Elektronische Bauelemente

SMG2343PE

-3.9 A, -30 V, $R_{DS(ON)}$ 57 mΩ
P-Channel Enhancement MOSFET

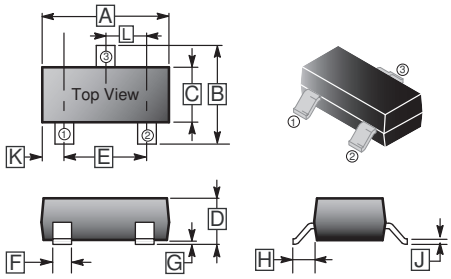
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $R_{DS(on)}$ and to ensure minimal power loss and heat dissipation.

Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

SC-59



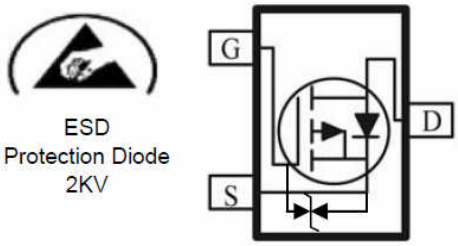
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0.10 REF.	
B	2.10	3.00	H	0.40 REF.	
C	1.20	1.70	J	0.047	0.207
D	0.89	1.40	K	0.5 REF.	
E	2.00 Typ.		L	0.95 REF.	
F	0.30	0.50			

FEATURES

- Low $R_{DS(on)}$ trench technology
- Low thermal impedance
- Fast switching speed

PACKAGE INFORMATION

Package	MPQ	Leader Size
SC-59	3K	7' inch



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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_A=25℃	I_D	-3.9	A
	T_A=70℃		-3.1	
Pulsed Drain Current [2]		I_{DM}	-20	A
Continuous Source Current (Diode Conduction) [1]		I_S	-1.7	A
Power Dissipation [1]	T_A=25℃	P_D	1.3	W
	T_A=70℃		0.8	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	℃
Thermal Resistance Data				
Maximum Junction to Ambient [1]	t≦10 sec	$R_{\theta JA}$	100	℃/W
	Steady-State		166	

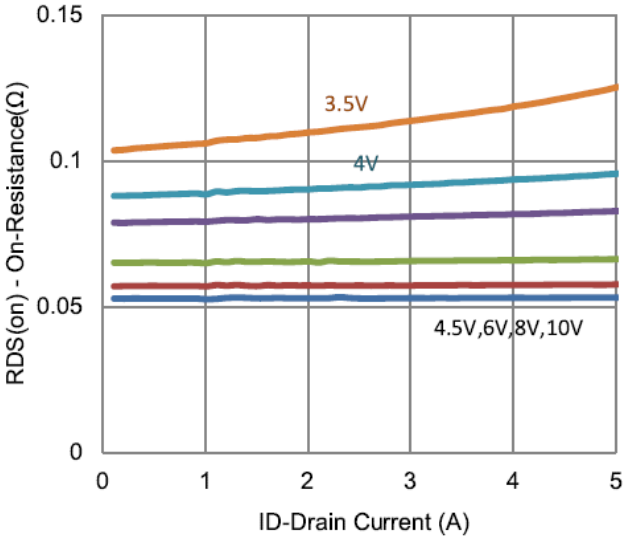
Notes:
1. Surface Mounted on 1" x 1" FR4 Board.
2. Pulse width limited by maximum junction temperature.

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

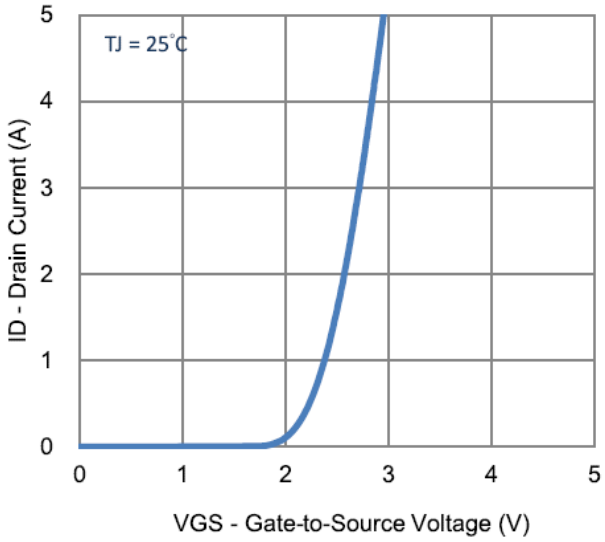
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	-1	-	-	V	V_{DS}=V_{GS}, I_D= -250μA
Gate-Body Leakage	I_{GSS}	-	-	±10	μA	V_{DS}=0V, V_{GS}= ±20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	-1	μA	V_{DS}= -24V, V_{GS}=0V
		-	-	-25		V_{DS}= -24V, V_{GS}=0V, T_J=55℃
On-State Drain Current [1]	$I_{D(ON)}$	-6	-	-	A	V_{DS}= -5V, V_{GS}= -10V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	57	mΩ	V_{GS}= -10V, I_D= -3.2A
		-	-	89		V_{GS}= -4.5V, I_D= -2.6A
Forward Transfer conductance [1]	g_{fs}	-	10	-	S	V_{DS}= -15V,I_D= -3.2A
Diode Forward Voltage	V_{SD}	-	-0.8	-	V	I_S= -0.9A, V_{GS}=0V
Dynamic						
Total Gate Charge	Q_g	-	6.9	-	nC	I_D= -3.2A, V_{DS}= -15V, V_{GS}= -4.5V
Gate-Source Charge	Q_{gs}	-	1.9	-		
Gate-Drain Charge	Q_{gd}	-	2.9	-		
Turn-On Delay Time	$T_{d(on)}$	-	6	-	nS	V_{DS}= -15V, I_D= -3.2A, V_{GEN}= -10V, R_{GEN}=6Ω, R_L=4.7Ω
Rise Time	T_r	-	5	-		
Turn-Off Delay Time	$T_{d(off)}$	-	26	-		
Fall Time	T_f	-	12	-		
Input Capacitance	C_{iss}	-	455	-	pF	V_{DS}= -15V, V_{GS}=0V, f=1Mhz
Output Capacitance	C_{oss}	-	63	-		
Reverse Transfer Capacitance	C_{rss}	-	51	-		

Note:
1. Pulse test: PW≦300uS duty cycle≦2%.

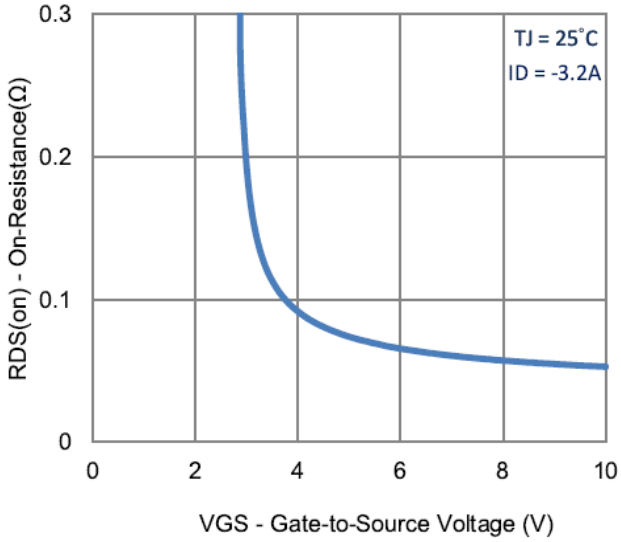
CHARACTERISTIC CURVE



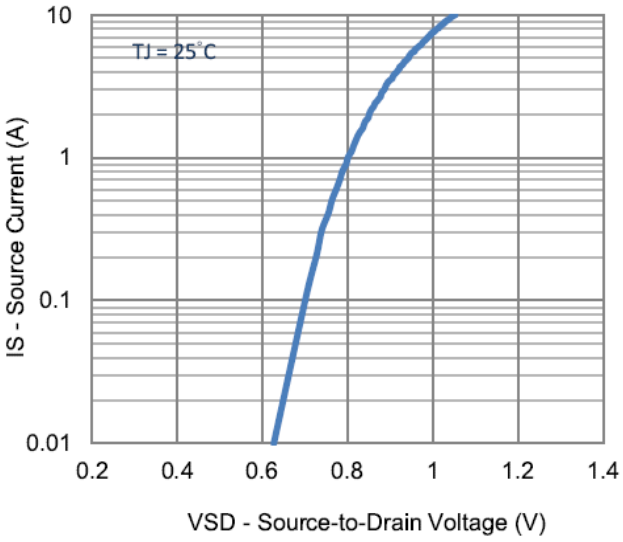
1. On-Resistance vs. Drain Current



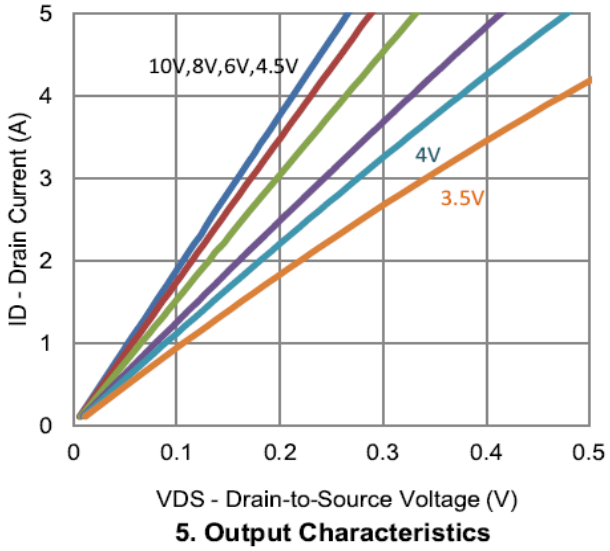
2. Transfer Characteristics



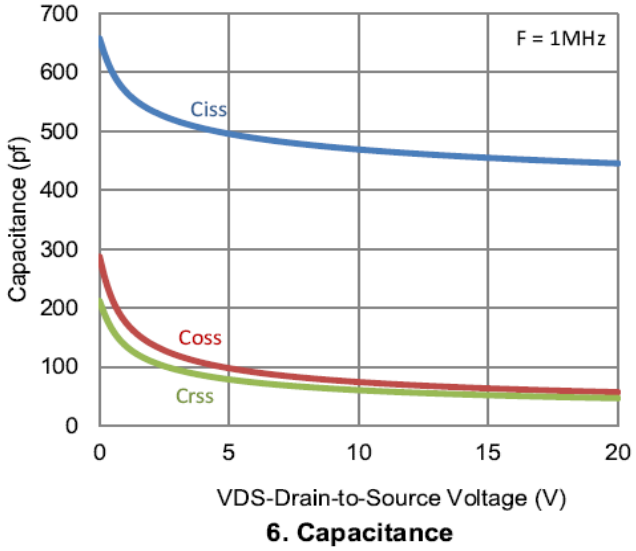
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage

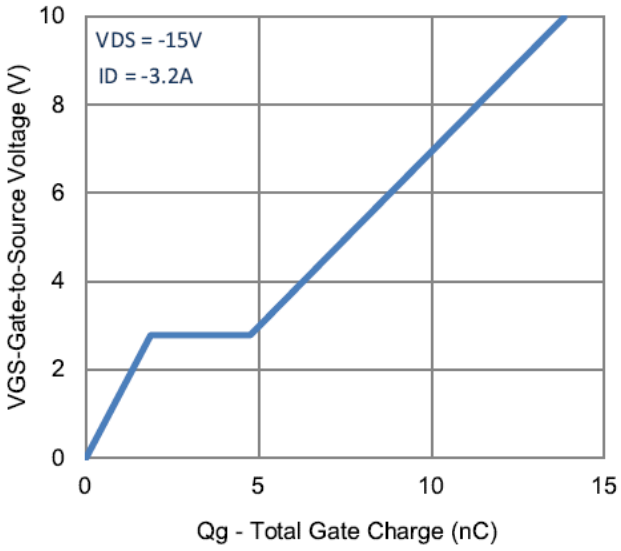


5. Output Characteristics

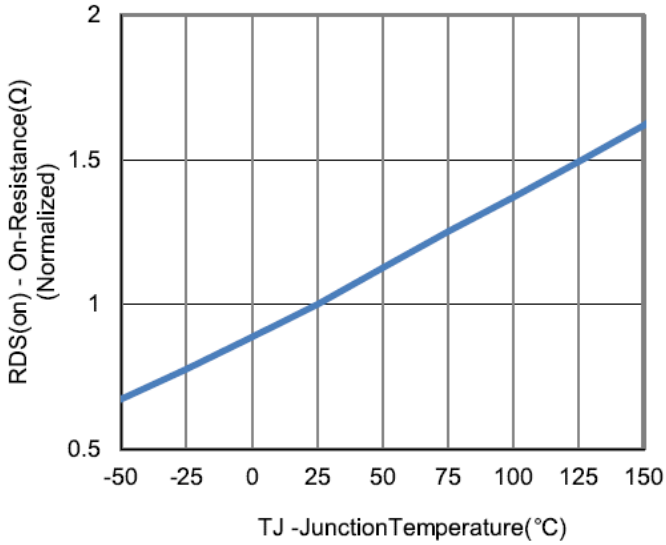


6. Capacitance

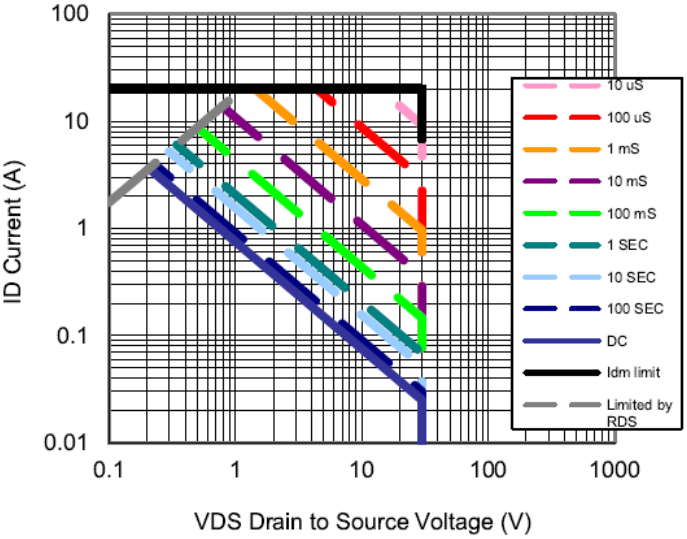
CHARACTERISTIC CURVE



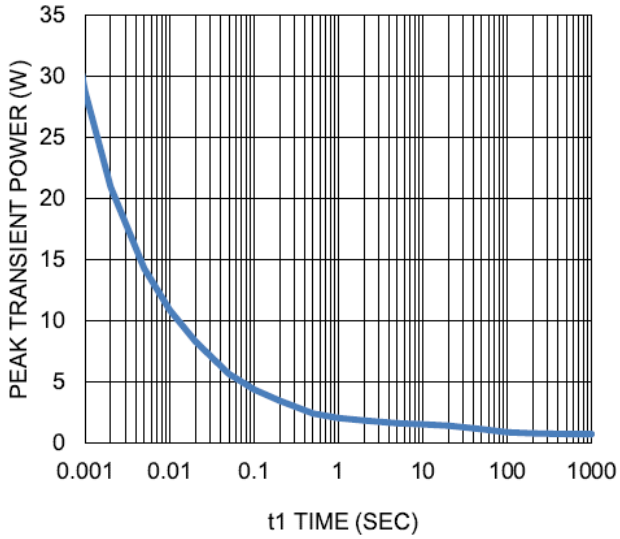
7. Gate Charge



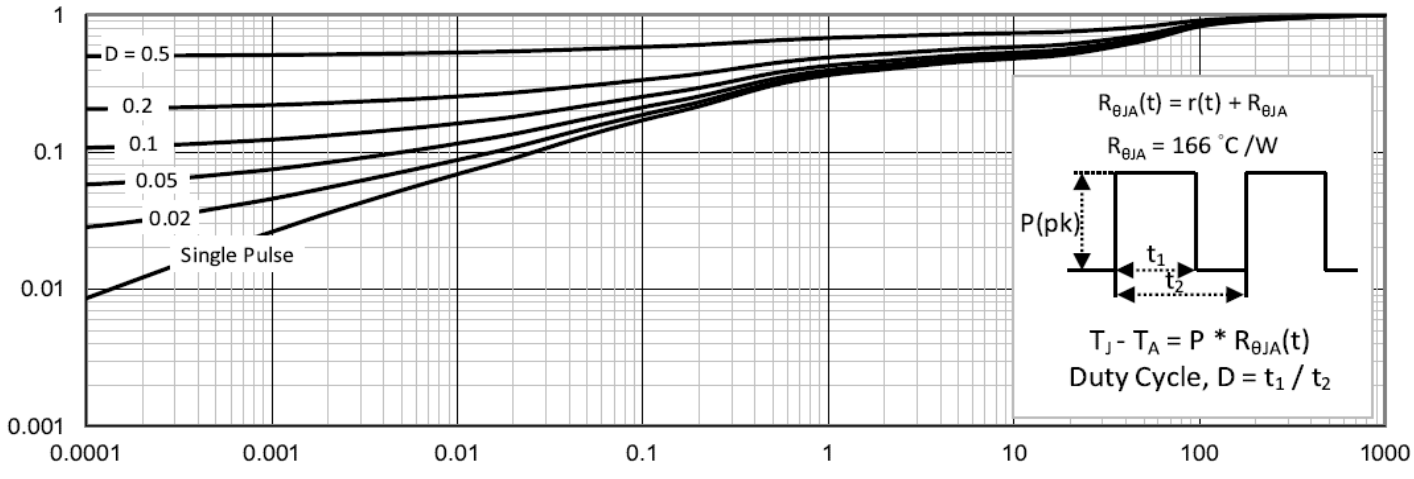
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area



10. Single Pulse Maximum Power Dissipation



11. Normalized Thermal Transient Junction to Ambient