Elektronische Bauelemente

SMG2328

100V, 1.5A, 250mΩ

N-Channel Enhancement Mode Power MOSFET

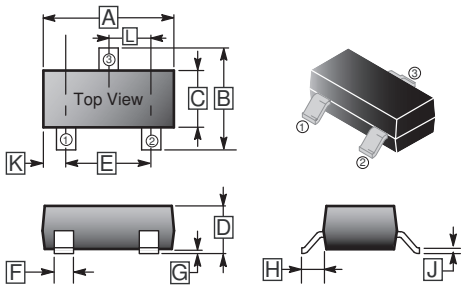
RoHS Compliant Product

A Suffix of "-C" specifies halogen & lead-free

DESCRIPTION

SMG2328 utilizes advanced processing techniques to achieve the lowest possible on-resistance, extremely efficient and cost-effectiveness device. SMG2328 is universally used for all commercial-industrial applications.

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	1.20	1.70	J	0.08	0.20
D	0.90	1.40	K	0.5 REF.	
E	1.70	2.30	L	0.95 REF.	
F	0.30	0.50			

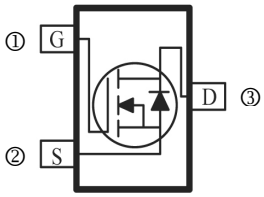
FEATURES

- Simple drive requirement
- Small package outline
- Super high density cell design for extremely low $R_{DS(ON)}$

MARKING

2328

2328FH



PACKAGE INFORMATION

Package	MPQ	Leader Size
SC-59	3K	7 inch

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 [3]	T_A=25℃	I_D	1.5	A
	T_A=70℃	I_D	1.2	A
Pulsed Drain Current [1,2]		I_{DM}	5	A
Total Power Dissipation		P_D	1	W
Linear Derating Factor			0.008	W / ℃
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	℃
Thermal Resistance				
Maximum Thermal Resistance from Junction to Ambient [3]		$R_{\theta JA}$	125	℃ / W

ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage		BV_{DSS}	100	-	-	V	V_{GS}=0, I_D =250μA
Gate Threshold Voltage		$V_{GS(th)}$	1	-	2.5	V	V_{DS}=V_{GS}, I_D=250μA
Forward Tranconductance		g_{fs}	-	4	-	S	V_{DS}=15V, I_D=1.5A
Gate-Source Leakage Current		I_{GSS}	-	-	±100	nA	V_{GS}=±20V
Drain-Source Leakage Current	T_J=25℃	I_{DSS}	-	-	1	μA	V_{DS}=80V, V_{GS}=0
	T_J=55℃		-	-	10		V_{DS}=80V, V_{GS}=0
Drain-Source On-State Resistance		$R_{DS(ON)}$	-	-	250	mΩ	V_{GS}=10V, I_D=1.5A
Total Gate Charge [2]		Q_g	-	11.1	-	nC	V_{DS}=80V V_{GS}=5V I_D =1.5A
Gate-Source Charge		Q_{gs}	-	4.4	-		
Gate-Drain (“Miller”) Change		Q_{gd}	-	3	-		
Turn-on Delay Time [2]		$T_{d(ON)}$	-	9	-	nS	V_{DD}=30V V_{GS}=10V R_L=30Ω R_G=6Ω I_D=1A
Rise Time		T_r	-	9.4	-		
Turn-off Delay Time		$T_{d(OFF)}$	-	26.8	-		
Fall Time		T_f	-	2.6	-		
Input Capacitance		C_{ISS}	-	975	-	pF	V_{DS}=25V V_{GS}=0V f=1MHz
Output Capacitance		C_{OSS}	-	38	-		
Reverse Transfer Capacitance		C_{RSS}	-	27	-		
Source-Drain Diode							
Forward On Voltage [2]		V_{SD}	-	-	1.2	V	I_S=1A, V_{GS}=0

Notes:
1. Pulse width is limited by the maximum junction temperature.
2. Pulse width≦300μs, duty cycle≦2%.
3. The surface of the device is mounted on 1 in^2 copper pad of FR4 board；270 ℃ / W when mounted on Min. copper pad.

CHARACTERISTIC CURVES

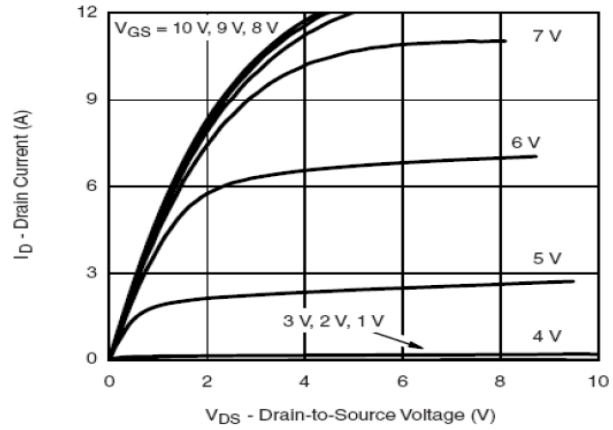


Fig 1. Typical Output Characteristics

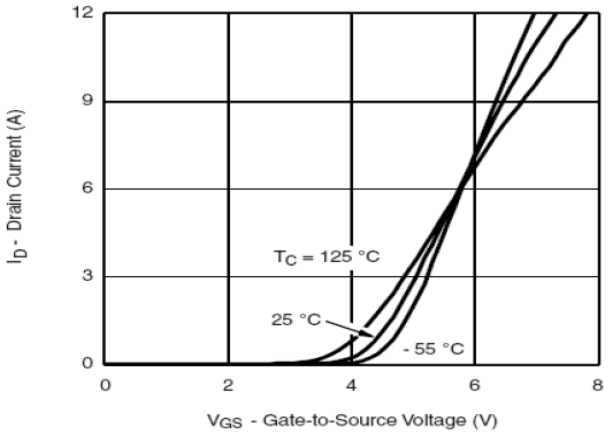


Fig 2. Transfer Characteristics

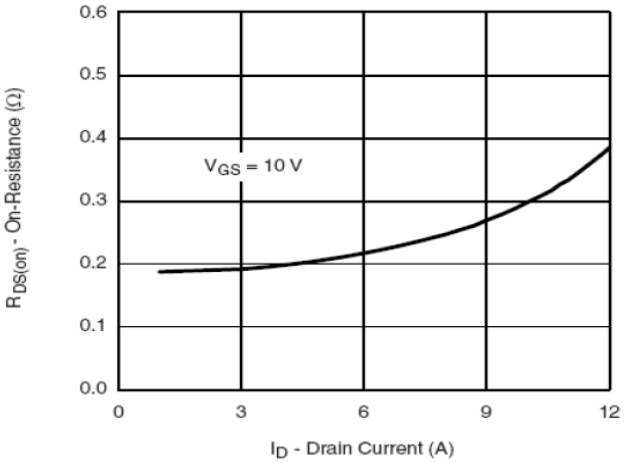


Fig 3. On-Resistance vs. Drain Current and Gate Voltage

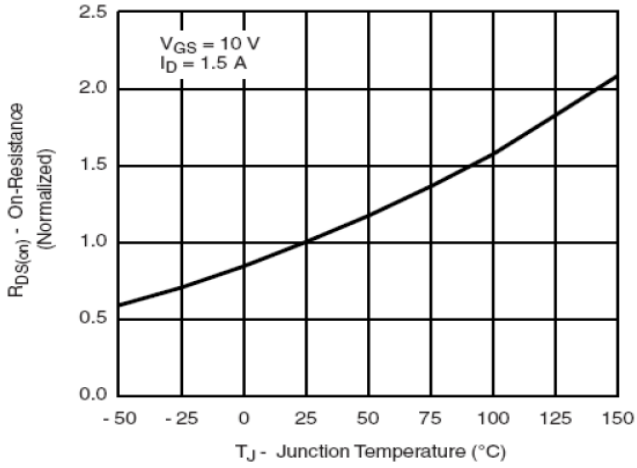


Fig 4. On-Resistance vs. Junction Temperature

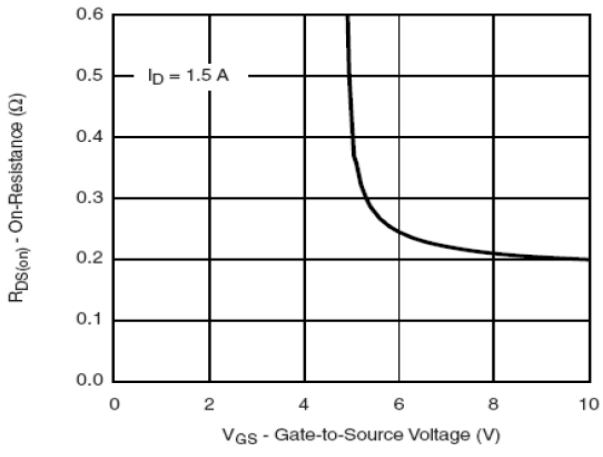


Fig 5. On-Resistance vs. Gate-Source Voltage

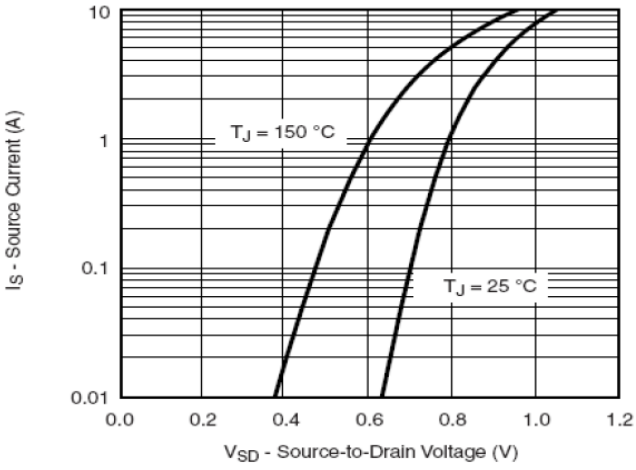


Fig 6. Body Diode Characteristics

CHARACTERISTIC CURVES

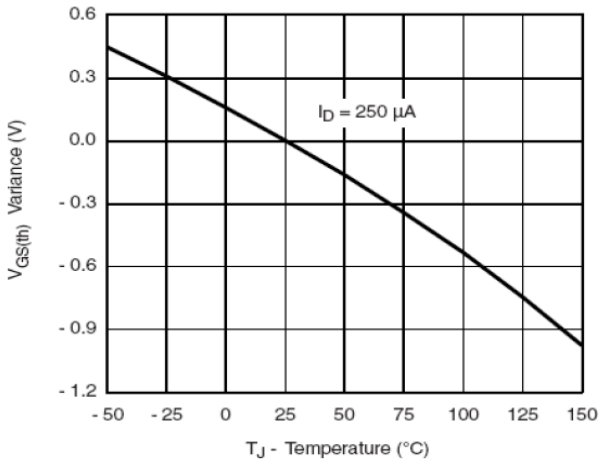


Fig 7. Threshold Voltage vs. Junction Temperature

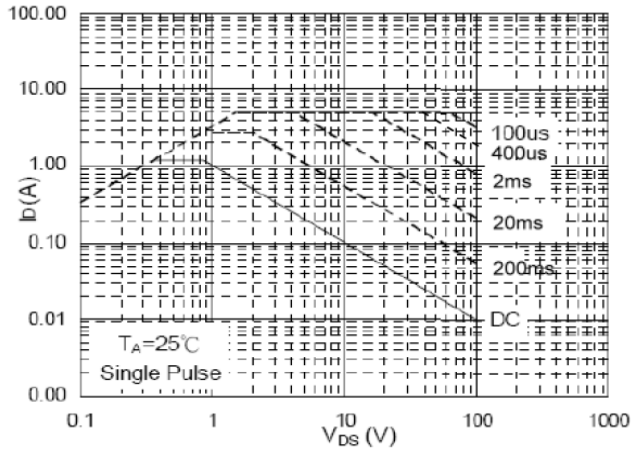


Fig 8. Safe Operating Area

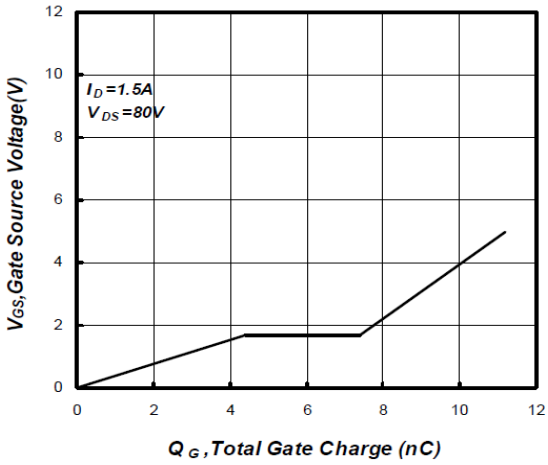


Fig 9. Gate Charge Characteristics

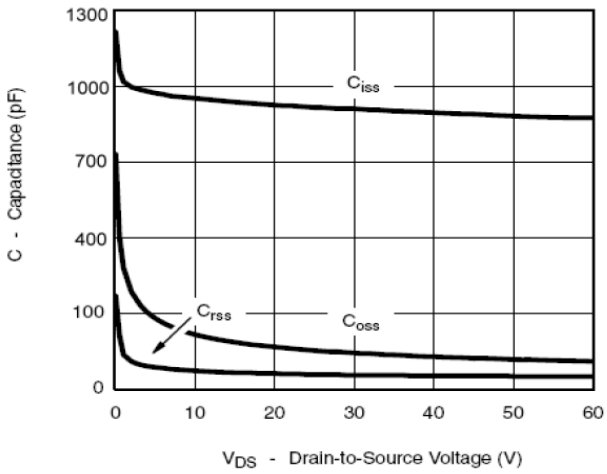


Fig 10. Typical Capacitance Characteristics

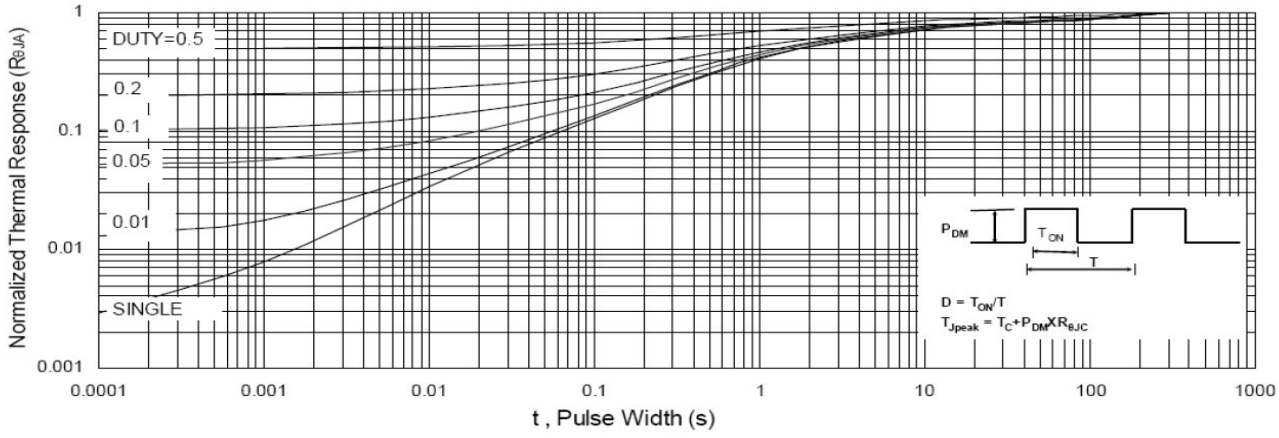


Fig 11. Normalized Maximum Transient Thermal Impedance