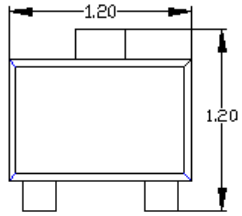
2N7002KM

N-channel MOSFET

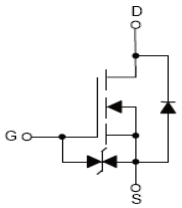
Features

◇ High Density Cell Design for Low RDS(ON)
◇ Voltage Controlled Small Signal Switch
◇ Small Outline Surface Mount Package
◇ RoHS compliant / Green EMC

SOT-723



Circuit Diagram



Device Marking Code

2N7002KM	RK or 72K

MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Drain Current-Continuous	0.34	A
P_D	Power Dissipation	0.15	W
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	833	℃/W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55～+150	℃

ELECTRICAL CHARACTERISTICS @ 25°C Unless Otherwise Specified

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	60			V
$V_{GS(th)}$	Gate-Threshold Voltage	V_{DS}=VGS, I_D=250μA	1.0	1.4	2.5	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=48V, V_{GS}=0V			1.0	uA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±20V, V_{DS}=0V			±10	μA
		V_{GS}=±10V, V_{DS}=0V			±200	nA
		V_{GS}=±5V, V_{DS}=0V			±100	nA
$R_{DS(on)}$	Drain-Source	V_{GS}=10V, I_D=500mA		1.3	4.0	Ω

	On-Resistance	V_{GS}=4.5V,I_D=200mA		1.4	4.5	
Q_r	Recovered Charge	V_{GS}=0V, I_S=300mA,V_R=25V dI/dt=-100A/μs		30		nC
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=10V,V_{GS}=0V, f=1MHz			40	pF
C_{oss}	Output Capacitance				30	
C_{rss}	Reverse Transfer Capacitance				10	
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=25V,V_{GS}=10V,R_L=250Ω, R_{GS}=50K,R_{GEN}=25Ω			10	nS
$t_{d(off)}$	Turn-off Delay Time				15	
t_{rr}	Reverse Recovery Time	V_{GS}=0V, I_S=300mA,V_R=25V, dI/dt=-100A/μs		30		
Source-Drain Diode Characteristics						
V_{SD}	Diode Forward Voltage	V_{GS}=0V, I_S=200mA		0.97	1.5	V

Ratings and Charactieristics Curve(TA=25℃ unless otherwise noted)

Fig. 1 - Output Charact eristics

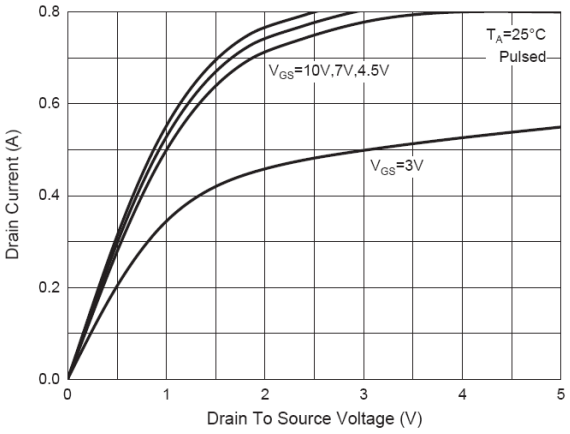


Fig. 2 - Transfer Characteristics

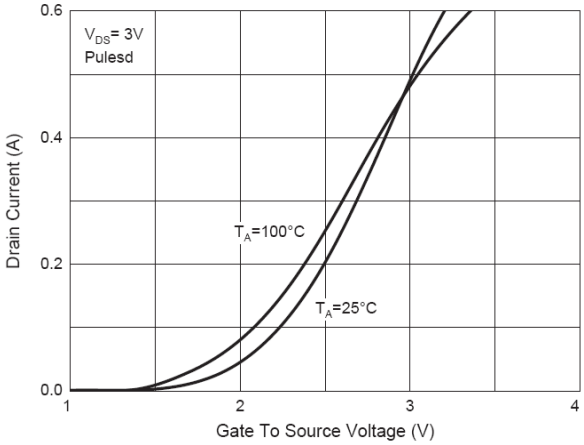


Fig. 3 - $R_{DS(ON)}$—I_D

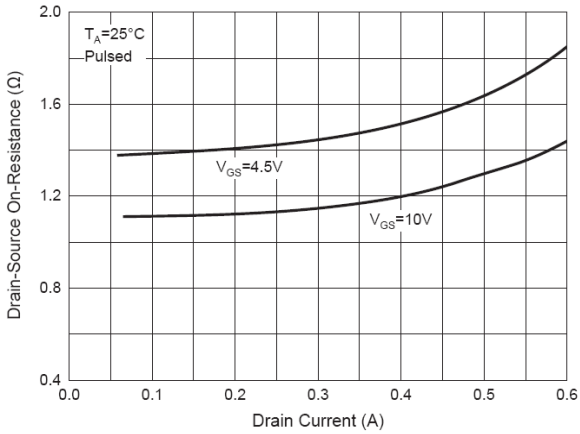


Fig. 4 - $R_{DS(ON)}$—V_{GS}

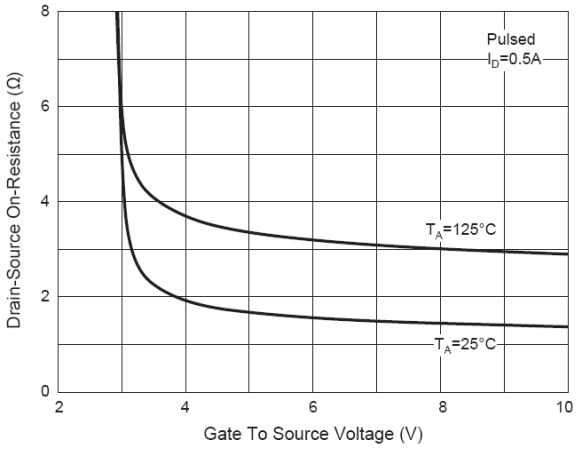


Fig. 5 - I_S—V_{SD}

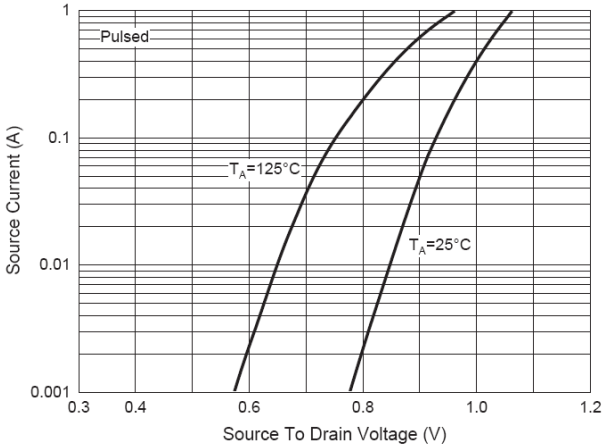
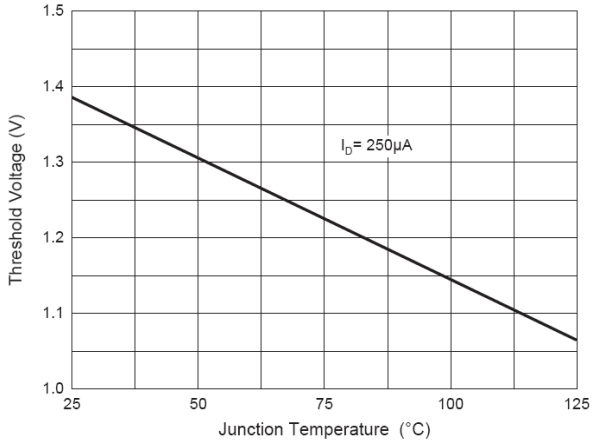


Fig. 6 - Threshold Voltage



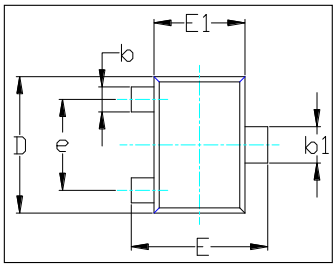
2N7002KM

N-channel MOSFET

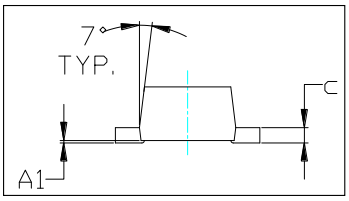
PACKAGE DIMENSIONS

Package outline : SOT723

Top view

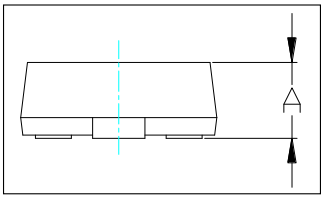


Side view

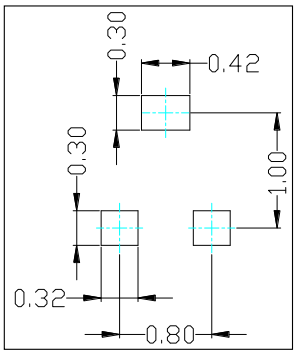


SYMBOL	DIMENSIONS IN MILLIMETER	
	MIN	MAX
A	0.430	0.500
A1	0.000	0.050
b	0.170	0.270
b1	0.270	0.370
c	0.080	0.150
D	1.150	1.250
E	1.150	1.250
E1	0.750	0.850
e	0.800 TYP.	
θ	0°	7°

Front view



Soldering Pattern



Notice:

1.Lead plating: Pb free solder
2.Lead thickness includes solder plating
3.Lead frame: CAC-5
4.Other Tolerance: ±0.05
5.Dimensions are exclusive of Burrs,Mold Flash and Tie Bar extrusions
6.Unit: mm

Package	Reel	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)
SOD-723	8000pcs	7inch	120,000pcs	203×203×195	480,000pcs	438×438×220