Elektronische Bauelemente

SMS840

0.13A , 50V , $R_{DS(ON)}$ 10 Ω
P-Channel Enhancement MOSFET

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

FEATURES

- Low On-Resistance : 10Ω
- Low Input Capacitance: 30PF
- Low Out Put Capacitance : 10PF
- Low Threshold : 2V
- Fast Switching Speed : 2.5ns

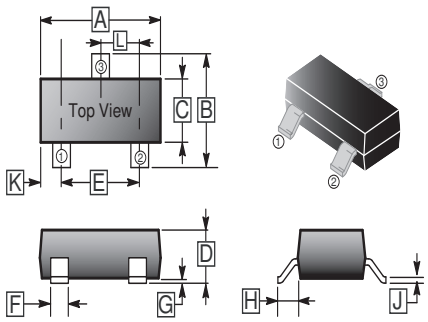
APPLICATIONS

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

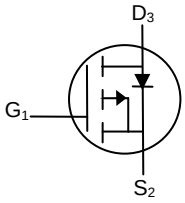
MARKING

PD

SOT-23



P-Channel



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.04	G	-	0.18
B	2.10	2.80	H	0.40	0.60
C	1.20	1.60	J	0.08	0.20
D	0.89	1.40	K	0.6 REF.	
E	1.78	2.04	L	0.85	1.15
F	0.30	0.50			

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	-50	V
Continuous Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current @T_A=25℃	I_D	-130	mA
Pulsed Drain Current(tp≤10us)	I_{DM}	-520	mA
Power Dissipation @T_A=25℃	P_D	225	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	℃/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	Teat Conditions
Static Characteristics [1]						
Drain-Source Breakdown Voltage	BV_{DSS}	-50	-	-	V	V_{GS} =0, I_D = -250μA
Zero Gate Voltage Drain Current	I_{DSS}	-	-	-0.1	μA	V_{GS}=0, V_{DS} = -25V
		-	-	-15		V_{GS}=0, V_{DS} = -50V
Gate-Source Leakage Current	I_{GSS}	-	-	±60	μA	V_{GS}=±20V, V_{DS} =0
Gate-Source Threshold Voltage	$V_{GS(th)}$	-0.8	-	-2	V	V_{DS} =V_{GS}, I_D = -1mA
Static Drain-Source On Resistance	$R_{DS(ON)}$	-	5	10	Ω	V_{GS}= -5V, I_D = -0.1A
Forward Transconductance	g_{FS}	50	-	-	mS	V_{DS}= -25V,,I_D = -0.1A, f=1.0KHz
Dynamic Characteristics						
Input Capacitance	C_{iss}	-	30	-	pF	V_{DS}= -5V, V_{GS}=0, f=1MHz
Output Capacitance	C_{oss}	-	10	-		
Reverse Transfer Capacitance	C_{rss}	-	5	-		
Switching Characteristics [2]						
Turn-On Delay Time	$T_{d(ON)}$	-	25	-	nS	V_{DD}= -15V, ,I_D= -2.5A, R_L=50Ω,
Turn-Off Delay Time	$T_{d(OFF)}$	-	16	-		
Rise Time	T_r	-	1	-		
Fall Time	T_f	-	8	-		
Gate Charge	Q_T	-	6000	-	pC	
Source-Drain Diode Characteristics						
Continuous Current	I_S	-	-	0.13	A	
Pulsed Current	I_{SM}	-	-	0.52		
Forward Voltage [2]	V_{SD}	-	-2.5	-	V	

Notes:
1. Pulse Test : PW≤300us, Duty Cycle≤2%.
2. Switching Time is Essentially Independent of Operating Temperature.

CHARACTERISTIC CURVE

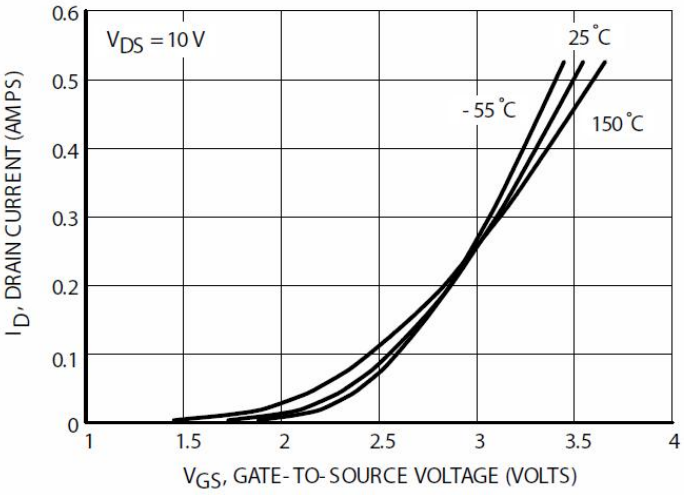


FIG1. Transfer Characteristics

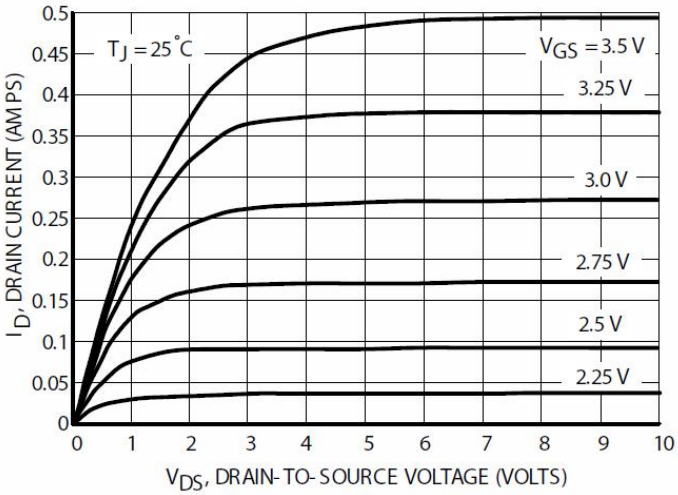


FIG2. On-Region Characteristics

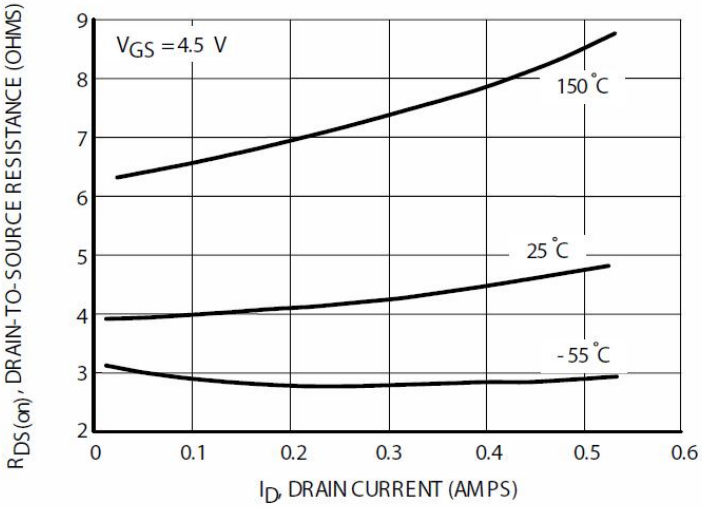


FIG3. On-Resistance versus Drain Current

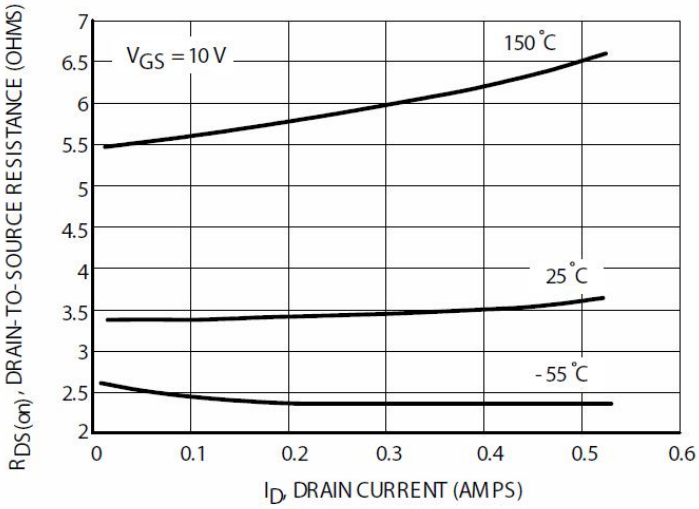


FIG4. On-Resistance versus Drain Current

CHARACTERISTIC CURVE

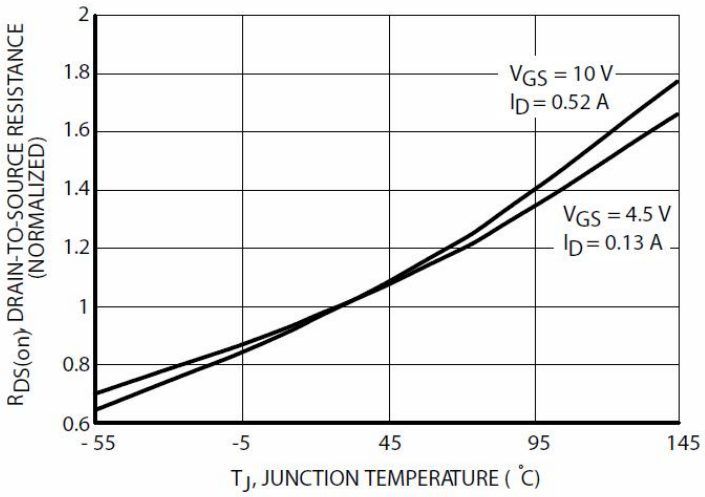


FIG5. On-Resistance Variation with Temperature

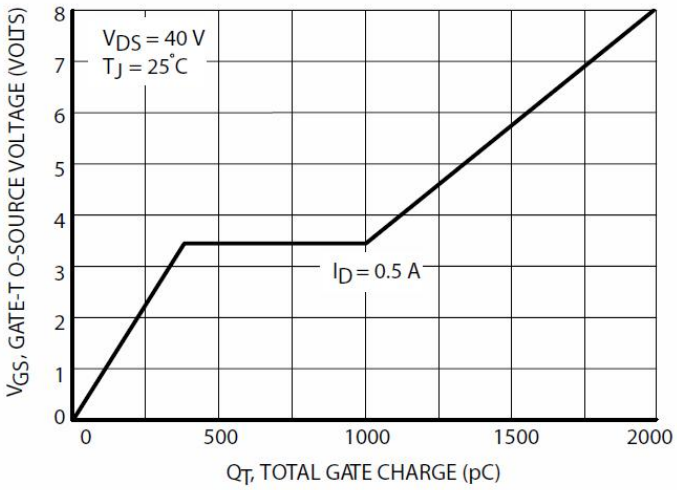


FIG6. Gate Charge

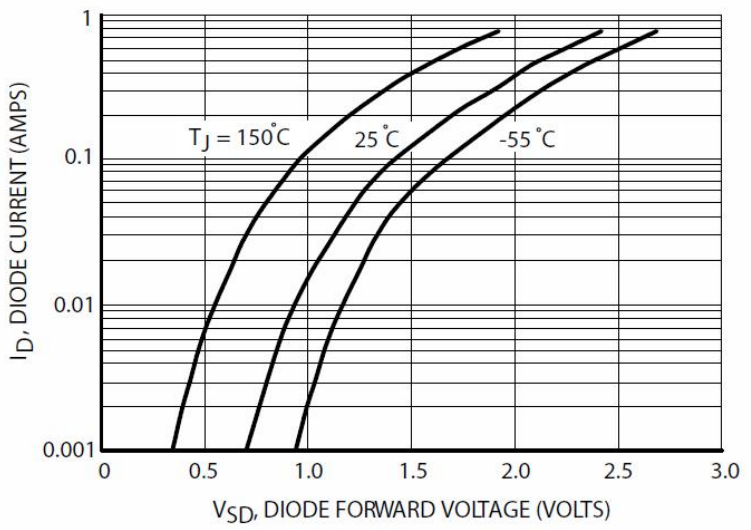


FIG7. Body Diode Forward Voltage