Elektronische Bauelemente

SST3439E-C

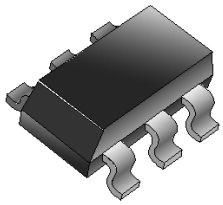
0.5A, 20V, $R_{DS(ON)}$ 280mΩ
-0.5A, -20V, $R_{DS(ON)}$ 850mΩ
N&P-Ch Enhancement Mode Power MOSFET

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

FEATURES

- Trench Power LV MOSFET Technology
- High Dense Cell Design for Low $R_{DS(on)}$
- High Speed Switching
- ESD Protected Up to 2.0KV (HBM)

SOT-26



APPLICATION

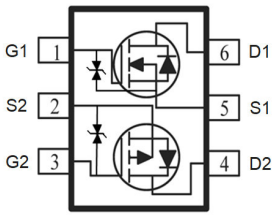
- Interfacing, Logic Switch
- Power Management
- Load Switch

MARKING

49KA

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-26	3K	7 inch



ORDER INFORMATION

Part Number	Type
SST3439E-C	Lead (Pb)-free and Halogen-free

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

Parameter		Symbol	Rating		Unit
			N-Ch	P-Ch	
Drain-Source Voltage		V_{DS}	20	-20	V
Gate-Source Voltage		V_{GS}	±12	±12	V
Drain Current	T_A=25℃	I_D	0.5	-0.5	A
	T_A=70℃		0.4	-0.4	
Pulsed Drain Current [1]		I_{DM}	2.3	-2.3	A
Total Power Dissipation	T_A=25℃	P_D	0.3		W
Thermal Resistance from Junction-Ambient [2]		$R_{\theta JA}$	416		℃/W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150		℃

Notes:
1. Pulse Test: Pulse Width ≤300us, Duty cycle ≤2%.
2. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch

N-CH 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}=0V, I_D=250μA
Gate Threshold Voltage	$V_{GS(th)}$	0.35	0.75	1.1	V	V_{DS}=V_{GS}, I_D=250μA
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{GS}=0V, V_{DS}=20V
Gate-Body Leakage Current	I_{GSS}	-	±1.5	±10	μA	V_{GS}= ±10V, V_{DS}=0V
		-	±0.5	±2		V_{GS}= ±8V, V_{DS}=0V
Static Drain-Source On Resistance	$R_{DS(ON)}$	-	180	280	mΩ	V_{GS}=4.5V, I_D=0.5A
		-	250	400		V_{GS}=2.5V, I_D=0.3A
		-	420	650		V_{GS}=1.8V, I_D=0.2A
Total Gate Charge	Q_g	-	1	-	nC	V_{DS}=10V V_{GS}=4.5V I_D=0.5A
Gate-Source Charge	Q_{gs}	-	0.27	-		
Gate-Drain Charge	Q_{gd}	-	0.21	-		
Turn-On Delay Time	$T_{d(on)}$	-	2.1	-	nS	V_{DS}=10V V_{GS}=4.5V I_D=0.5A R_G=10Ω
Rise Time	T_r	-	17.5	-		
Turn-Off Delay Time	$T_{d(off)}$	-	9.5	-		
Fall Time	T_f	-	22	-		
Input Capacitance	C_{iss}	-	52	-	pF	V_{DS}=10V V_{GS}=0V f=1MHz
Output Capacitance	C_{oss}	-	19	-		
Reverse Transfer Capacitance	C_{rss}	-	2.3	-		
Source Drain Diode						
Maximum Body-Diode Continuous Current	I_S		-	0.5	A	
Diode Forward Voltage	V_{SD}	-	-	1.2	V	I_S=0.5A, V_{GS}=0
Reverse Recovery Time	t_{rr}		14		nS	IF=0.5A, di/dt=20A/μs
Reverse Recovery Charge	Q_{rr}		0.39		nC	

P-CH 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}=0V, I_D= -250μA
Gate Threshold Voltage	$V_{GS(th)}$	-0.35	-0.62	-1.2	V	V_{DS}=V_{GS}, I_D= -250μA
Zero Gate Voltage Drain Current	I_{DSS}	-	-	-1	μA	V_{GS}=0V, V_{DS}= -20V, T_C=25℃
Gate-Body Leakage Current	I_{GSS}	-	±1.5	±10	μA	V_{GS}= ±10V, V_{DS}=0V
		-	±0.5	±2		V_{GS}= ±8V, V_{DS}=0V
Static Drain-Source On Resistance	$R_{DS(ON)}$	-	610	850	mΩ	V_{GS}= -4.5V, I_D= -0.5A
		-	930	1200		V_{GS}= -2.5V, I_D= -0.3A
		-	1100	1700		V_{GS}= -1.8V, I_D= -0.2A
Total Gate Charge	Q_g	-	1.22	-	nC	V_{DD}= -10V V_{GS}= -4.5V I_D= -0.5A
Gate-Source Charge	Q_{gs}	-	0.36	-		
Gate-Drain Charge	Q_{gd}	-	0.26	-		
Turn-On Delay Time	$T_{d(on)}$	-	4.5	-	nS	V_{DD}= -10V V_{GS}= -4.5V R_L=2.5Ω R_{GEN}=3Ω
Rise Time	T_r	-	18	-		
Turn-Off Delay Time	$T_{d(off)}$	-	15	-		
Fall Time	T_f	-	23	-		
Input Capacitance	C_{iss}	-	70	-	pF	V_{DS}= -10V V_{GS}=0V f=1MHz
Output Capacitance	C_{oss}	-	19	-		
Reverse Transfer Capacitance	C_{rss}	-	14	-		
Source Drain Diode						
Maximum Body-Diode Continuous Current	I_S		-	-0.5	A	
Diode Forward Voltage	V_{SD}	-	-	-1.2	V	I_S= -0.5A, V_{GS}=0
Reverse Recovery Time	t_{rr}		24		nS	IF= -0.5A, di/dt= -20A/μs
Reverse Recovery Charge	Q_{rr}		0.95		nC	

N-CH TYPICAL CHARACTERISTIC CURVE

Figure 1. Output Characteristics

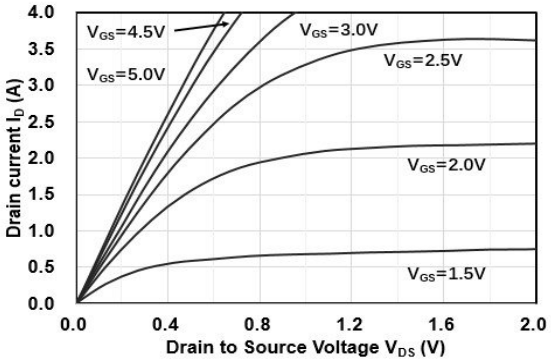


Figure 2. Transfer Characteristics

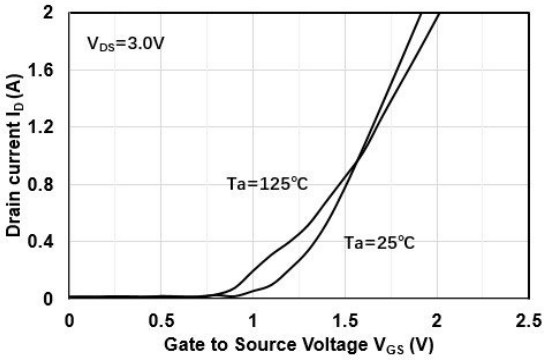


Figure 3. Capacitance Characteristics

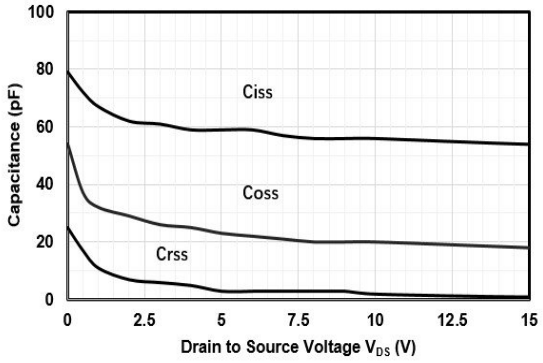


Figure 4. Gate Charge

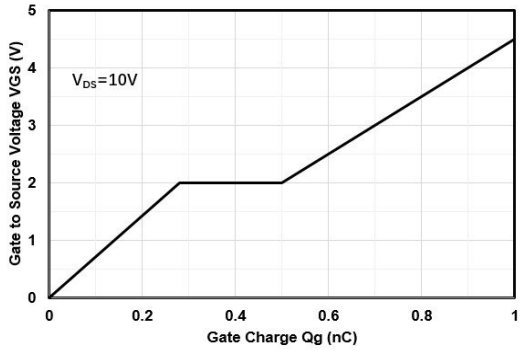


Figure 5. Drain-Source on Resistance

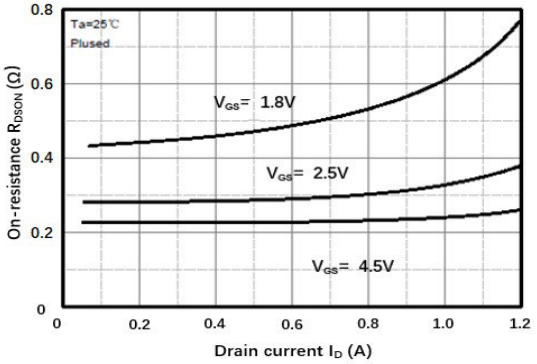


Figure 6. Drain-Source on Resistance

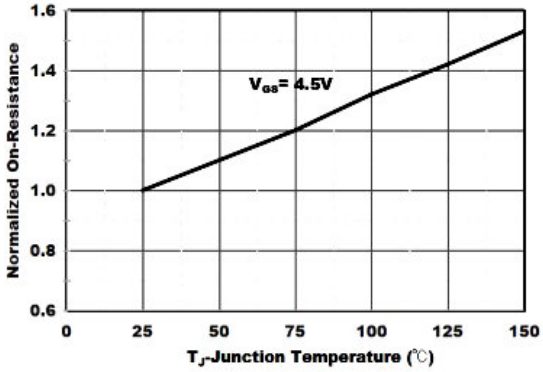


Figure 7. Safe Operation Area

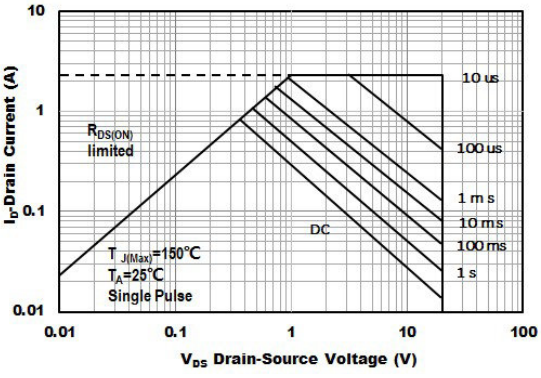
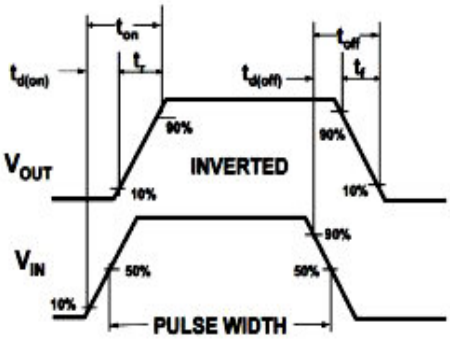


Figure 8. Switching wave



P-CH TYPICAL CHARACTERISTIC CURVE

Figure 1. Output Characteristics

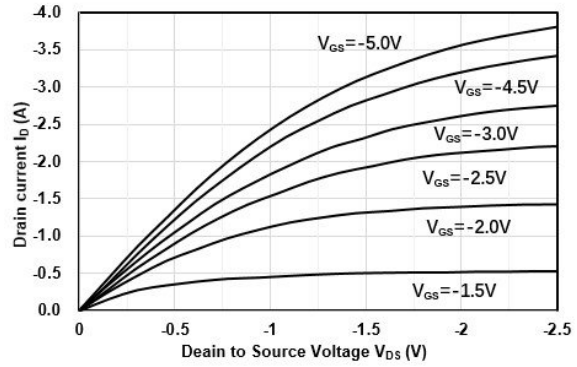


Figure 2. Transfer Characteristics

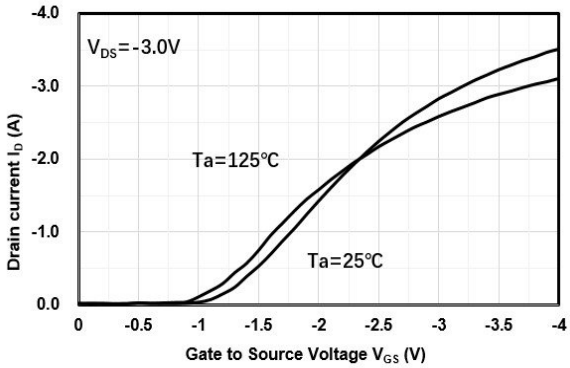


Figure 3. Capacitance Characteristics

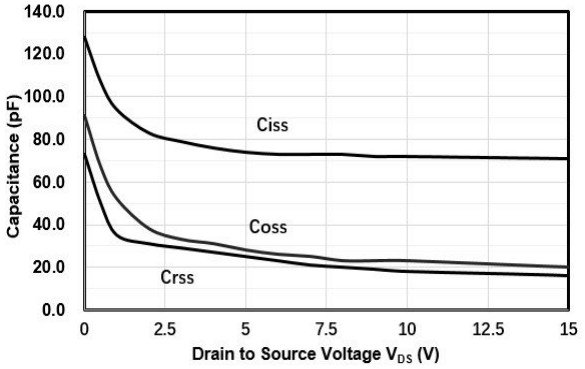


Figure 4. Gate Charge

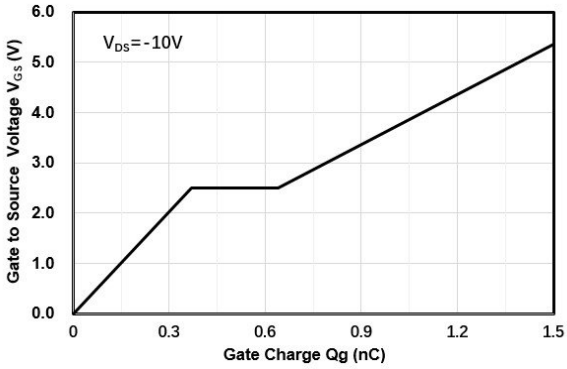


Figure 5. Drain-Source on Resistance

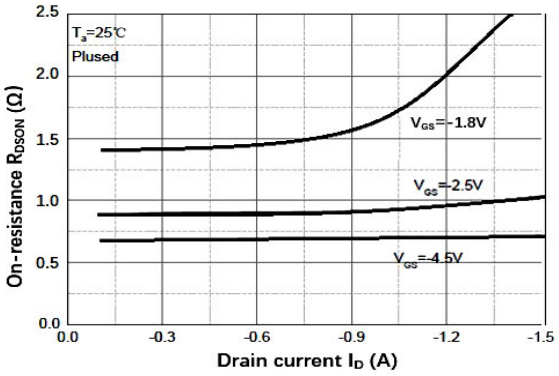


Figure 6. Drain-Source on Resistance

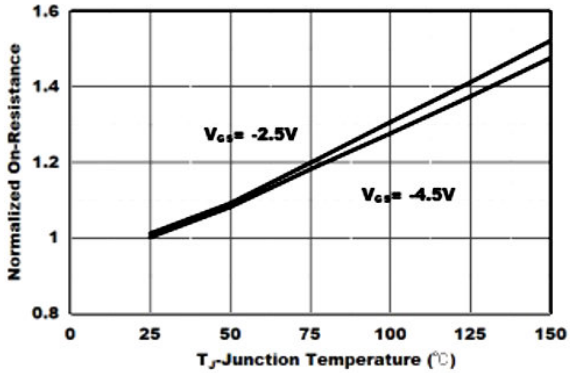


Figure 7. Safe Operation Area

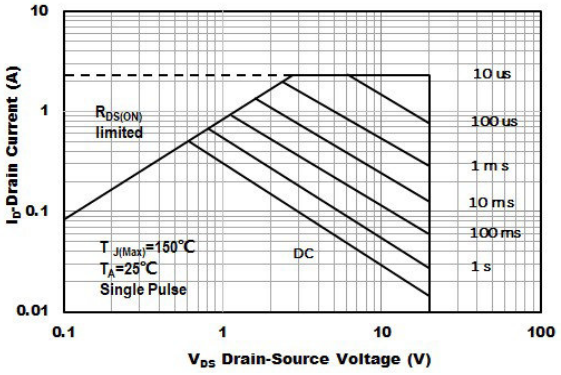
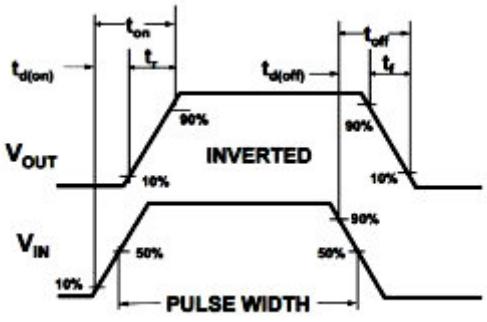
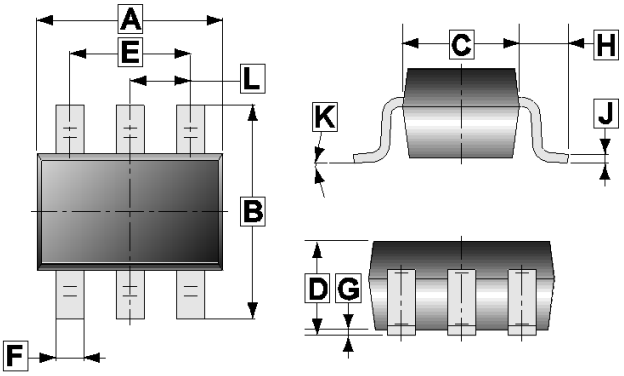


Figure 8. Switching wave



PACKAGE OUTLINE DIMENSIONS

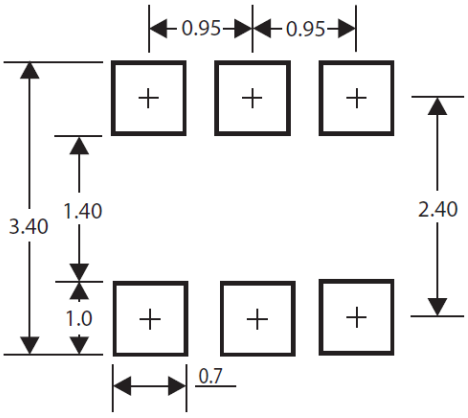
SOT-26



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

MOUNTING PAD LAYOUT

SOT-26



*Dimensions in millimeters