

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

MS2N7002M3

Product specification

Features

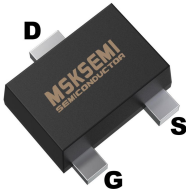
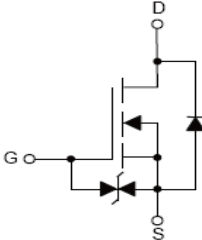

- High Density Cell Design for Low RDS(ON)
- Voltage Controlled Small Signal Switch
- Small Outline Surface Mount Package
- RoHS compliant / Green EMC

Reference News

- Notebook
- Smartphone
- Battery Protection
- Hand-held Instruments

BVDSS	RDSON	ID
60V	2.2Ω	0.34A

Reference News

PACKAGE OUTLINE	PIN Configuration	Marking
 <p>SOT-723</p>		

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
V_{EBO}	Emitter-Base Voltage	6	V
I_D	Drain Current-Continuous	0.34	A
P_D	Power Dissipation	0.15	W
R_{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} =V _{GS} , 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 On-Resistance	V _{GS} =10V, I _D =500mA		1.3	4.0	Ω
		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

Curve Characteristics

Fig. 1 - Output Characteristics

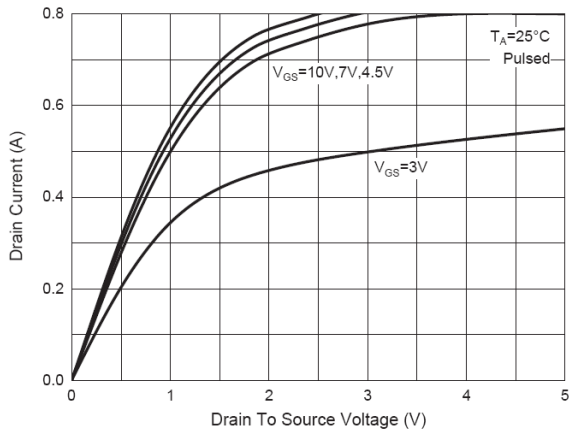


Fig. 2 - Transfer Characteristics

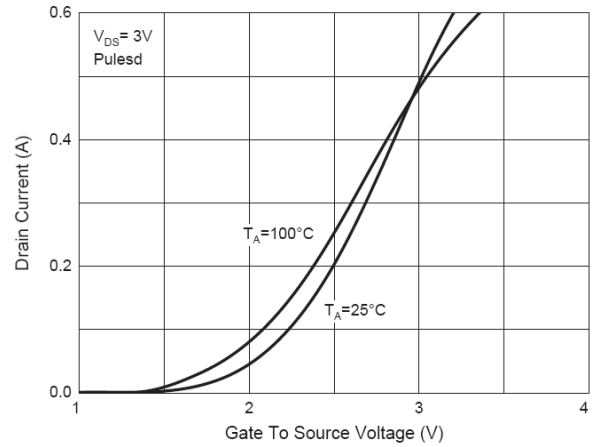


Fig. 3 - $R_{DS(ON)} - I_D$

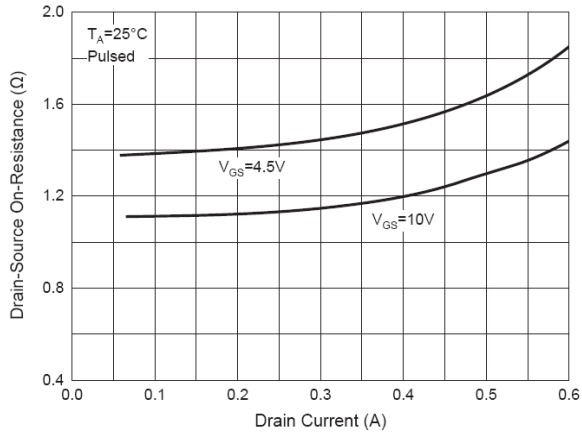


Fig. 4 - $R_{DS(ON)} - V_{GS}$

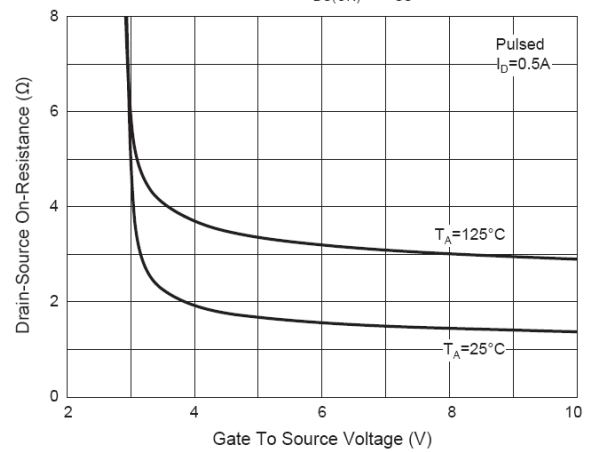


Fig. 5 - $I_S - V_{SD}$

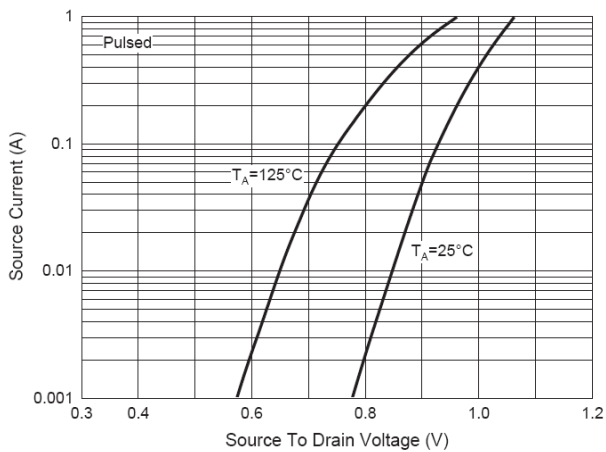
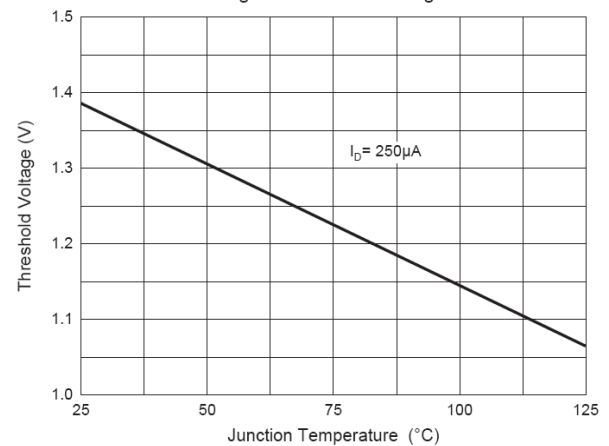
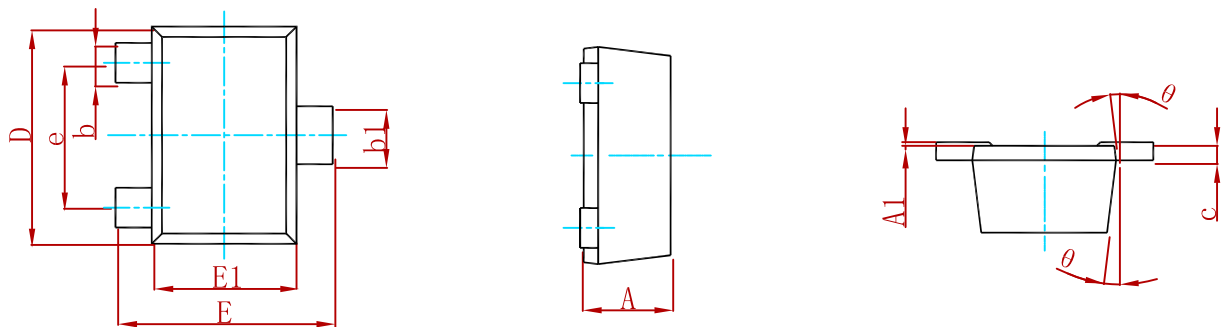


Fig. 6 - Threshold Voltage

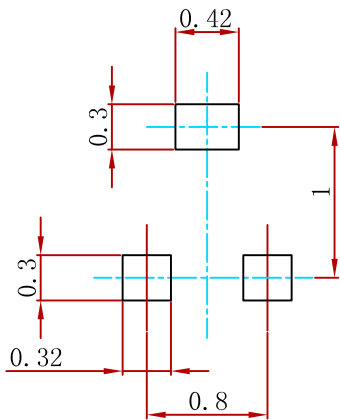


PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	

Suggested Pad Layout



Note:
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

REEL SPECIFICATION

P/N	PKG	QTY
MS2N7002M3	SOT-723	8000

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