Elektronische Bauelemente

SMG2343

-4.1A , -30V , $R_{DS(ON)}$ 45 mΩ
P-Channel Enhancement Mode MOSFET

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

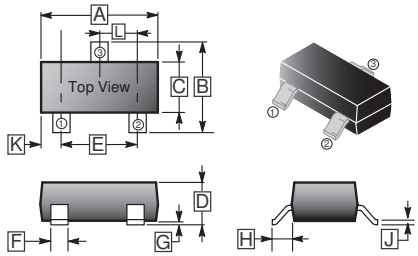
DESCRIPTION

The SMG2343 uses advanced trench technology to provide excellent on-resistance with low gate change. The device is suitable for use as a load switch or in PWM applications.

FEATURES

- Lower Gate Threshold Voltage
- Small Package Outline

SC-59



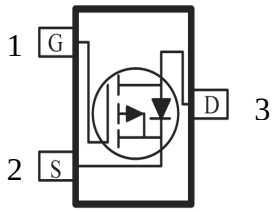
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0.10 REF.	
B	2.25	3.00	H	0.40 REF.	
C	1.30	1.70	J	0.10	0.20
D	1.00	1.40	K	0.45	0.55
E	1.70	2.30	L	0.85	1.15
F	0.35	0.50			

MARKING

2343

PACKAGE INFORMATION

Package	MPQ	Leader Size
SC-59	3K	7 inch



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

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [3]	T_A=25℃	I_D	-4.1	A
	T_A=70℃		-3.5	
Pulsed Drain Current [1]		I_{DM}	-12	A
Power Dissipation	T_A=25℃	P_D	1.38	W
Linear Derating Factor			0.01	W / ℃
Operating Junction and Storage Temperature Range		Tj, Tstg	-55~150	℃
Thermal Resistance Rating				
Maximum Junction to Ambient [3]		$R_{\theta JA}$	90	℃ / W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	-30	-	-	V	V_{GS}=0, I_D= -250uA
Gate-Threshold Voltage	$V_{GS(th)}$	-1.0	-	-2.0	V	V_{DS}=V_{GS}, I_D= -250uA
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}=±20V
Drain-Source Leakage Current	I_{DSS}	-	-	-1	μA	V_{DS}= -24V, V_{GS}=0
		-	-	-5		V_{DS}= -24V, V_{GS}=0
Drain-Source On-Resistance [2]	$R_{DS(ON)}$	-	-	45	mΩ	V_{GS}= -10V, I_D= -4.1A
		-	-	65		V_{GS}= -4.5V, I_D= -3.0A
Forward Transconductance	g_{fs}	-	60	-	S	V_{DS}= -10V, I_D= -4A
Dynamic						
Total Gate Charge[2]	Q_g	-	15.2	-	nC	V_{DS}= -24V, V_{GS}= -10V, I_D= -3A
Gate-Source Charge	Q_{gs}	-	5.5	-		
Gate-Drain Charge	Q_{gd}	-	1	-		
Turn-on Delay Time[2]	$T_{d(on)}$	-	8.6	-	nS	V_{DS}= -15V, V_{GS}= -10V, R_G=6Ω, R_D=15Ω, I_D= -1A
Rise Time	T_r	-	12.2	-		
Turn-off Delay Time	$T_{d(off)}$	-	36.6	-		
Fall Time	T_f	-	20.8	-		
Input Capacitance	C_{iss}	-	590	-	pF	V_{GS}=0,V_{DS}= -25V,f=1.0MHz
Output Capacitance	C_{oss}	-	75	-		
Reverse Transfer Capacitance	C_{rss}	-	10	-		
Diode Forward Voltage [2]	V_{SD}	-	-	-1	V	I_S= -1A, V_{GS}=0, T_J=25°C

Notes:
1. Pulse width limited by Max. junction temperature.
2. Pulse width≦300μs, duty cycle≦2%.
3. Surface mounted on 1 in^2 copper pad of FR4 board; 270°C / W when mounted on Min. copper pad.

CHARACTERISTIC CURVES

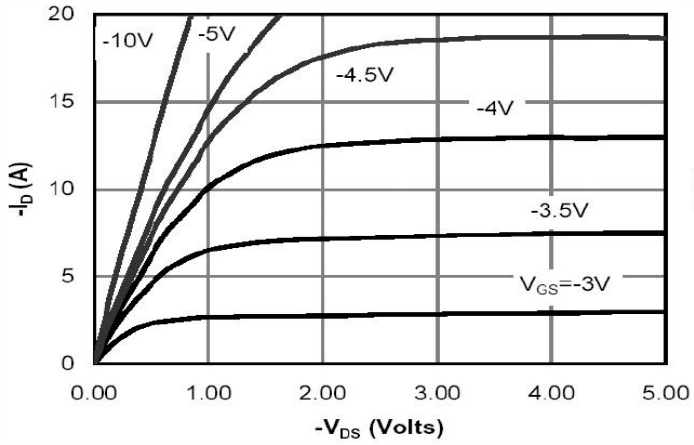


Fig 1. Typical Output Characteristics

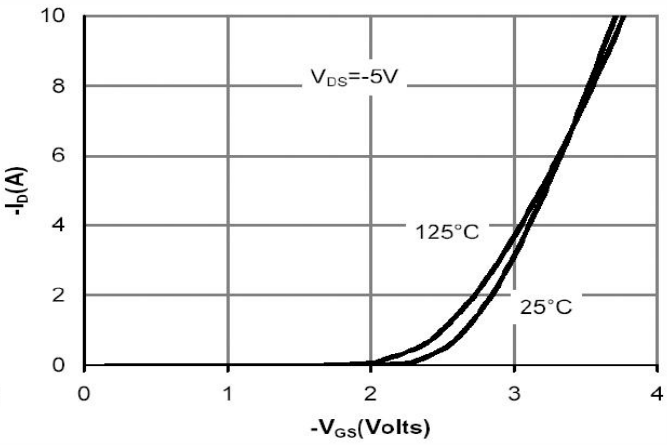


Fig 2. Transfer Characteristics

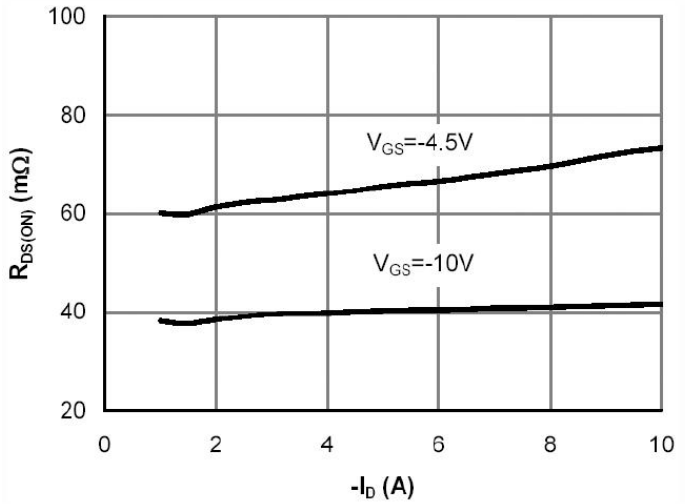


Fig 3. On-Resistance vs. Drain Current and Gate Voltage

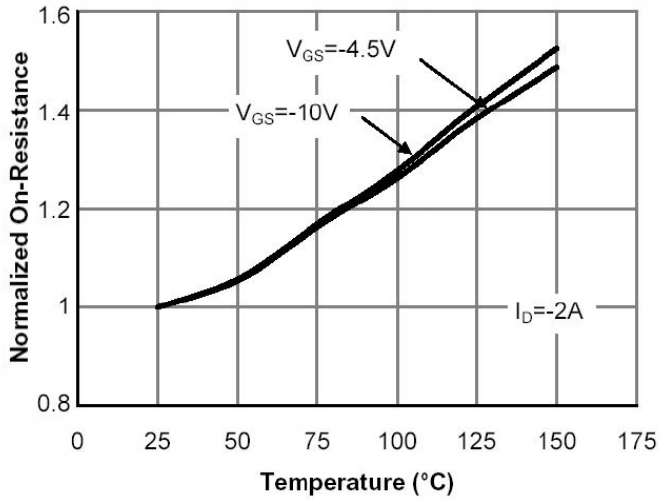


Fig 4. On-Resistance vs. Junction Temperature

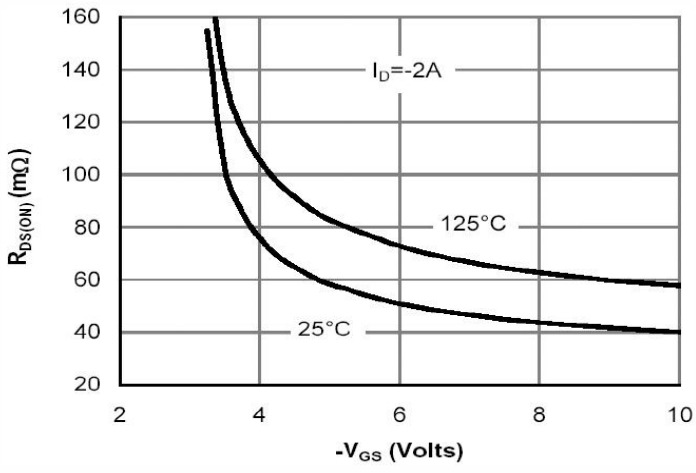


Fig 5. On-Resistance vs. Gate-Source Voltage

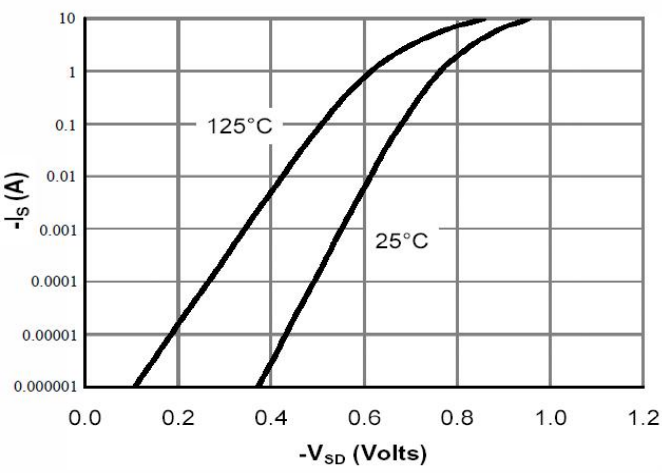


Fig 6. Body Diode Characteristics

CHARACTERISTIC CURVES

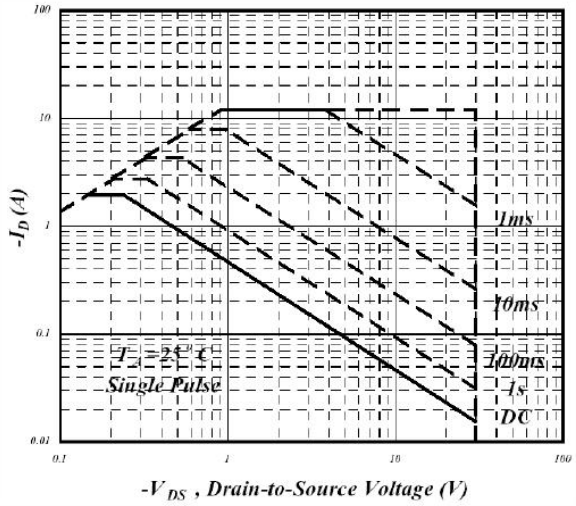


Fig 7. Maximum Safe Operating Area

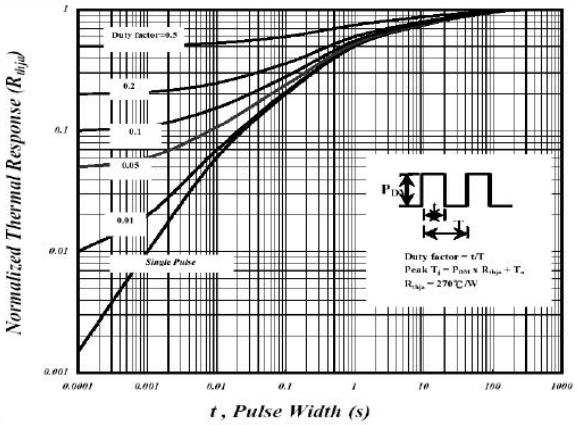


Fig 8. Normalized Maximum Transient Thermal Impedance Curve

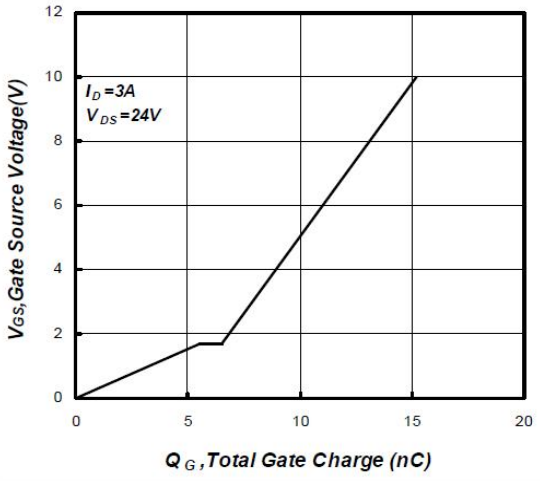


Fig 9. Gate Charge Characteristics

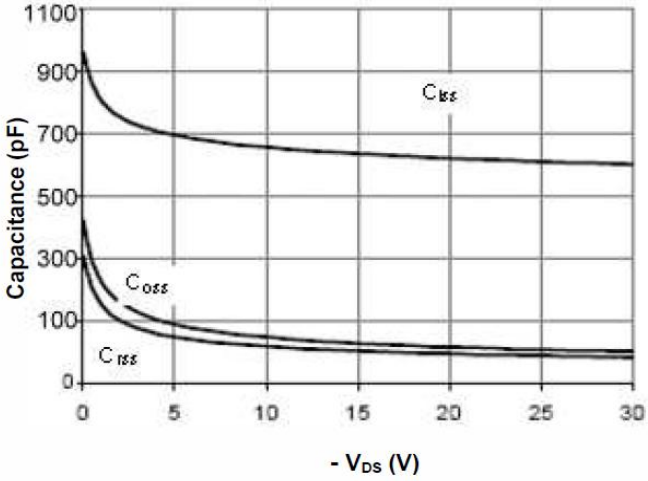


Fig 10. Typical Capacitance Characteristics