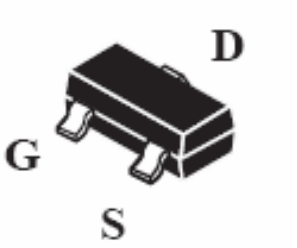
Small Signal MOSFET (P-Channel)



SOT-23

HALOGEN FREE

RoHS Compliant

Features

- Low on-resistance: 10Ω
- Low input-capacitance: 30pF
- Low output capacitance: 10pF
- Low threshole: 2.0V
- Fast switching speed: 2.5ns
- RoHS Compliance

Application

- DC to DC Converter
- Cellular & PCMCIA Card
- Cordless Telephone
- Power Management in Portable and Battery etc.

Mechanical Data

Case:	SOT-23, Plastic Package
Terminals:	Solderable per MIL-STD-202G, Method 208
Weight:	0.008 gram

Maximum Ratings *(T Ambient=25ºC unless noted otherwise)*

Symbol	Description	BSS84	Unit	Conditions
V_{DSS}	Drain-Source Voltage	50	V	
V_{GSS}	Gate-Source Voltage	±20	V	
I_D	Drain Current Continuous	130	mA	T_A=25 ˚C
I_{DM}	Drain Current Pulsed	520	mA	tp≤10μS
P_D	Power Dissipation	225	mW	T_A=25 ˚C
R_{thJA}	Max. Thermal Resistance, Junction to Ambient	556	° C/W	
T_J, T_{STG}	Operation Junction and Storage Temperature Range	-55 to +150	° C	

Electrical Characteristics *($T_{Ambient}$=25ºC unless noted otherwise)*

Static Characteristics *(Note 1)*

Symbol	Description	Min.	Typ.	Max.	Unit	Conditions
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	50	-	-	V	V_{GS}=0V, I_D=250μA
$V_{GS(th)}$	Gate-Source Threshold Voltage	0.8	-	2.0	V	V_{DS}=V_{GS}, I_D=1mA
I_{GSS}	Gate-Source Leakage Current	-	-	±60	μA	V_{DS}=0V, V_{GS}=±20V
I_{DSS}	Zero Gate Voltage Drain Current	-	-	0.1	μA	V_{DS}=25V, V_{GS}=0V
		-	-	15	μA	V_{DS}=50V, V_{GS}=0V
$R_{DS(ON)}$	Drain-Source ON Resistance	-	5.0	10	Ω	V_{GS}=5V, I_D=100mA
g_{FS}	Forward Transconductance	50	-	-	mS	V_{DS}=25V, I_D=100mA, f=1KHz

Dynamic Characteristics

Symbol	Description	Min.	Typ.	Max.	Unit	Conditions
C_{iss}	Input Capacitance	-	30	-	pF	V_{DS}=5V, V_{GS}=0V, f=1MHz
C_{rss}	Reverse Transfer Capacitance	-	5.0	-		
C_{oss}	Output Capacitance	-	10	-		

Switching Characteristics *(Note 2)*

Symbol	Description	Min.	Typ.	Max.	Unit	Conditions
t_{on}	Turn-On Time	-	25	-	nS	V_{DD}=-15V, R_L=50Ω, I_D=-2.5A
t_r	Rise-Time	-	1.0	-		
t_{off}	Turn-Off Time	-	16	-		
t_f	Fall-Time	-	8.0	-		
Q_T	Gate Charge	-	6000	-	PC	

Source-Drain Diode Characteristics

Symbol	Description	Min.	Typ.	Max.	Unit	Conditions
I_S	Continuous Drain-Source Diode Forward Current	-	-	0.13	A	
I_{SM}	Pulsed Drain-Source Diode Forward Current	-	-	0.52	A	
V_{SD}	Source-Drain Forward Voltage (Note 2)	-	2.5	-	V	

Note: 1. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

2. Switching Time is Essentially Independent of Operation Temperature.

Typical Characteristics Curves

Fig.1- Transfer Characteristics

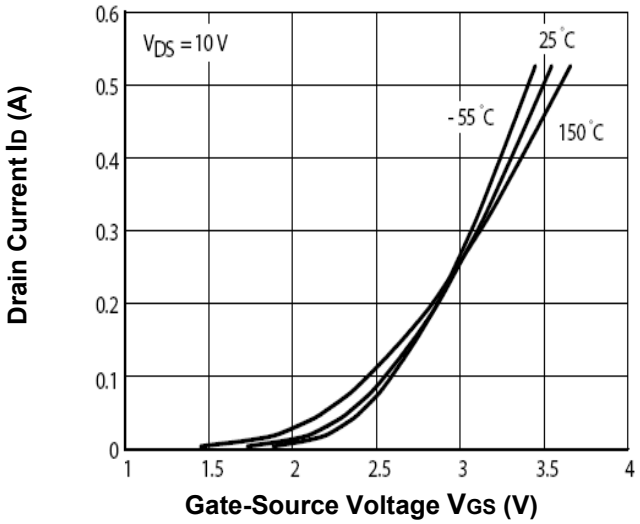


Fig.2- On Region Characteristics

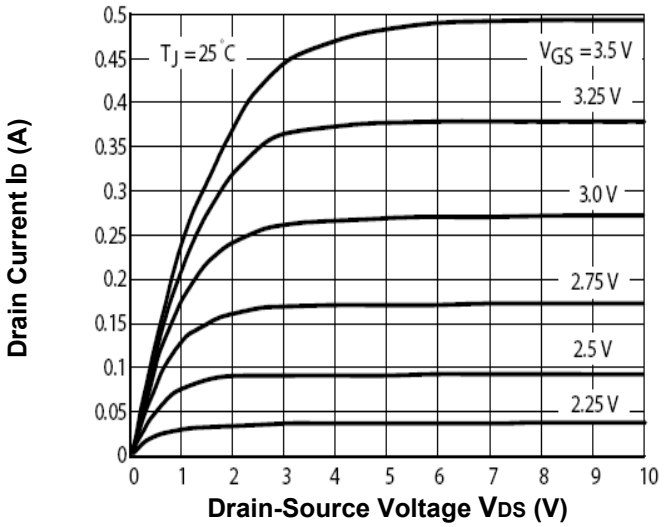


Fig.3- On-Resistance vs. Drain Current

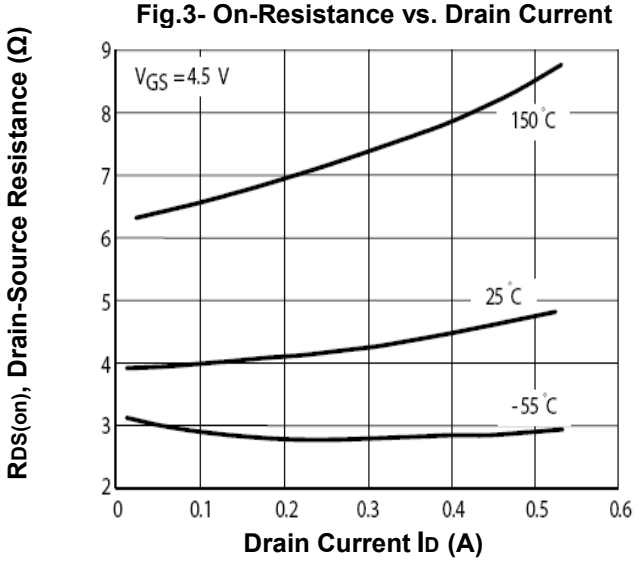


Fig.4- On-Resistance vs. Drain Current

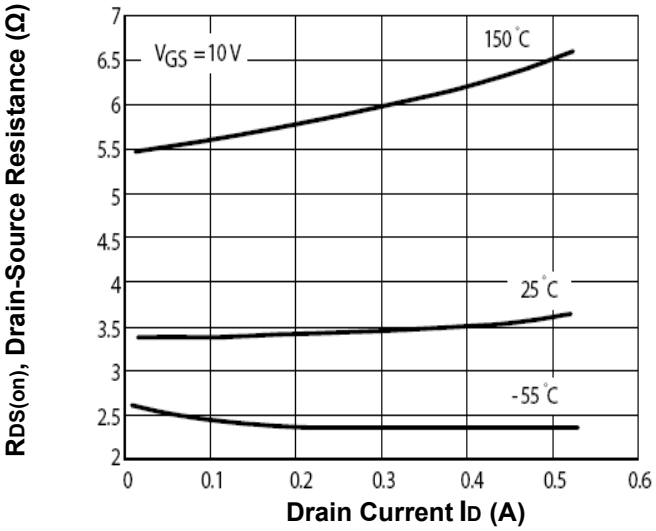


Fig.5- On-Resistance Variation with Temperature

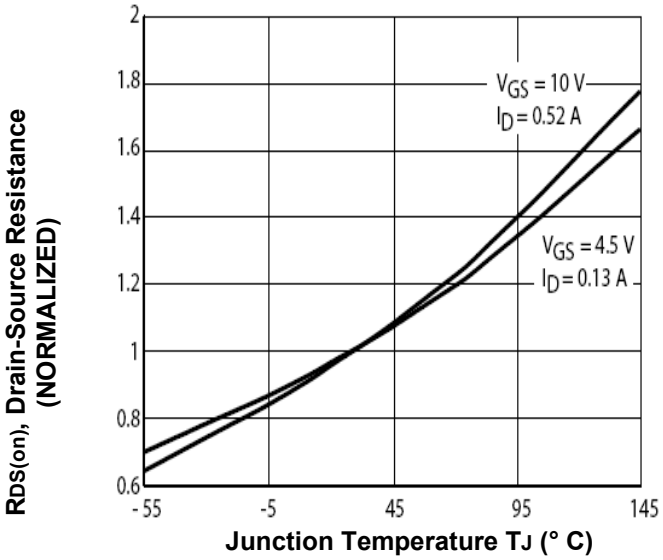


Fig.6- Gate Charge

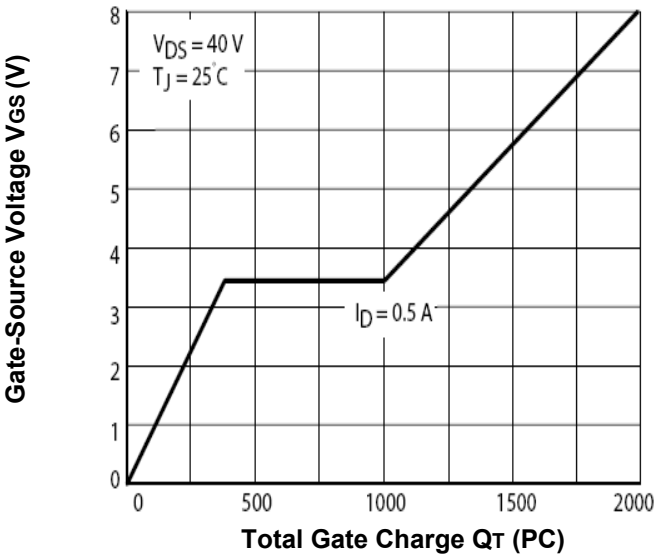
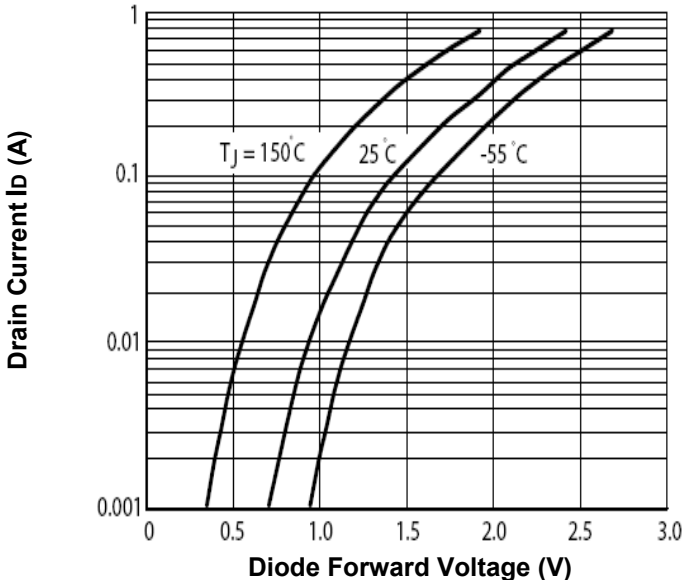
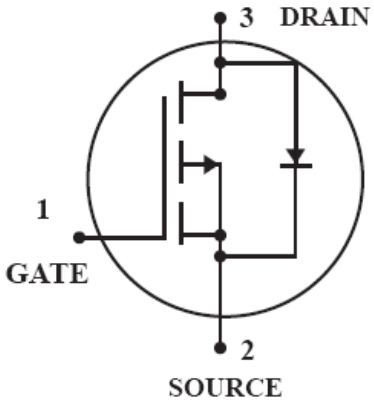


Fig.7- Body Diode Forward Voltage



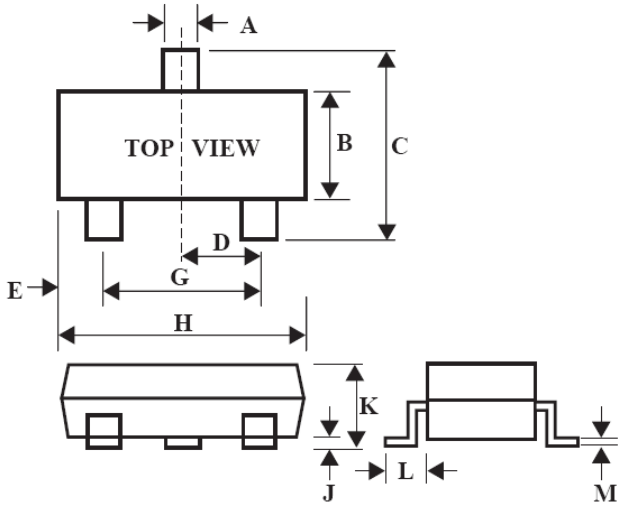
Equivalent Circuit



Marking Information:



Dimensions in mm



SOT-23		
Dim	Min	Max
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25

SOT-23

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