SM3018KWH

N-Channel Enhancement Mode Field Effect Transistor

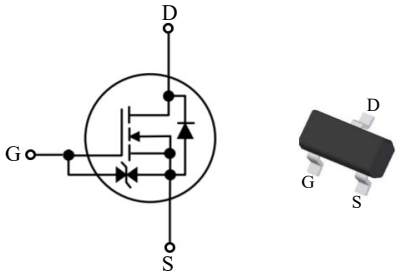
FEATURES

· Low on-resistance

· Fast switching speed

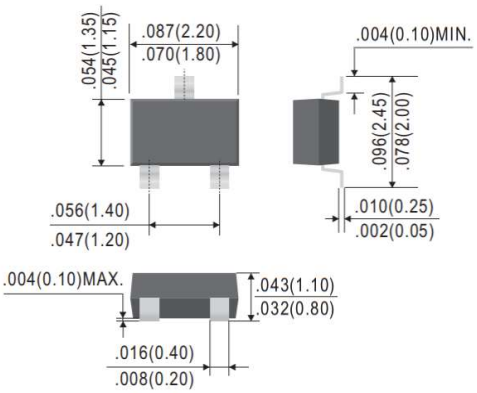
· ESD protected

· Suffix "H" indicates Halogen-free parts, ex. SM3018KWH



D	Drain
G	Gate
S	Source

SOT-323



Dimensions in inch and (millimeter)

Maximum Ratings(T_A=25 ℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	±20	V
Drain Current	I_D	100	mA
Peak Drain Current, Pulsed (Note 1)	I_{DM}	500	mA
Power Dissipation (Note 2)	P_D	200	mW
Thermal Resistance from Junction to Ambient (Note 2)	$R_{\theta JA}$	625	℃/W
Operating and Storage Temperature Range	T_J ,T_{stg}	- 55 to + 150	℃

Note :

1. Pulse Width ≤100μs, Duty Cycle ≤2%, Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C.

2. Device mounted on FR-4 substrate PC board, with minimum recommended pad layout.

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Electrical Characteristics(T_A=25 ℃ unless otherwise specified)

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Static						
Drain Source Breakdown Voltage	I_D=10μA	BV_{DSS}	30	-	-	V
Zero Gate Voltage Drain Current	V_{DS}=30V	I_{DSS}	-	-	1	μA
Gate Source Leakage Current	V_{GS}=±20V	I_{GSS}	-	-	±1	μA
Gate Threshold Voltage	V_{DS}=3V, I_D=100μA	$V_{GS(th)}$	0.8	-	1.5	V
Static Drain Source On-Resistance	V_{GS}=4V, I_D=10mA V_{GS}=2.5V, I_D=1mA	$R_{DS(on)}$	- -	- -	8 13	Ω
Forward Transfer Admittance	V_{DS}=3V, I_D=10mA	g_{fs}	20	-	-	mS
Dynamic						
Gate Resistance	V_{DS}=0, f=1MHz	R_g	-	200	-	Ω
Total Gate Charge	V_{DD}=10V, I_D=0.5A, V_{GS}=4.5V	Q_g	-	0.44	-	nC
Gate-Source Charge		Q_{gs}	-	0.20	-	
Gate-Drain Charge		Q_{gd}	-	0.10	-	
Input Capacitance	V_{DS}=25V, f=1MHz	C_{iss}	-	21.00	-	pF
Output Capacitance		C_{oss}	-	12.00	-	
Reverse Transfer Capacitance		C_{rss}	-	0.35	-	
Turn-On Delay Time	V_{DD}=30V, I_D=0.5A, V_{GS}=10V, R_L=60Ω, R_g=25Ω	$t_{d(on)}$	-	2.7	-	ns
Rise Time		t_r	-	2.5	-	
Turn-Off Delay Time		$t_{d(off)}$	-	13.0	-	
Fall time		t_f	-	8.0	-	
Drain-Source Body Diode						
Diode Forward Voltage	I_S=0.5A, V_{GS}=0V	V_{SD}	-	0.85	1.20	V

RATINGS AND CHARACTERISTIC CURVES

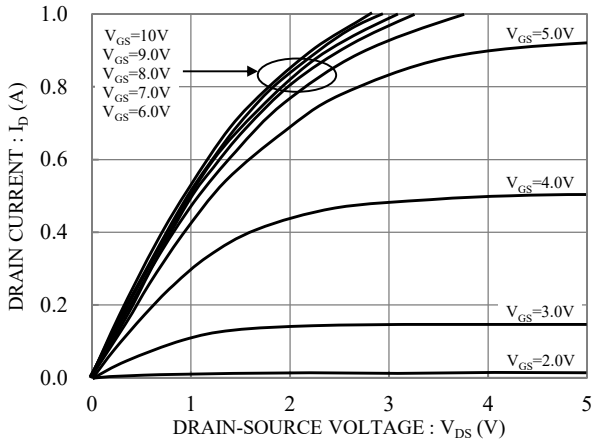

Fig.1 Typical Output Characteristics

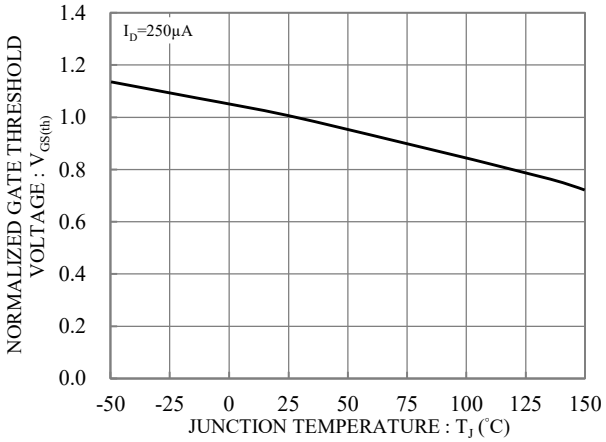

Fig.2 Gate Threshold Voltage vs. Junction Temperature

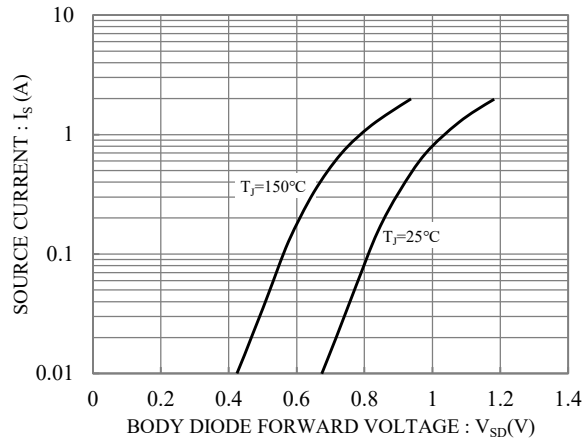

Fig.3 Body Diode Forward Voltage vs. Source Current

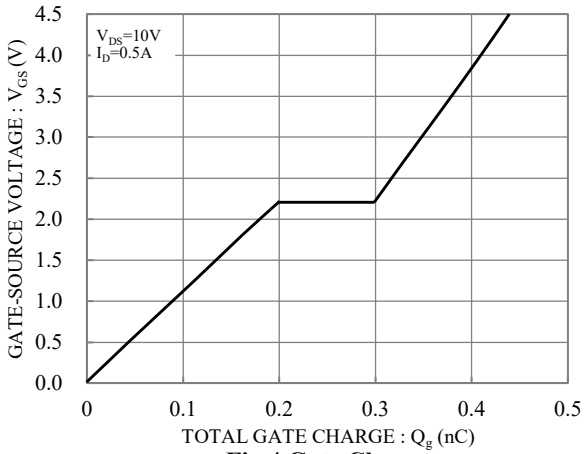

Fig.4 Gate Charge

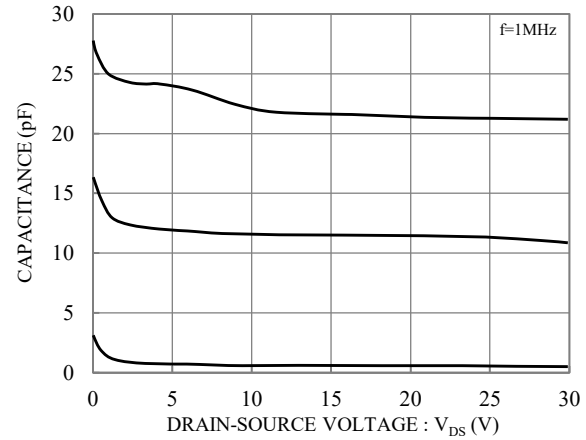

Fig.5 Capacitance vs Drain-Source Voltage

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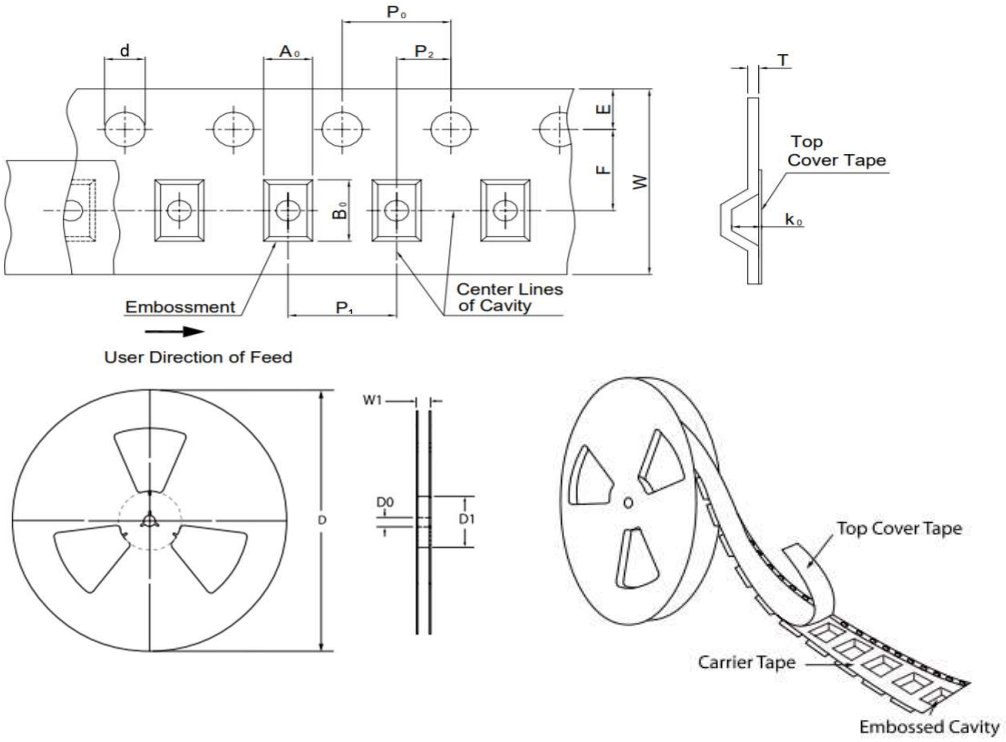
TAPE & REEL SPECIFICATION



Item	Symbol	SOT-323
Carrier width	A_0	2.30 ± 0.10
Carrier length	B_0	2.30 ± 0.10
Carrier depth	K_0	1.30 ± 0.10
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	178.00 ± 2.00
Feed hole width	D_0	13.00 ± 0.50
Reel inner diameter	D_1	MIN. 50.00
Sprocke hole position	E	1.75 ± 0.10
Punch hole position	F	3.50 ± 0.10
Sprocke hole pitch	P_0	4.00 ± 0.10
Punch hole pitch	P_1	4.00 ± 0.10
Embossment center	P_2	2.00 ± 0.10
Overall tape thickness	T	0.20 ± 0.05
Tape width	W	8.00 ± 0.20
Reel width	W1	MAX. 14.50

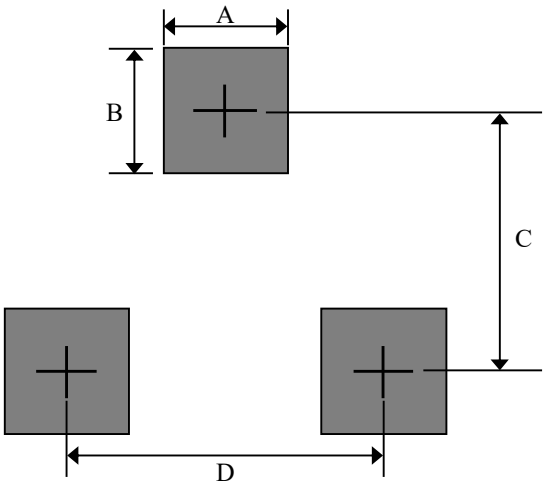
ORDER INFORMATION

Package	Reel Size	Quantity
SOT-323	7"	3,000

MARKING CODE

Part Number	Marking Code
SM3018KWH	KN

SUGGESTED SOLDER PAD LAYOUT



Unit : mm

PACKAGE	A	B	C	D
SOT-323	0.80	0.80	1.60	1.30