

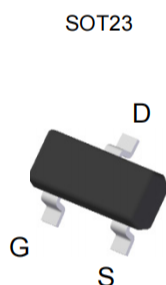
Product Summary

- $V_{DS} = 60V, I_D = 0.3A$
 $R_{DS(ON)} < 2.5 \Omega @ V_{GS}=4.5V$
 $R_{DS(ON)} < 2.2 \Omega @ V_{GS}=10V$
- ESD Rating : HBM 2000V

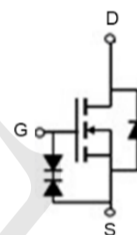
Application

- Direct logic-level interface: TTL/CMOS
- Drivers: relays, solenoids, lamps, hammers, display, memories, transistors, etc.
- Battery operated systems
- Solid-state relays

Package and Pin Configuration



Circuit diagram



Marking: 7002

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ($T_J = 150^\circ\text{C}$)	$T_A = 25^\circ\text{C}$	I_D	0.3	A
	$T_A = 100^\circ\text{C}$		0.19	
Drain Current-Pulsed (Note 1)		I_{DM}	1.5	A
Maximum Power Dissipation		P_D	0.35	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55 To 150	$^\circ\text{C}$

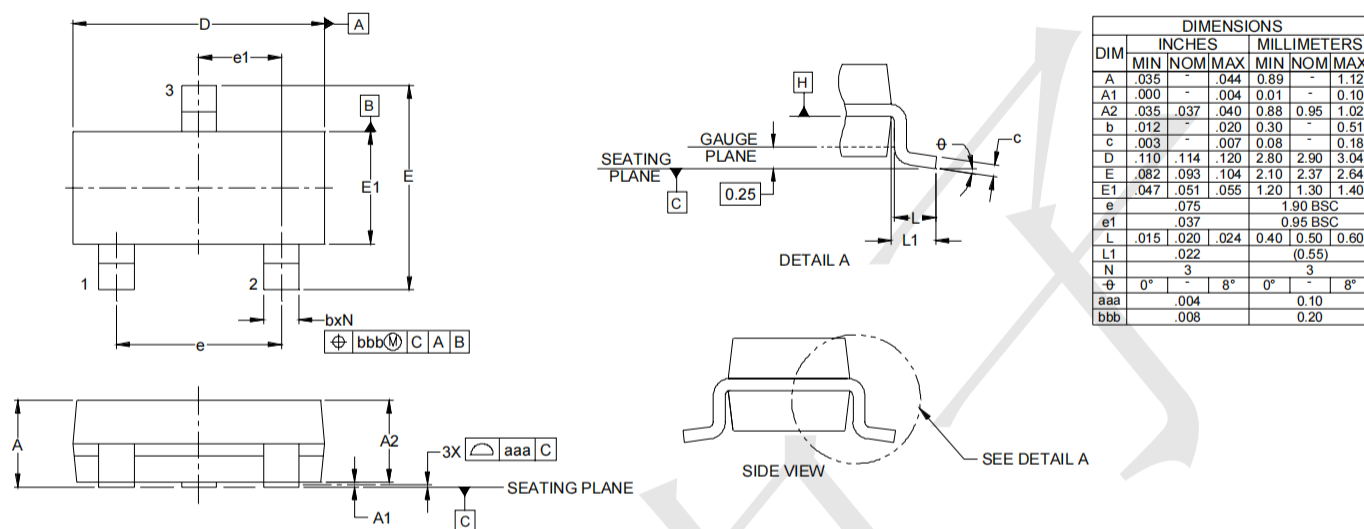
Thermal Characteristic

Thermal Resistance, Junction-to-Ambient (Note 2)	$R_{\theta JA}$	350	$^\circ\text{C/W}$
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Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250μA	60		-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±10V, V _{DS} =0V	-	-	±1	uA
		V _{GS} =±20V, V _{DS} =0V	-		±10	uA
On Characteristics (Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.6		
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =4.5V, I _D =0.2A	-	1.9	2.5	Ω
		V _{GS} =10V, I _D =0.3A	-	1.8	2.2	Ω
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =0.2A	0.1	-	-	S
Dynamic Characteristics (Note4)						
Input Capacitance	C _{ISS}	V _{DS} =30V, V _{GS} =0V, F=1.0MHz		27		PF
Output Capacitance	C _{OSS}			18		PF
Reverse Transfer Capacitance	C _{rss}			2		PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	t _{d(on)}	V _{DD} =30V, I _D =0.2A V _{GS} =10V, R _{GEN} =10Ω	-	10	-	nS
Turn-on Rise Time	t _r		-	50	-	nS
Turn-Off Delay Time	t _{d(off)}		-	17	-	nS
Tum-Off Fall Time	t _f		-	10	-	nS
Total Gate Charge	Q _g	V _{DS} = 10V, I _D =0.3A, V _{GS} =4.5V	-	1.7	3	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V _{SD}	V _{GS} =0V, I _S =0.2A	-	-	1.2	V
Diode Forward Current (Note 2)	I _S		-	-	0.3	A

SOT23 - Package Outline Drawing



Suggested Land Pattern

