



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	183m Ω @10V	2A
	186m Ω @6.0V	
	190m Ω @4.5V	

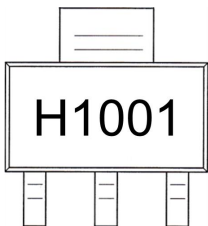
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance

Application

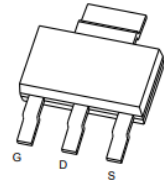
- Load Switch
- PWM

MARKING:

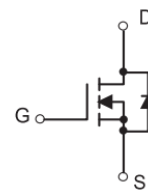


H1001 = Device Code

SOT-223



Schematic diagram



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	100	V
Gate - Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	2	A
Pulsed Drain Current ¹	I_{DM}	8	A
Power Dissipation ³	P_D	1.6	W
Thermal Resistance from Junction to Ambient ⁴	$R_{\theta JA}$	75	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

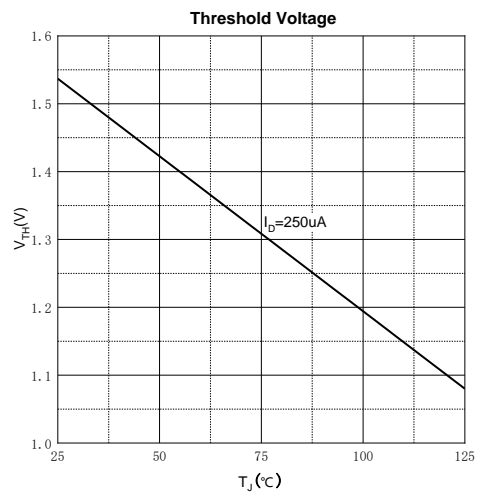
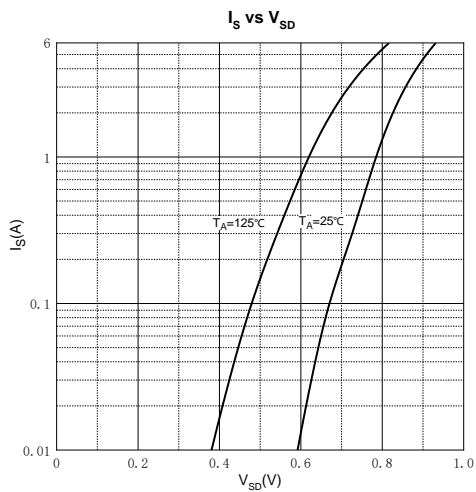
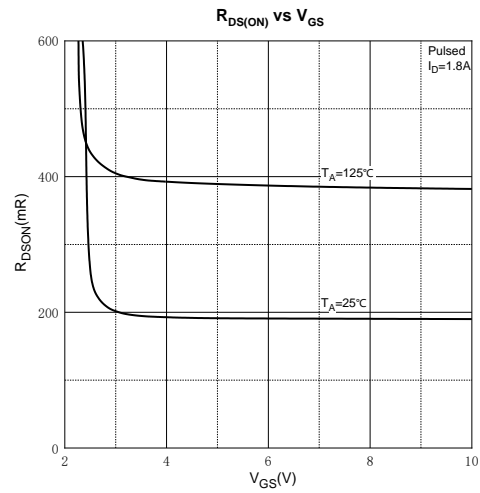
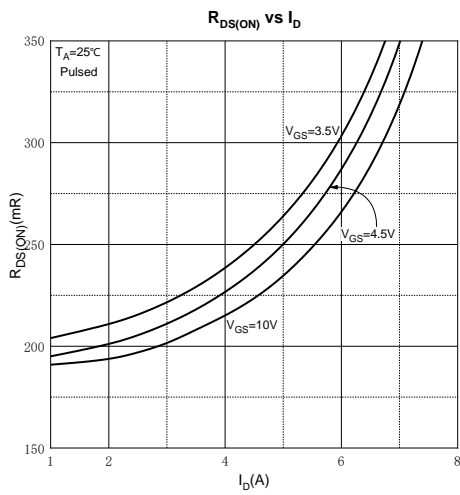
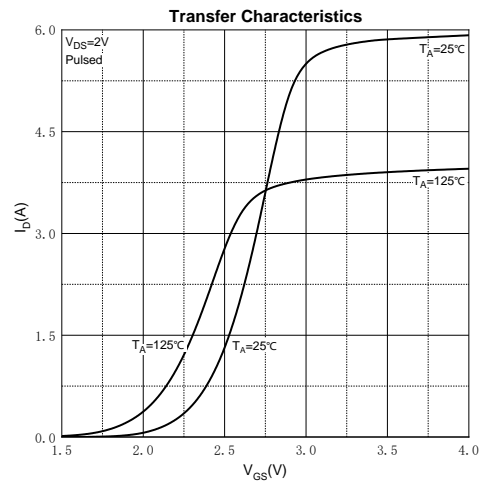
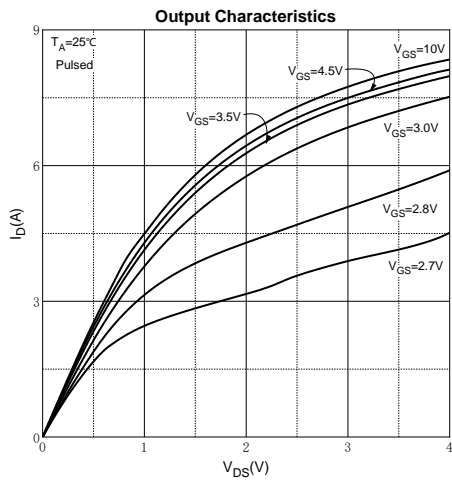
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics²						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.5	2.5	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 1.8A$		183	240	m Ω
		$V_{GS} = 6V, I_D = 1.8A$		186	260	
		$V_{GS} = 4.5V, I_D = 1.8A$		190	270	
Forward Transconductance	g_{FS}	$V_{DS} = 5V, I_D = 2A$		4.5		S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 45V, V_{GS} = 0V, f = 1MHz$		439.6		pF
Output Capacitance	C_{oss}			18.6		
Reverse Transfer Capacitance	C_{rss}			14.4		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		1.78		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 50V, V_{GS} = 10V, I_D = 1.8A$		12.1		nC
Gate-source Charge	Q_{gs}			1.5		
Gate-drain Charge	Q_{gd}			1.6		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 50V, V_{GS} = 10V, R_L = 25\Omega$ $R_G = 3\Omega$		3.5		ns
Turn-on Rise Time	t_r			2.8		
Turn-off Delay Time	$t_{d(off)}$			16		
Turn-off Fall Time	t_f			2.5		
Source - Drain Diode Characteristics						
Diode Forward Voltage ²	V_{SD}	$V_{GS} = 0V, I_S = 1.8A$			1.1	V

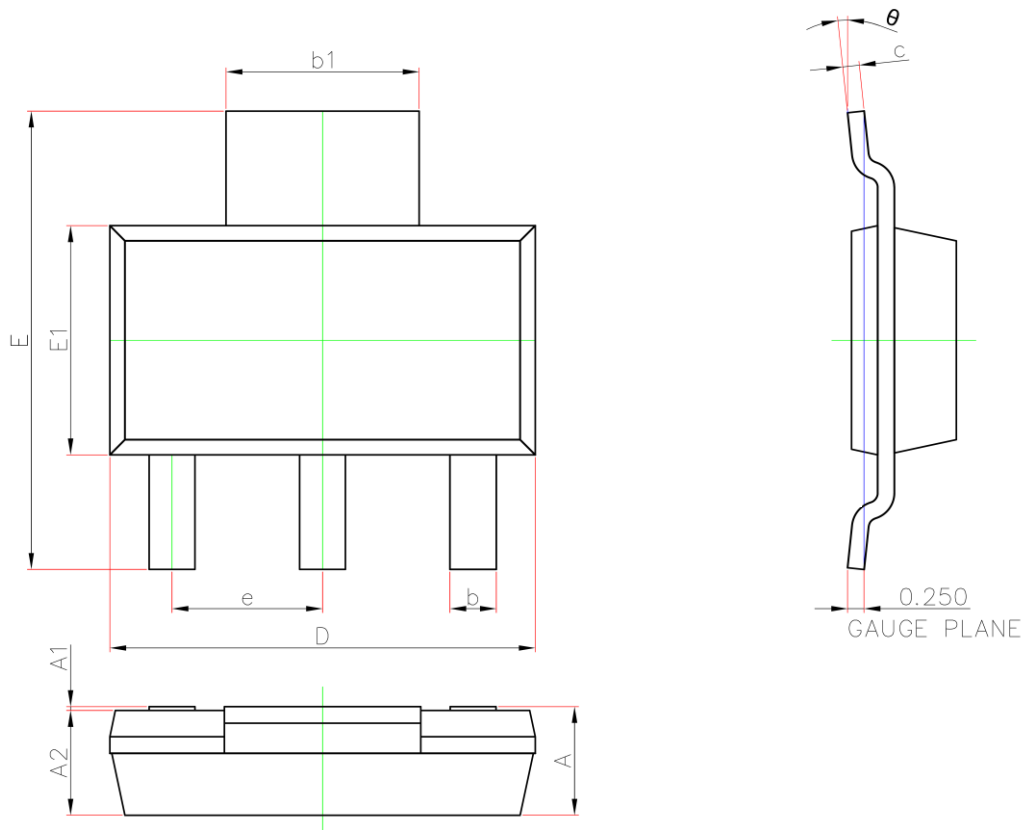
Notes :

- 1.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 2.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 3.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
- 4.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics



SOT-223 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.800MAX		0.071MAX	
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.600	0.840	0.024	0.033
b1	2.900	3.100	0.114	0.122
c	0.200	0.400	0.008	0.016
D	6.100	6.700	0.240	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300BSC		0.091BSC	
θ	0°	10°	0°	10°