SMG06N2UKLP

N-Channel Enhancement Mode Field Effect Transistor

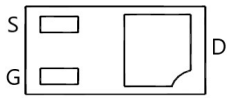
FEATURES

· Advanced Trench Cell Design

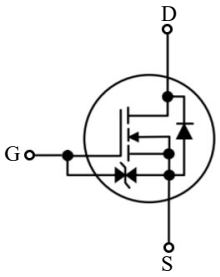
· Extremely Low Threshold Voltage

· ESD Protected

· Suffix "H" indicates Halogen-free parts, ex. SMG06N2UKLPH

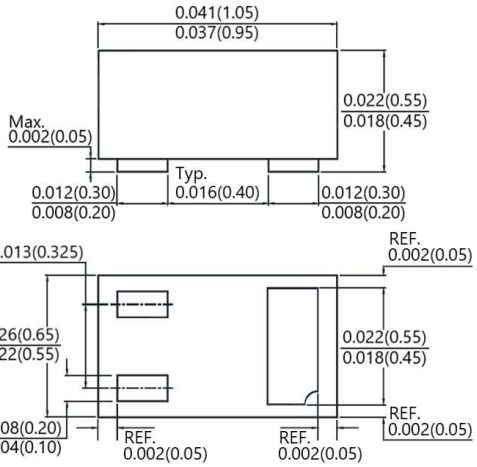


Bottom View



D	Drain
G	Gate
S	Source

DFN1006-3



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	350	mA
Peak Drain Current	I_{DM}	1.2	A
Total Power Dissipation	P_{tot}	223	mW
Thermal Resistance from Juntion to Ambient (Note 1)	$R_{\theta JA}$	560	℃/W
Operating and Storage Temperature Range	T_J ,T_{stg}	- 55 to + 150	℃

Note :

1. $R_{\theta JA}$ is the sum of the junction to case and case to ambient thermal resistance where the case thermal reference is defined as the sloder mounting surface of the drain pins. mounted on a 1 inch square pad of copper

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Electrical Characteristics(T_A=25 ℃ unless otherwise specified)

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Static						
Drain Source Breakdown Voltag	I_D=250μA	BV_{DSS}	60	-	-	V
Zero Gate Voltage Drain Current	V_{DS}=48V	I_{DSS}	-	-	1	μA
Gate Source Leakage Current	V_{GS}=±20V	I_{GSS}	-	-	±10	μA
Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	$V_{GS(th)}$	0.80	-	1.25	V
Static Drain Source On-Resistance	V_{GS}=10V, I_D=500mA	$R_{DS(ON)}$	-	-	1.4	Ω
	V_{GS}=4.5V, I_D=200mA		-	-	2.2	
	V_{GS}=2.5V, I_D=100mA		-	-	4.0	
Dynamic						
Gate Resistance	V_{DS}=0, V_{GS}=0, f=1MHz	R_g	-	100	-	Ω
Total Gate Charge	V_{DS}=25V, I_D=1A, V_{GS}=10V	Q_g	-	1.9	-	nC
Gate-Source Charge		Q_{gs}	-	0.5	-	nC
Gate-Drain Charge		Q_{gd}	-	0.2	-	nC
Input Capacitance	V_{GS}=0V, V_{DS}=25V, f=1MHz	C_{iss}	-	32.0	-	pF
Output Capacitance		C_{oss}	-	10.8	-	pF
Reverse Transfer Capacitance		C_{rss}	-	7.8	-	pF
Turn-On Delay Time	V_{GS}=10V, V_{DS}=30V, R_G=25Ω , I_D=0.5A, R_L=60Ω	$t_{d(on)}$	-	3.8	-	ns
Turn-On Rise Time		t_r	-	3.4	-	ns
Turn-Off Delay Time		$t_{d(off)}$	-	19.0	-	ns
Turn-Off Fall Time		t_f	-	12.0	-	ns
Drain-Source Body Diode						
Diode Forward Voltage	V_{GS}=0V, I_S=500mA	V_{SD}	-	-	1.5	V

RATINGS AND CHARACTERISTIC CURVES

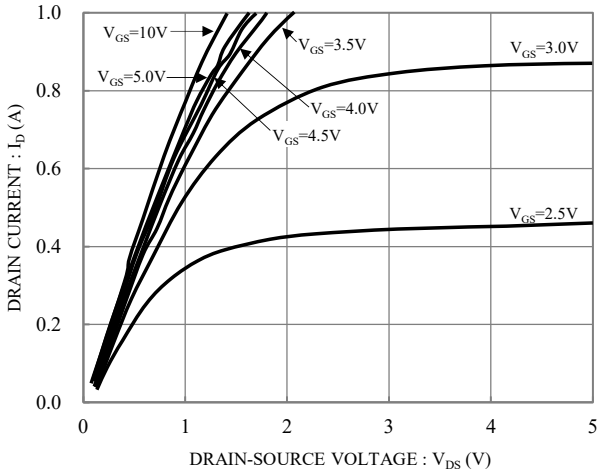

Fig.1 Typical Output Characteristics

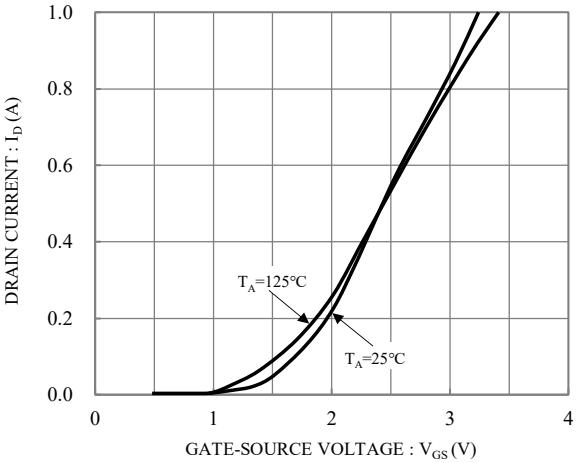

Fig.2 Typical Transfer Characteristics

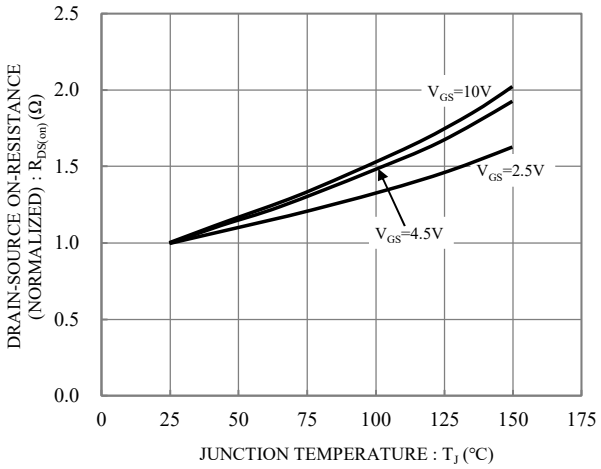

Fig.3 On-Resistance vs Junction Temperature

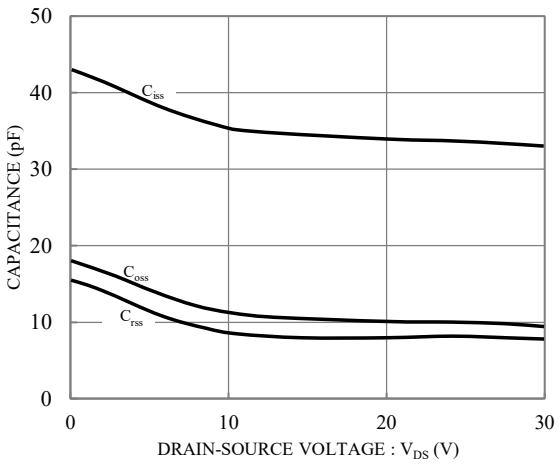

Fig.4 Capacitance vs Drain-Source Voltage

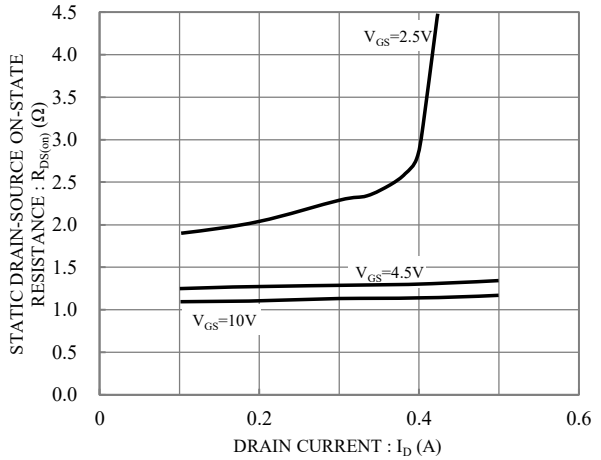

Fig.5 Static Drain-Source On-State Resistance vs. Drain current

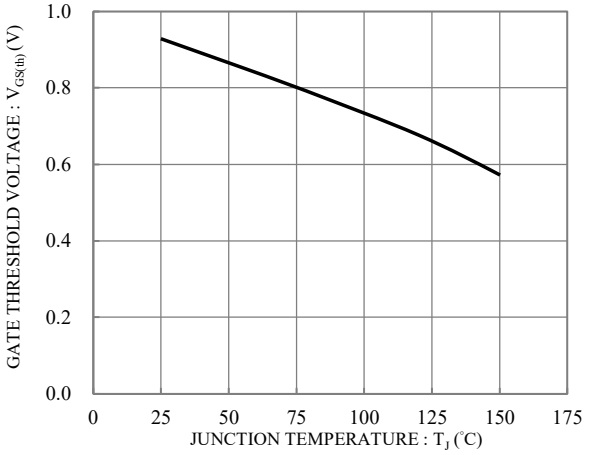

Fig.6 Gate Threshold Voltage vs. Junction Temperature

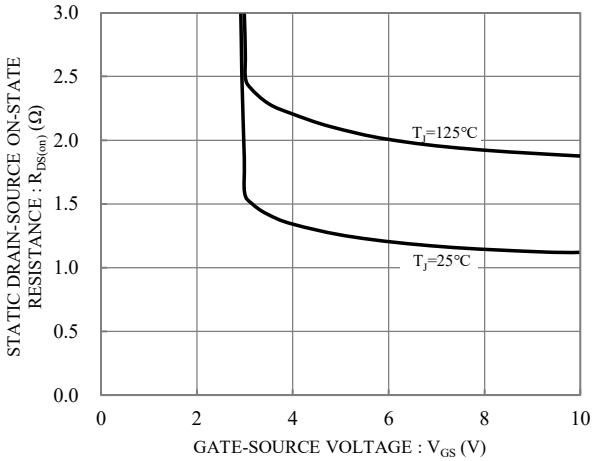

Fig.7 Static Drain-Source On-State Resistance vs Gate-Source Voltage

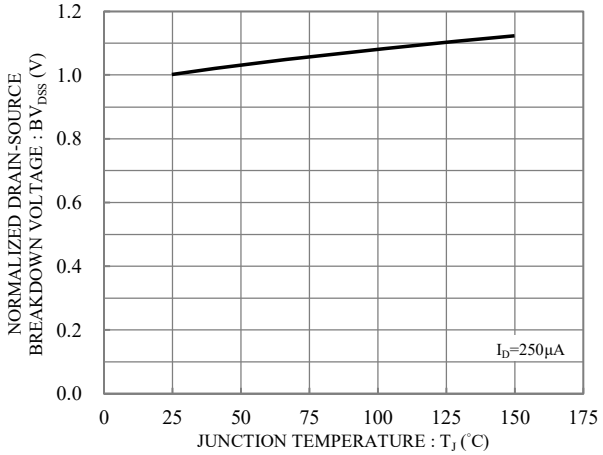

Fig.8 Breakdown Voltage vs Junction Temperature

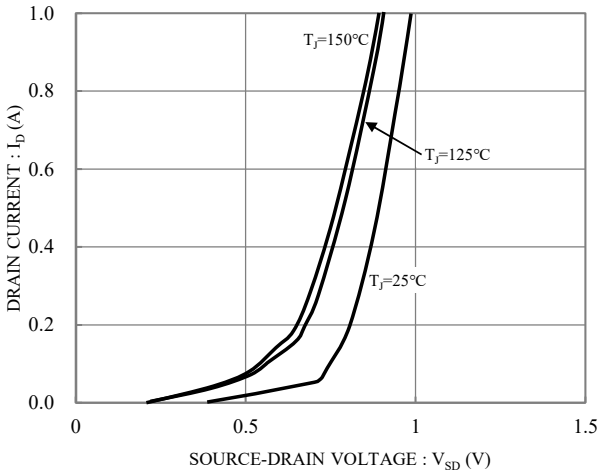

Fig.9 Diode Forward Voltage vs Drain Current

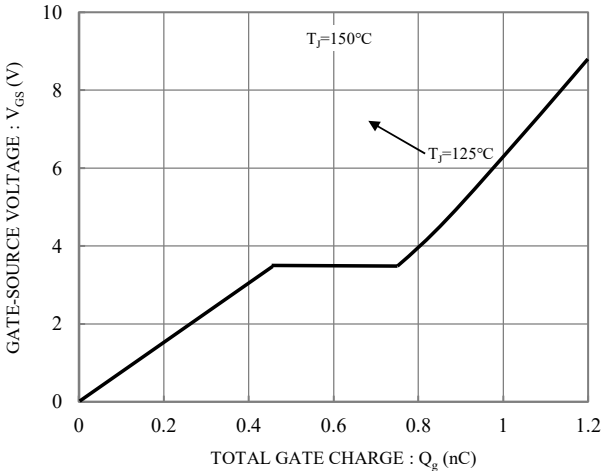

Fig.10 Gate Charge Characteristics

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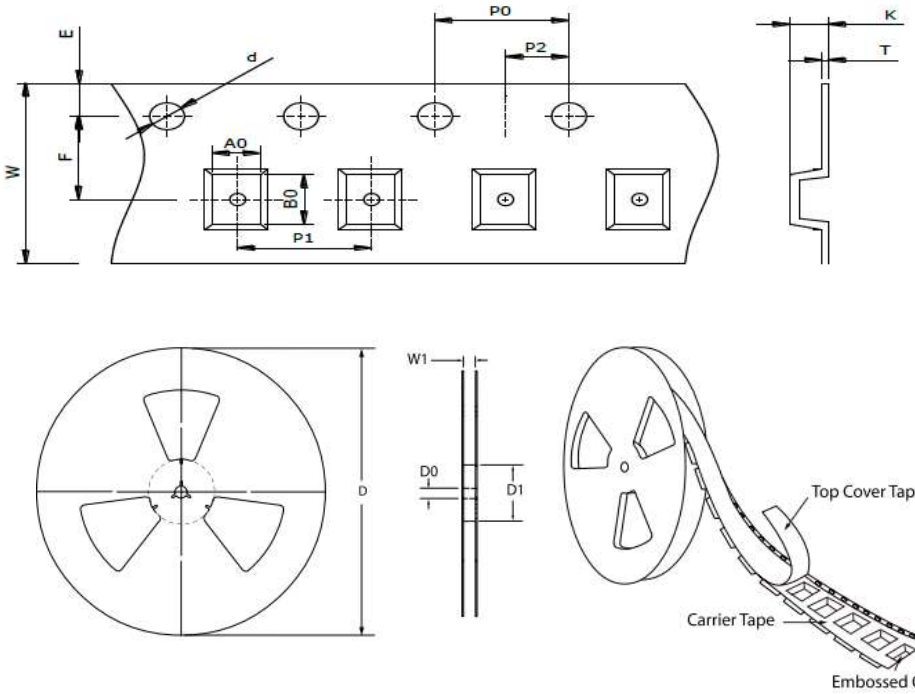
TAPE & REEL SPECIFICATION



Item	Symbol	DFN1006-3
Carrier width	A_0	0.85 ± 0.10
Carrier length	B_0	1.25 ± 0.10
Carrier depth	K	0.60 ± 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. 54.00
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	2.00 ± 0.10
Embossment center	P_2	2.00 ± 0.10
Overall tape thickness	T	MAX. 0.60
Tape width	W	8.00 ± 0.30
Reel width	W1	8.40 ± 1.50

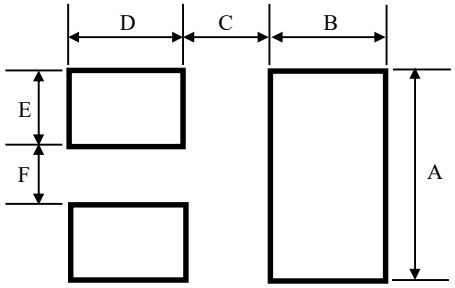
ORDER INFORMATION

Package	Reel Size	Quantity
DFN1006-3	7"	10,000

MARKING CODE

"MQ" = Part No.
" . " = Halogen Free
"YM" = Date Code
"Y" = Year
"M" = Month

SUGGESTED SOLDER PAD LAYOUT



Unit : mm

PACKAGE	A	B	C	D	E	F
DFN1006-3	0.70	0.40	0.30	0.40	0.25	0.20