-	-1.2	V	I_S=1.7A, V_{GS}=0, Tj=25℃
Reverse Recovery Time[2]	T_{rr}	-	56	-	ns	I_S = -9A, V_{GS} = 0V, dI/dt = 100A/us
Reverse Recovery Charge	I_S	-	159	-	nC	

Notes: 1. Pulse width limited by safe operating area.
2. Pulse width≦300us, duty cycle≦2%.

CHARACTERISTIC CURVE

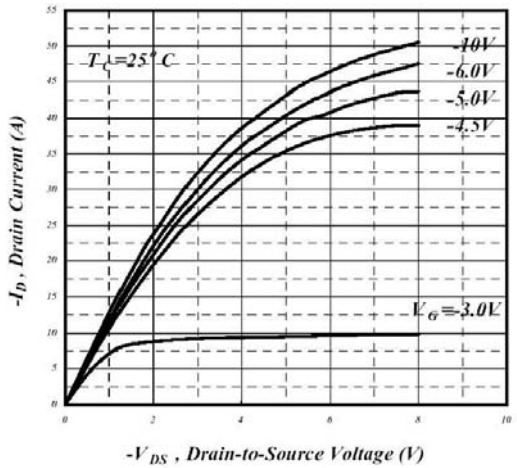


Fig 1. Typical Output Characteristics

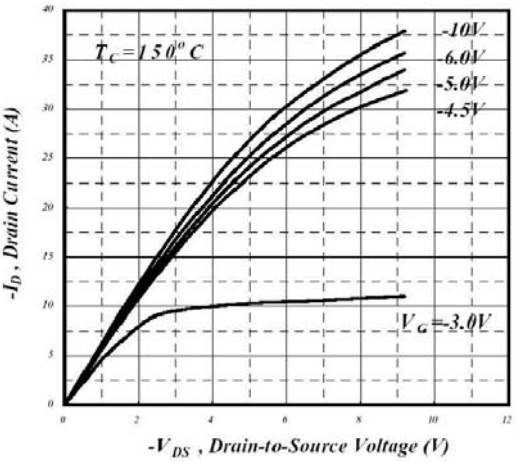


Fig 2. Typical Output Characteristics

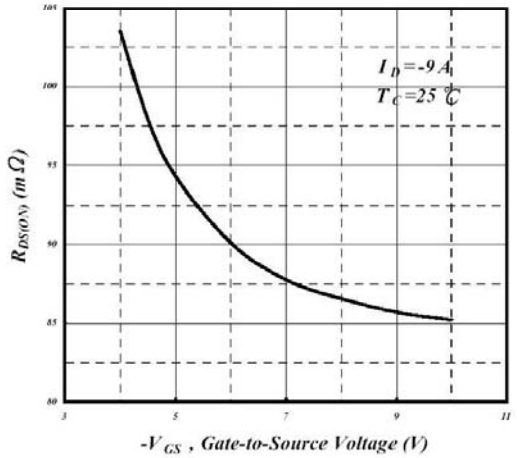


Fig 3. On-Resistance vs. Gate Voltage

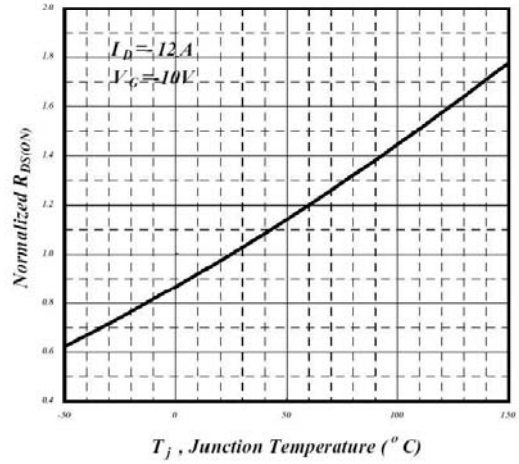


Fig 4. Normalized On-Resistance vs. Junction Temperature

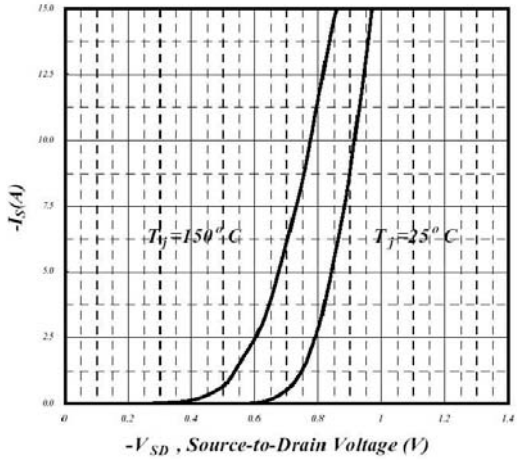


Fig 5. Forward Characteristics of Reverse Diode

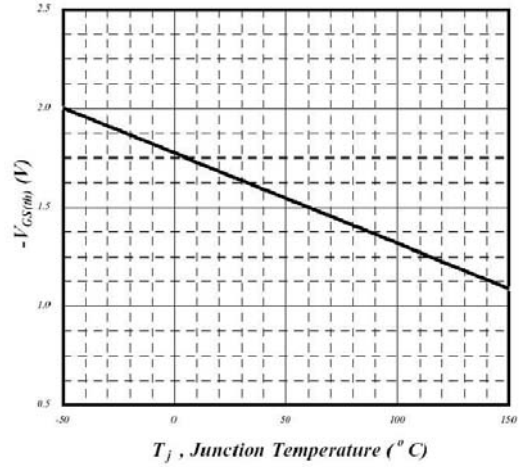


Fig 6. Gate Threshold Voltage vs. Junction Temperature

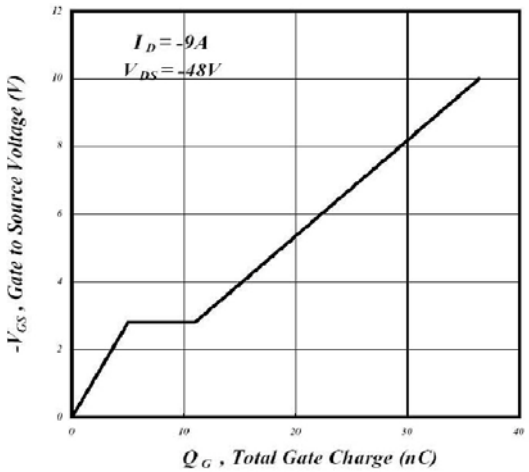


Fig 7. Gate Charge Characteristics

f=1.0MHz

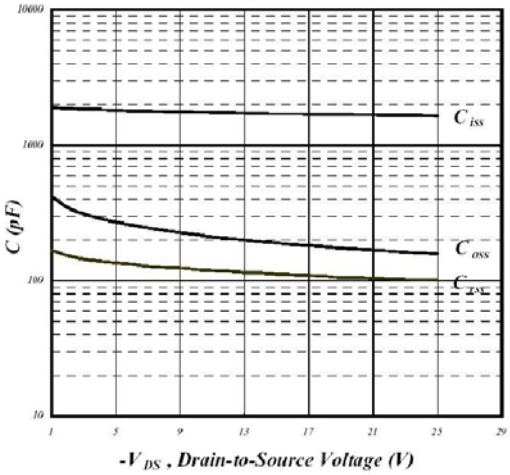


Fig 8. Typical Capacitance Characteristics

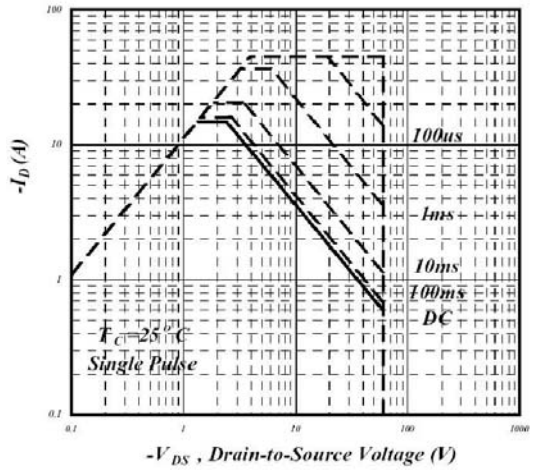


Fig 9. Maximum Safe Operating Area

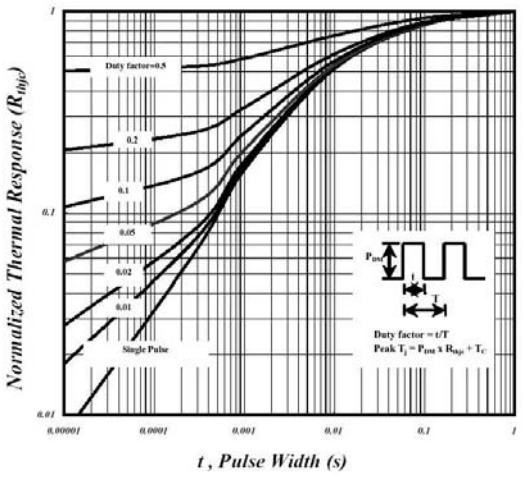


Fig 10. Effective Transient Thermal Impedance

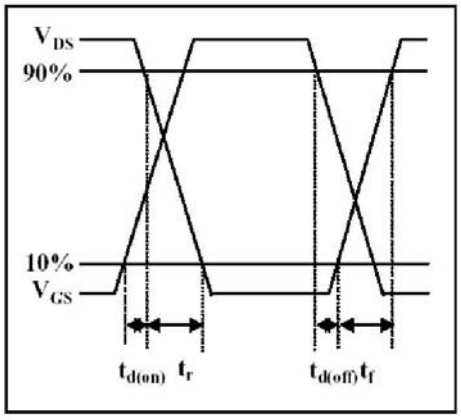


Fig 11. Switching Time Waveform

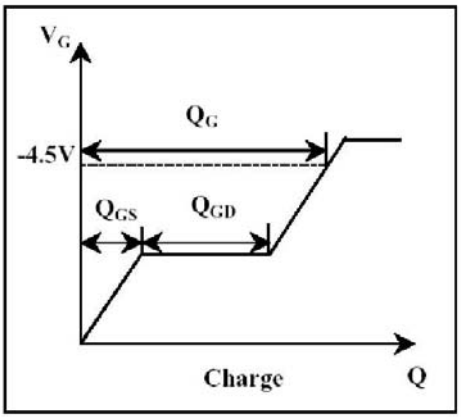


Fig 12. Gate Charge Waveform