SM06N2UKWTH

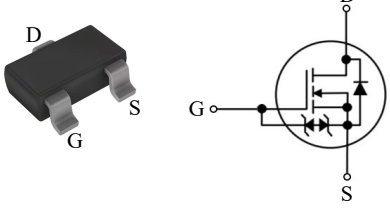
N-Channel Enhancement Mode Field Effect Transistor

FEATURES

· Low Gate Threshold Voltage

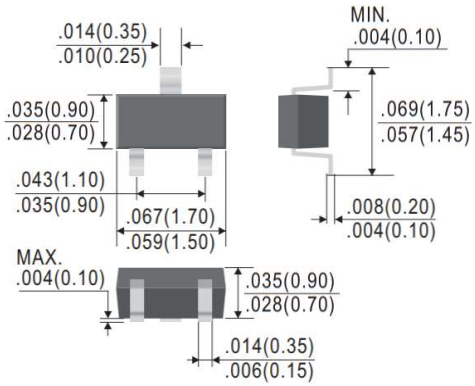
· ESD Protected≥1kV

· Suffix "H" indicates Halogen-free parts, ex. SM06N2UKWTH



D	Drain
G	Gate
S	Source

SOT-523



Dimensions in inch and (millimeter)

Maximum Ratings(T_A=25 ℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V_{DSS}	60	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current		I_D	0.35	A
Pulsed Drain Current	(Note 1)	I_{DM}	1.2	A
Power Dissipation	(Note 2)	P_D	0.2	W
Thermal Resistance Juntion 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℃

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	Conditions	Symbol	Min.	Typ.	Max.	Unit
Static						
Drain Source Breakdown Volta	I_D=250μA	V_{DSS}	60	-	-	V
Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	$V_{GS(th)}$	0.5	-	1.0	V
Zero Gate Voltage Drain Current	V_{DS}=48V	I_{DSS}	-	-	1	μA
Gate-Body Leakage Current	V_{GS}=±16V	I_{GSS}	-	-	±10	μA
Drain-Source On-State Resistance	V_{GS}=10V, I_D=500mA	$R_{DS(ON)}$	-	-	1.5	Ω
	V_{GS}=4.5V, I_D=200mA		-	-	2.2	
	V_{GS}=2.5V, I_D=100mA		-	-	4.0	
	V_{GS}=1.8V, I_D=10mA		-	-	4.8	
Forward Transfer Admittance	V_{DS}=10V, I_D=0.2A	g_{fs}	-	470	-	ms
Dynamic						
Gate Resistance	V_{GS}=0V, V_{DS}=0V, f=1MHz	R_g	-	100	-	Ω
Total Gate Charge	V_{DS}=25V, I_D=1A, V_{GS}=4.5V	Q_g	-	0.85	-	nC
	V_{DS}=25V, I_D=1A, V_{GS}=10V		-	1.30	-	
Gate Source Charge		Q_{gs}	-	0.45	-	
Gate Drain Charge		Q_{gd}	-	0.30	-	
Input Capacitance	V_{DS}=25V, V_{GS}=0V, f=1MHz	C_{iss}	-	33	-	pF
Output Capacitance		C_{oss}	-	10	-	
Reverse Transfer Capacitance		C_{rss}	-	8	-	
Turn-On Delay Time	V_{DS}=30V, V_{GS}=10V, I_D=0.5A, R_g=25Ω	$t_{d(on)}$	-	5.4	-	ns
Turn-On Rise Time		t_r	-	3.0	-	
Turn-Off Delay Time		$t_{d(off)}$	-	6.0	-	
Turn-Off Fall Time		t_f	-	30.0	-	
Drain-Source Body Diode						
Drain-Source Diode Forward Voltage	I_S=0.5A	V_{SD}	-	-	1.3	V
Continuous Source Curren	-	I_S	-	-	0.35	A
Reverse Recovery Time	I_S=0.5A, di/dt=100A/μs	t_{rr}	-	42	-	ns
Reverse Recovery Charge		Q_{rr}	-	41	-	nC

RATINGS AND CHARACTERISTIC CURVES

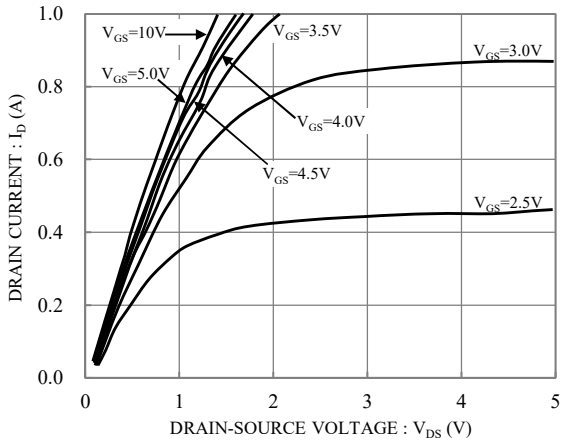


Fig.1 Typical output characteristics

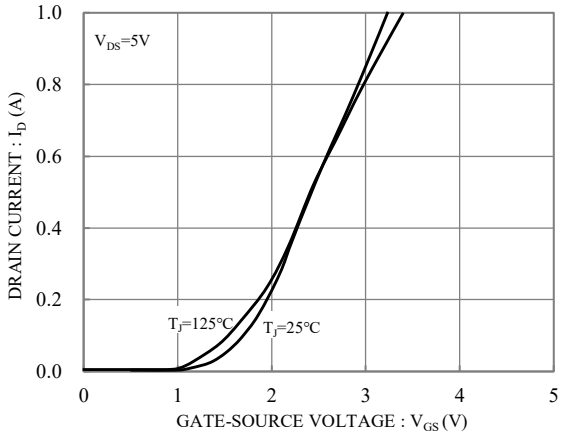


Fig.2 Typical transfer characteristics

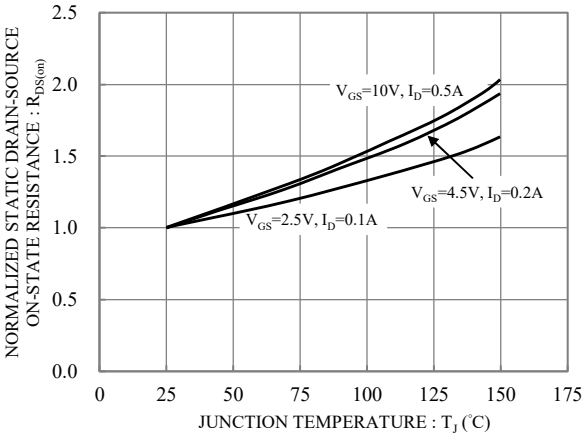


Fig.3 Drain-Source On-State Resistance vs Junction Tempearture

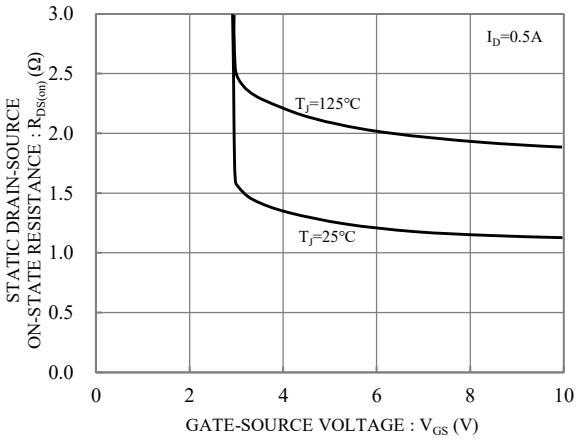


Fig.4 Static drain-source on-state resistance vs. gate-source voltage

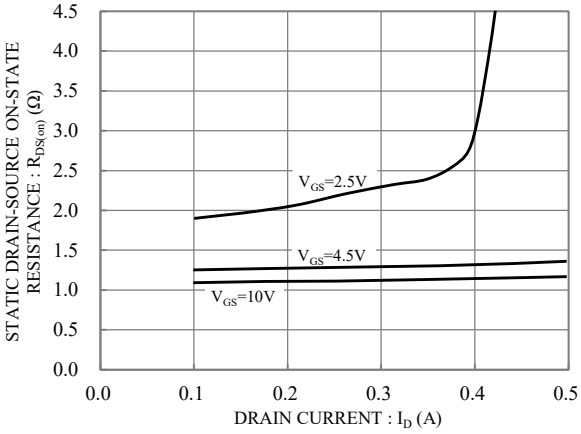


Fig.5 Static drain-source on-state resistance vs. Drain current

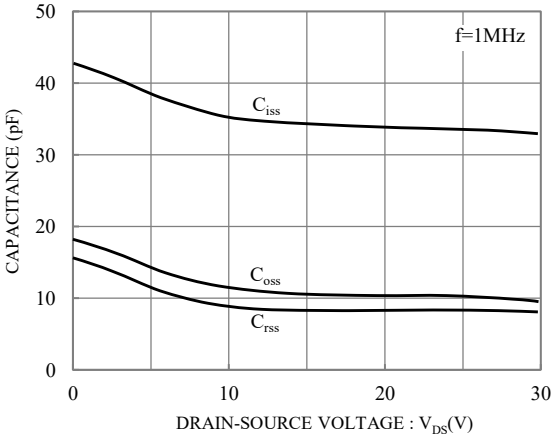


Fig.6 Capacitance vs Drain-to-Source Voltage

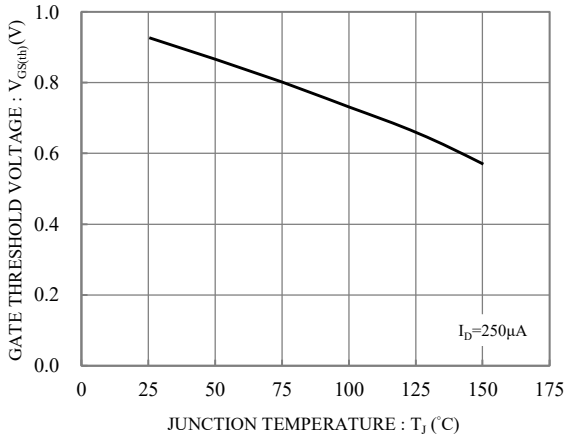


Fig.7 Threshold Voltage vs Junction Tempearture

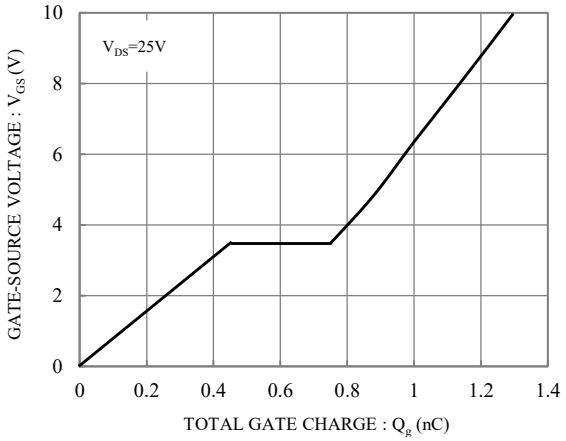


Fig.8 Gate Charge Characteristics

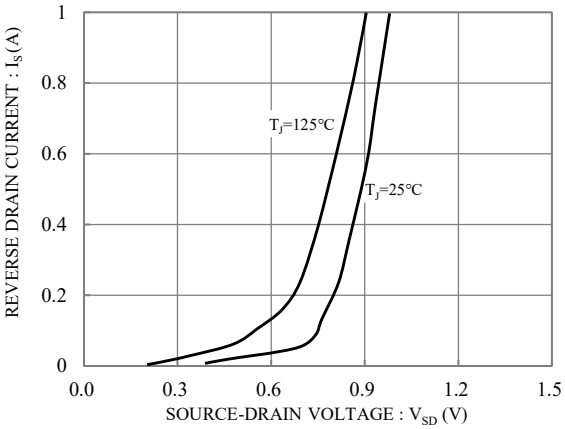


Fig.9 Typical Forward Characteristic

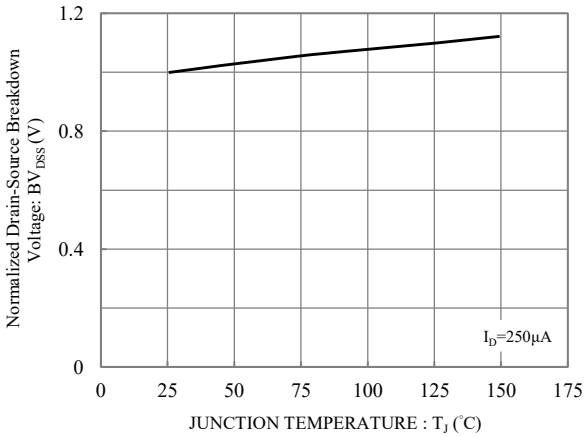
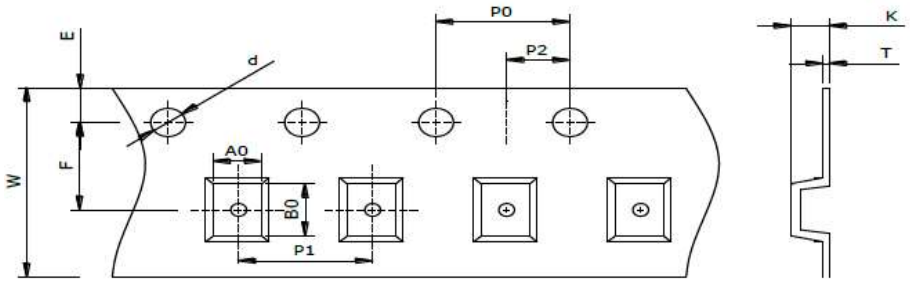
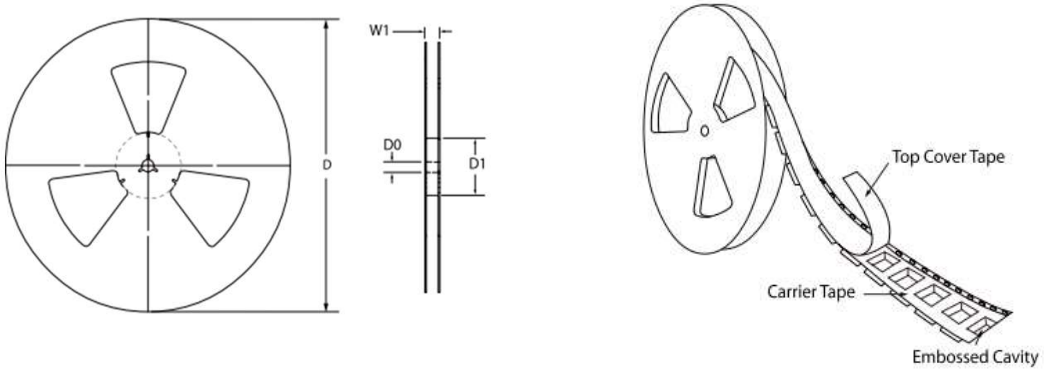


Fig.10 Brekdown Voltage vs Junction Temperature

TAPE & REEL SPECIFICATION





Item	Symbol	SOT-523
Carrier width	A_0	1.95 ± 0.10
Carrier length	B_0	1.90 ± 0.10
Carrier depth	K	1.20 ± 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

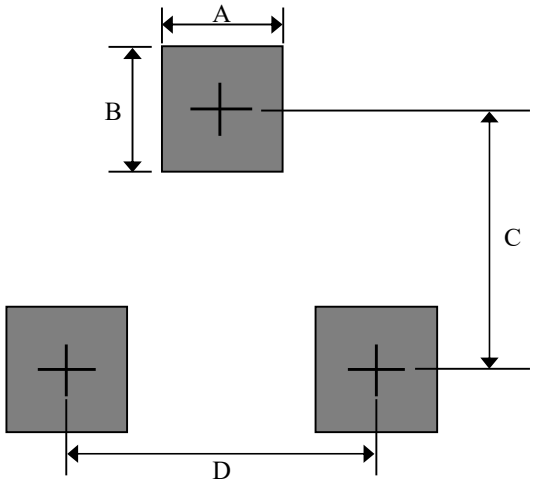
ORDER INFORMATION

Package	Reel Size	Quantity
SOT-523	7"	4,000

MARKING CODE

Part Number	Marking Code
SM06N2UKWTH	NH

SUGGESTED SOLDER PAD LAYOUT



Unit : mm

PACKAGE	A	B	C	D
SOT-523	0.70	0.70	1.30	1.00