Elektronische Bauelemente

SST2007-C

-9A, -20V, $R_{DS(ON)}$ 24mΩ

P-Channel Enhancement Mode Power MOSFET

RoHS Compliant Product

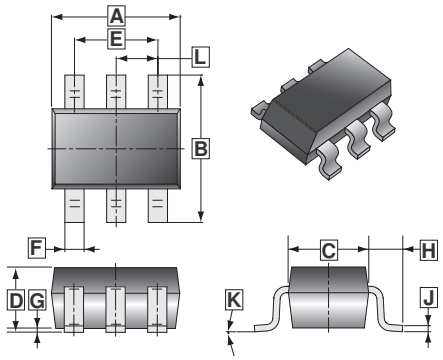
A suffix of "-C" specifies halogen and lead-free

DESCRIPTION

The SST2007-C provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost effectiveness.

The SOT-26 package is universally preferred for all commercial industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

SOT-26

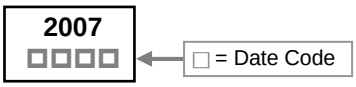


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0	0.10
B	2.60	3.00	H	0.60 REF.	
C	1.40	1.80	J	0.12 REF.	
D	1.30 MAX.		K	0°	10°
E	1.90 REF.		L	0.95 REF.	
F	0.25	0.50			

FEATURES

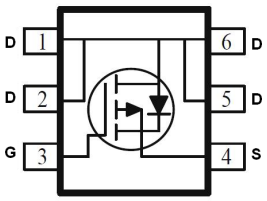
- Simple Drive Requirement
- Low On-Resistance
- Fast Switching
- Green Device Available

MARKING



PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-26	3K	7 inch



ORDER INFORMATION

Part Number	Type
SST2007-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current [1], @V_{GS}= -4.5V	T_C=25℃	I_D	-9	A
	T_C=100℃		-6.3	
	T_A=25℃		-5.5	
	T_A=70℃		-4.4	
Pulsed Drain Current [3]		I_{DM}	-30	A
Total Power Dissipation	T_A=25℃	P_D	1.1	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	℃
Thermal Resistance Ratings				
Thermal Resistance from Junction-Ambient [1]		$R_{\theta JA}$	110	℃/W
Thermal Resistance from Junction-Ambient [2]			156	
Thermal Resistance from Junction-Case [1]		$R_{\theta JC}$	39	

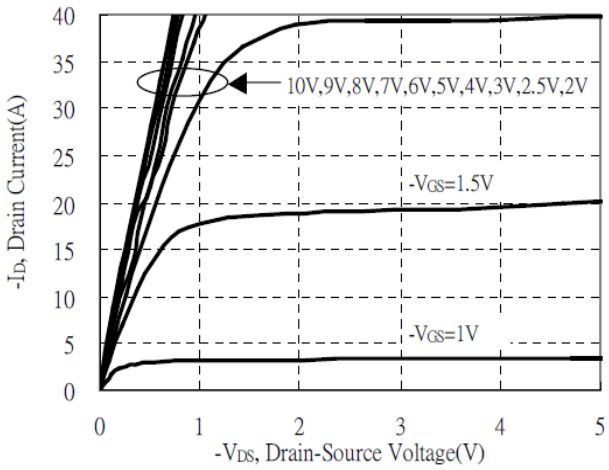
ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage		BV_{DSS}	-20	-	-	V	V_{GS}=0, I_D= -250μA
Gate Threshold Voltage		$V_{GS(th)}$	-0.3	-	-0.9	V	V_{DS}=V_{GS}, I_D= -250μA
Forward Transconductance		g_{fs}	-	19.1	-	S	V_{DS}= -5V, I_D= -4.5A
Gate-Source Leakage Current		I_{GSS}	-	-	±100	nA	V_{GS}= ±12V
Drain-Source Leakage Current	T_J=25℃	I_{DSS}	-	-	-1	μA	V_{DS}= -16V, V_{GS}=0
	T_J=55℃		-	-	-5		
Static Drain-Source On-Resistance [4]		$R_{DS(ON)}$	-	-	24	mΩ	V_{GS}= -4.5V, I_D= -4A
			-	-	26		V_{GS}= -2.5V, I_D= -2A
			-	-	32		V_{GS}= -1.8V, I_D= -1A
Total Gate Charge		Q_g	-	24.5	-	nC	I_D= -4.5A V_{DS}= -10V V_{GS}= -4.5V
Gate-Source Charge		Q_{gs}	-	2.9	-		
Gate-Drain Charge		Q_{gd}	-	4.9	-		
Turn-on Delay Time		$T_{d(on)}$	-	6.8	-	nS	V_{DS}= -10V I_D= -1A V_{GS}= -4.5V R_G=6Ω R_L=10Ω
Rise Time		T_r	-	26.6	-		
Turn-off Delay Time		$T_{d(off)}$	-	222.8	-		
Fall Time		T_f	-	115.4	-		
Input Capacitance		C_{iss}	-	2100	-	pF	V_{GS}=0 V_{DS}= -10V f=1MHz
Output Capacitance		C_{oss}	-	213	-		
Reverse Transfer Capacitance		C_{rss}	-	166	-		
Source-Drain Diode							
Continuous Source Current [1]		I_S	-	-	-1.7	A	
Pulsed Source Current [3]		I_{SM}	-	-	-10		
Forward On Voltage [4]		V_{SD}	-	-	-1.2	V	I_S= -1.7A, V_{GS}=0
Reverse Recovery Time		t_{rr}	-	67.5	-	nS	I_F= -1.7A, dI/dt=100A/μs T_J=25℃
Reverse Recovery Charge		Q_{rr}	-	51.6	-	nC	

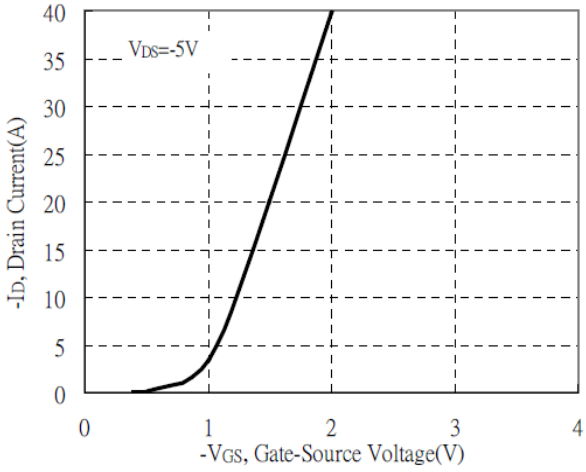
Notes:
1. Surface Mounted on 1inch^2 FR4 Board with 2OZ copper.
2. When mounted on Min. copper pad.
3. Pulse width limited by maximum junction temperature, Pulse Width≦300μs, Duty Cycle≦2%.
4. The data tested by pulsed, Pulse Width≦300μs, Duty Cycle≦2%.

TYPICAL CHARACTERISTICS CURVE

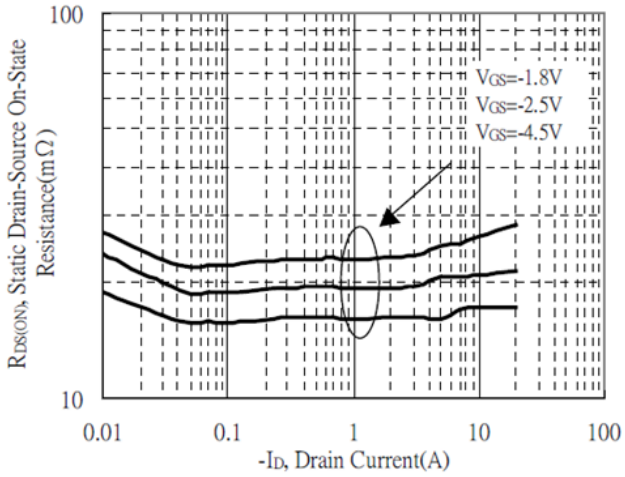
Typical Output Characteristics



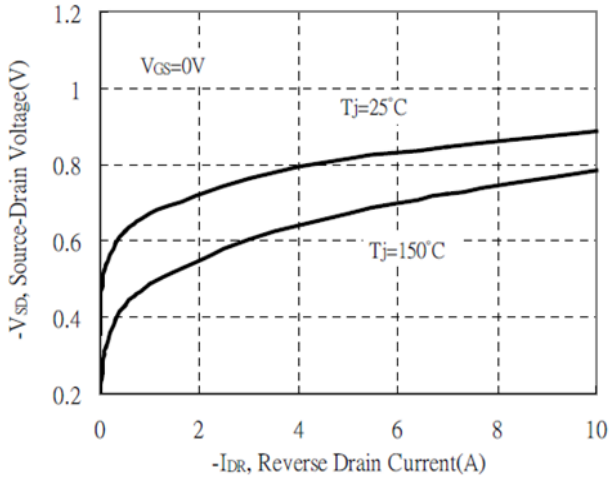
Typical Transfer Characteristics



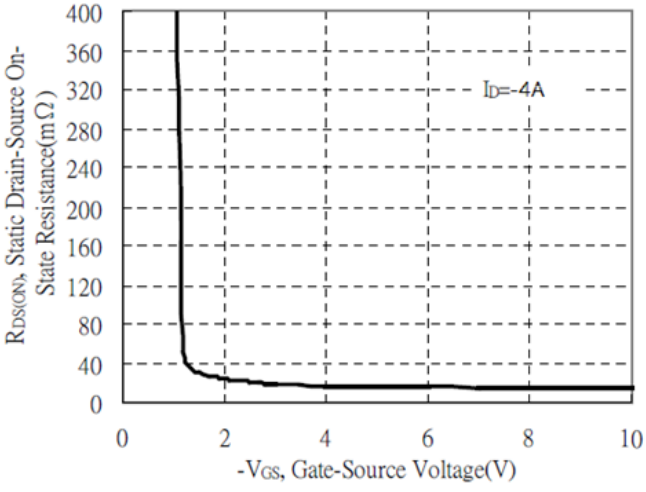
Static Drain-Source On-State resistance vs Drain Current



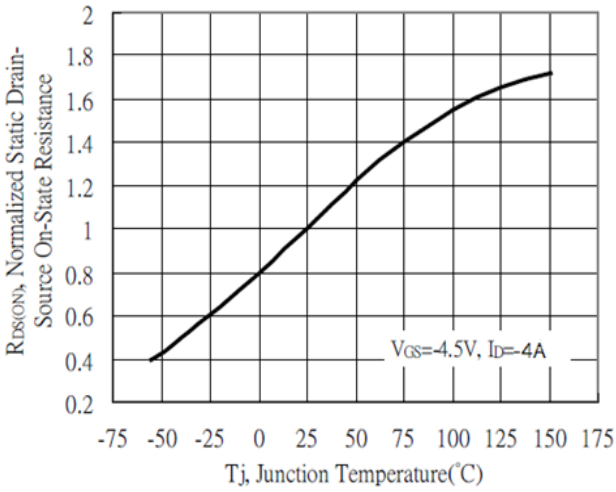
Reverse Drain Current vs Source-Drain Voltage



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

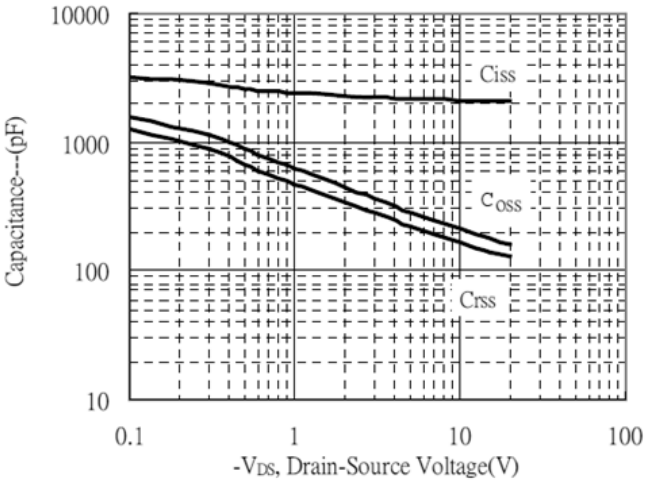


Drain-Source On-State Resistance vs Junction Tempearture

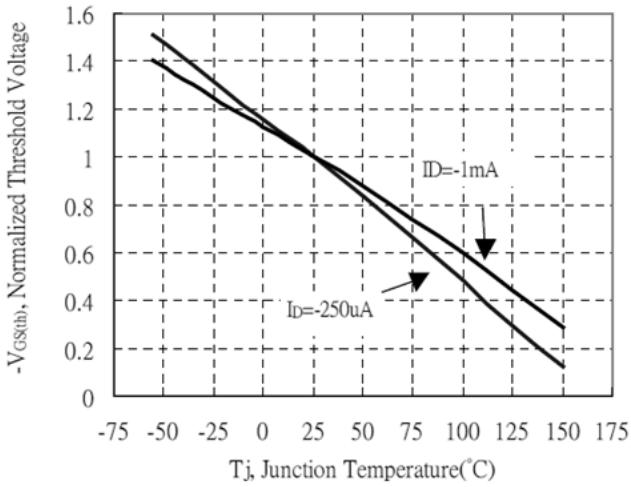


TYPICAL CHARACTERISTICS CURVE

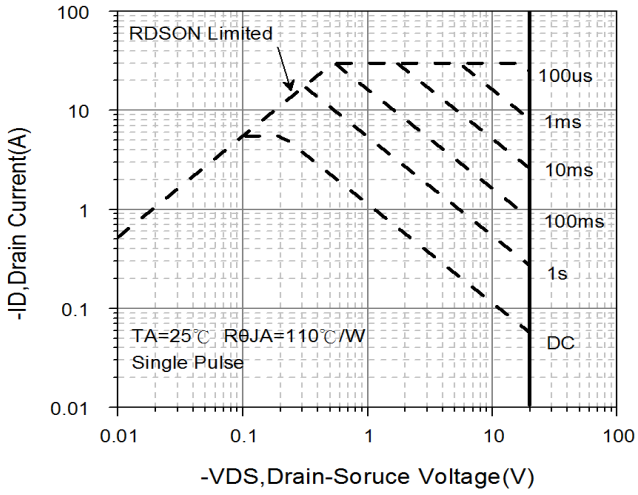
Capacitance vs Drain-to-Source Voltage



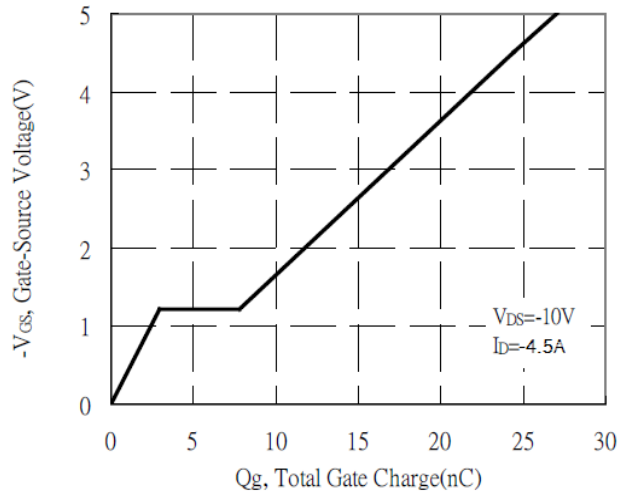
Threshold Voltage vs Junction Tempearture



Safe Operating Area



Gate Charge Characteristics



Transient Thermal Response Curves