Elektronische Bauelemente

SMS2324J-C

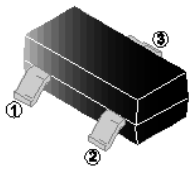
2A, 100V, $R_{DS(ON)}$ 234mΩ
N-Ch Enhancement Mode Power MOSFET

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

FEATURES

- Trench FET Power MOSFET
- Low $R_{DS(ON)}$
- Surface Mount Package

SOT-23



APPLICATION

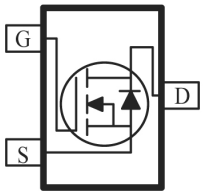
- DC/DC Converter
- Load Switch
- LED Backlighting in LCD TVs

MARKING

S24

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch



ORDER INFORMATION

Part Number	Type
SMS2324J-C	Lead (Pb)-free and Halogen-free

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	100	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current	I_D	2	A
Pulsed Drain Current [1]	I_{DM}	8	A
Maximum Power Dissipation	P_D	1	W
Thermal Resistance, Junction-Ambient [2]	$R_{\theta JA}$	125	℃/W
Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	℃

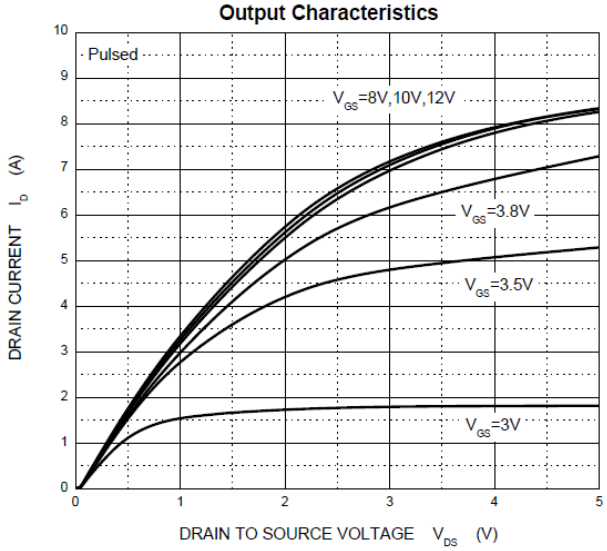
ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	100	-	-	V	V_{GS}=0, I_D=250μA
Gate Threshold Voltage [3]	$V_{GS(th)}$	1.2	-	2.8	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}=±20V, V_{DS}=0
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{GS}=0, V_{DS}=100V
Drain-Source on Resistance [3]	$R_{DS(ON)}$	-	195	234	mΩ	V_{GS}=10V, I_D=1.5A
		-	200	267		V_{GS}=6V, I_D=1A
		-	208	278		V_{GS}=4.5V, I_D=0.5A
Gate Resistance	R_g	0.3	-	2.8	Ω	f=1MHz
Forward Transconductance	g_{fs}	-	2	-	S	V_{DS}=20V, I_D=1.5A
Total Gate Charge	Q_g	-	5.8	-	nC	V_{DS}=50V V_{GS}=4.5V I_D=1.6A
Gate-Source Charge	Q_{gs}	-	0.75	-		
Gate-Drain Charge	Q_{gd}	-	1.4	-		
Turn-On Delay Time	$T_{d(on)}$	-	45	-	nS	V_{DD}=50V V_{GEN}=4.5V I_D=1.3A R_L=39Ω R_G=1Ω
Rise Time	T_r	-	39	-		
Turn-Off Delay Time	$T_{d(off)}$	-	26	-		
Fall Time	T_f	-	20	-		
Input Capacitance	C_{iss}	-	190	-	pF	V_{DS}=50V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}	-	22	-		
Reverse Transfer Capacitance	C_{rss}	-	13	-		
Source-Drain Diode						
Diode Forward Voltage [3]	V_{SD}	-	-	1.2	V	V_{GS}=0, I_S=1.3A

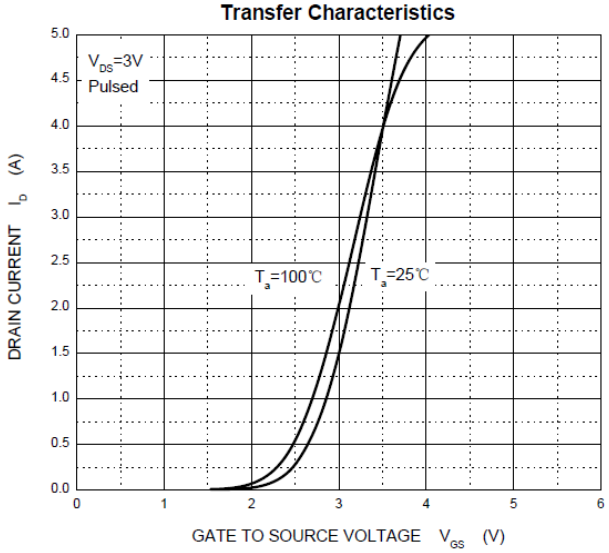
Notes:
1. Pw≤10μs, Duty cycle≤1%.
2. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in2 FR-4 board with 2oz. Copper, in a still air environment with T_A=25℃.
3. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%.

CHARACTERISTIC CURVES

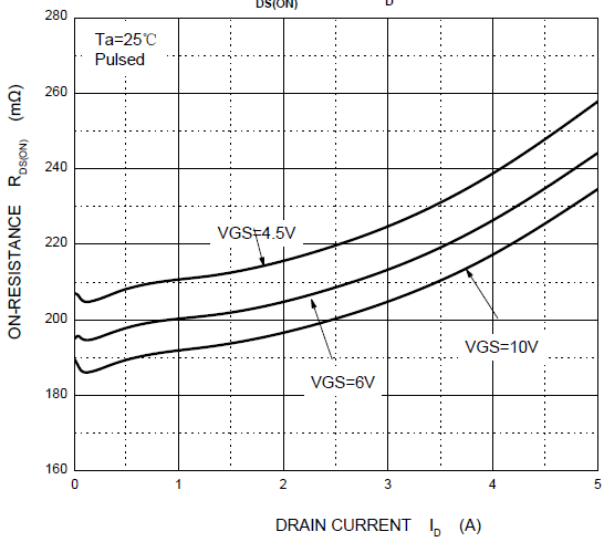
Output Characteristics



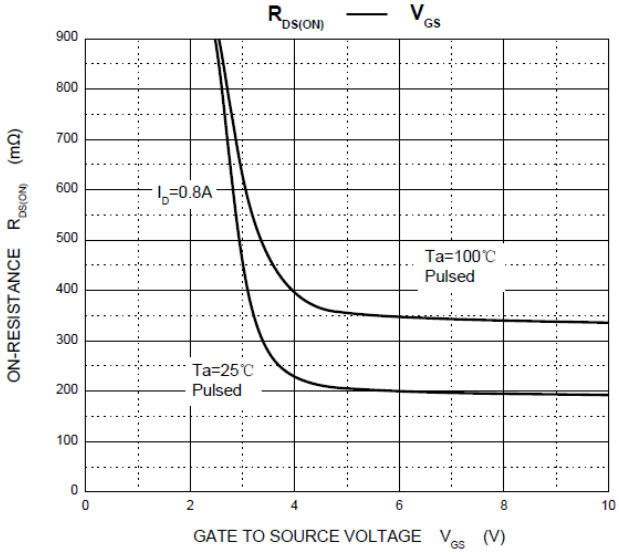
Transfer Characteristics



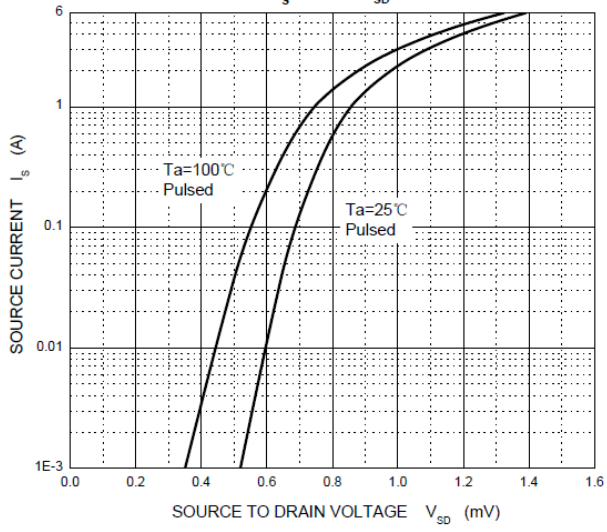
$R_{DS(ON)}$ — I_D



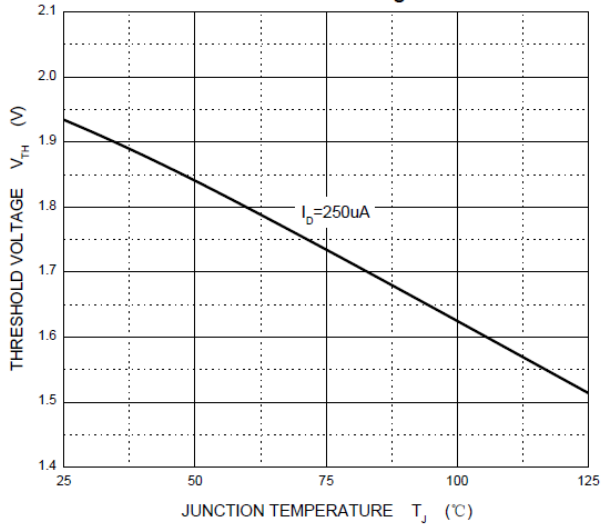
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage



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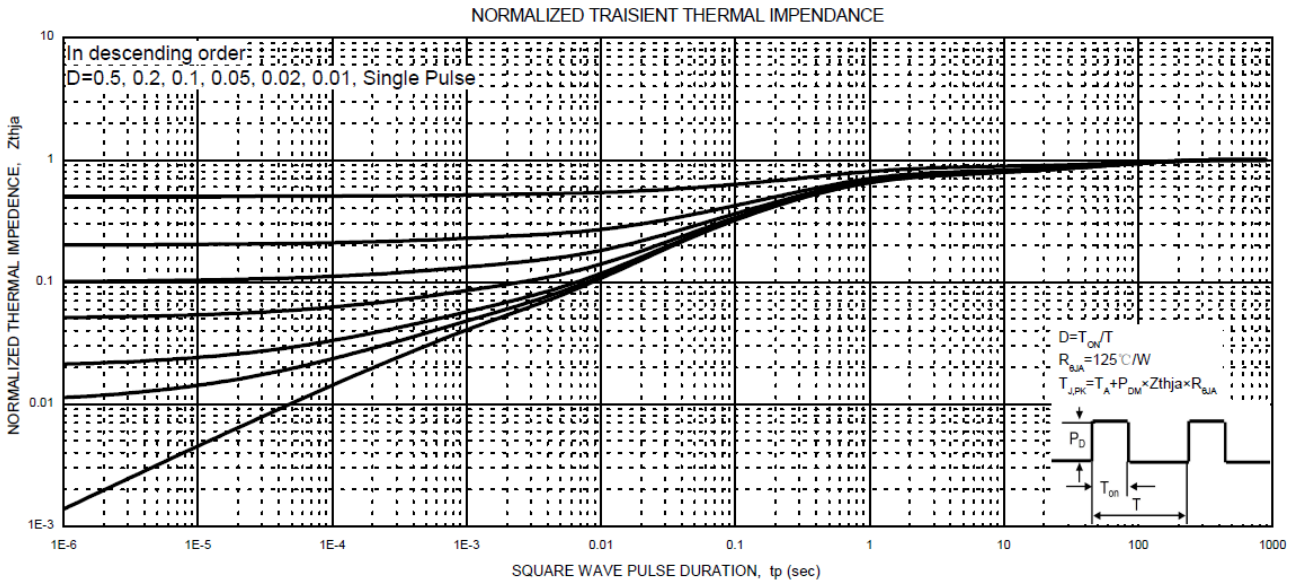
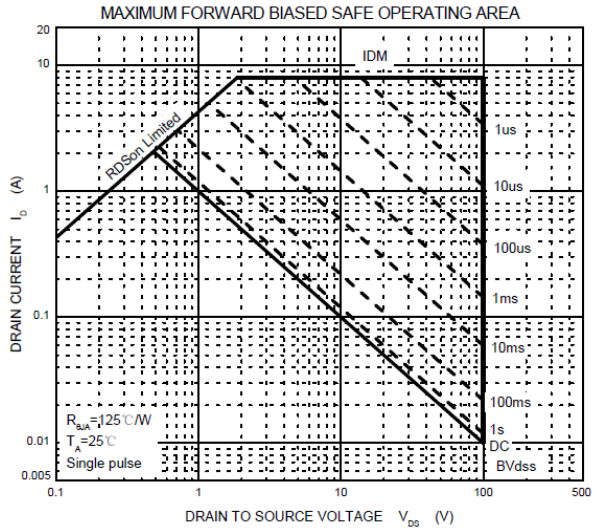
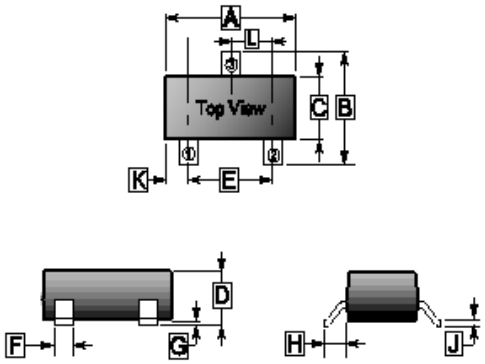




PACKAGE OUTLINE DIMENSIONS

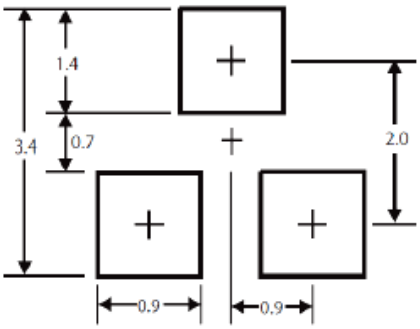
SOT-23



REF.	Millimeter	
	Min.	Max.
A	2.65	3.10
B	2.10	3.00
C	1.10	1.80
D	0.89	1.40
E	1.70	2.30
F	0.28	0.55
G	-	0.18
H	0.55 REF.	
J	0.05	0.26
K	0.60 REF.	
L	0.95 TYP.	

MOUNTING PAD LAYOUT

SOT-23



*Dimensions in millimeters