

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



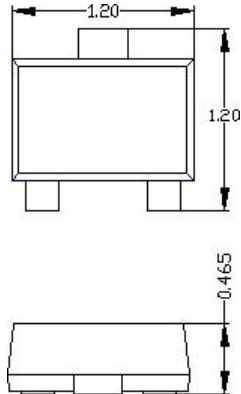
GDT



PLED

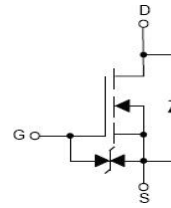
Product data sheet

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



SOT723

Circuit Diagram



**ELECTRICAL CHARACTERISTICS @ 25° C Unless Otherwise Specified**

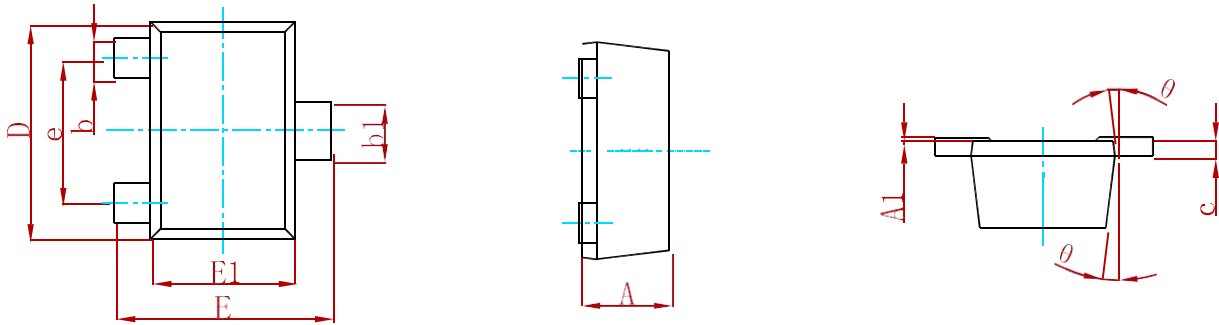
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	60			V
$V_{GS(th)}$	Gate-Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.4	2.5	V
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=48V, V_{GS}=0V$			1.0	$\mu A$
$I_{GSS}$	Gate-Body Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 10$	$\mu A$
		$V_{GS}=\pm 10V, V_{DS}=0V$			$\pm 200$	nA
		$V_{GS}=\pm 5V, V_{DS}=0V$			$\pm 100$	nA

**MAXIMUM RATINGS (Ta=25°C 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
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	833	°C/W
$T_j$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature	-55~+150	°C

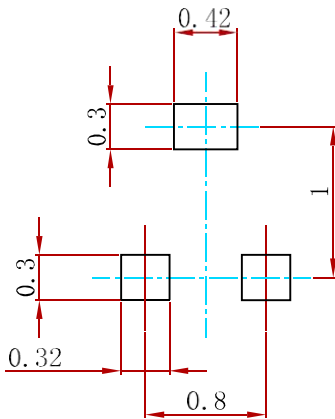
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V, I_D=500mA$	1.3	4.0	$\Omega$
		$V_{GS}=4.5V, I_D=200mA$	1.4	4.5	
$Q_r$	Recovered Charge	$V_{GS}=0V, I_S=300mA, V_R=25V$ $di/dt=-100A/\mu s$	30		nC
<b>Dynamic Characteristics</b>					
$C_{iss}$	Input Capacitance	$V_{DS}=10V, V_{GS}=0V, f=1MHz$		40	pF
$C_{oss}$	Output Capacitance			30	
$C_{rss}$	Reverse Transfer Capacitance			10	
<b>Switching Characteristics</b>					
$t_{d(on)}$	Turn-on Delay Time	$V_{DD}=25V, V_{GS}=10V, R_L=250\Omega,$ $R_{GS}=50K, R_{GEN}=25\Omega$		10	nS
$t_{d(off)}$	Turn-off Delay Time			15	
$t_{rr}$	Reverse Recovery Time	$V_{GS}=0V,$ $I_S=300mA, V_R=25V,$ $di/dt=-100A/\mu s$	30		
<b>Source-Drain Diode Characteristics</b>					
$V_{SD}$	Diode Forward Voltage	$V_{GS}=0V, I_S=200mA$	0.97	1.5	V

**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: ± 0.05mm.
  3. The pad layout is for reference purposes only.

**REEL SPECIFICATION**

P/N	PKG	QTY
MS2N7002M3	SOT-723	8000

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