



Description

JMT P-channel MOSFET

Features

- $V_{DS} = -30V$, $I_D = -4.2A$
- $R_{DS(ON)} < 90\text{ m}\Omega$ @ $V_{GS} = -2.5V$
 $R_{DS(ON)} < 75\text{ m}\Omega$ @ $V_{GS} = -4.5V$
 $R_{DS(ON)} < 55\text{ m}\Omega$ @ $V_{GS} = -10V$
- High Power and Current Handling Capability
- Lead Free Product is Acquired
- Surface Mount Package

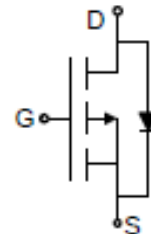
Application

- PWM Applications
- Load Switch
- Power Management

Package



SOT-23



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

Symbol	Parameter	Max.	Units
V_{DSS}	Drain-Source Voltage	-30	V
V_{GSS}	Gate-Source Voltage	± 12	V
I_D	Continuous Drain Current	$T_C = 25^\circ\text{C}$	-4.2
		$T_C = 100^\circ\text{C}$	-2.7
I_{DM}	Pulsed Drain Current <small>note1</small>	-17	A
P_D	Power Dissipation	$T_C = 25^\circ\text{C}$	1.2
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	104	$^\circ\text{C}/\text{W}$
T_J, T_{STG}	Operating and Storage Temperature Range	-55 to +150	$^\circ\text{C}$



Electrical Characteristics (T_C=25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D = -250μA	-30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = -24V, V _{GS} = 0V,	-	-	-1	μA
I _{GSS}	Gate to Body Leakage Current	V _{DS} =0V, V _{GS} = ±10V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = -250μA	-0.7	-1	-1.3	V
R _{DS(on)}	Static Drain-Source on-Resistance <small>note2</small>	V _{GS} =-10V, I _D =-4.2A	-	48	55	mΩ
		V _{GS} =-4.5V, I _D =-4A	-	56	75	
		V _{GS} =-2.5V, I _D =-1A	-	72	90	
g _{FS}	Forward Transconductance	V _{DS} =-5V, I _D = -4.2A	-	10	-	S
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} = -15V, V _{GS} = 0V, f = 1.0MHz	-	880	-	pF
C _{oss}	Output Capacitance		-	105	-	pF
C _{rss}	Reverse Transfer Capacitance		-	65	-	pF
Q _g	Total Gate Charge	V _{DS} = -15V, I _D = -4.2A, V _{GS} = -4.5V	-	8.5	-	nC
Q _{gs}	Gate-Source Charge		-	1.8	-	nC
Q _{gd}	Gate-Drain("Miller") Charge		-	2.7	-	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DD} = -15V, I _D = -4.2A, V _{GS} =-10V, R _{GEN} =6Ω	-	7	-	ns
t _r	Turn-on Rise Time		-	3	-	ns
t _{d(off)}	Turn-off Delay Time		-	30	-	ns
t _f	Turn-off Fall Time		-	12	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	-4.2	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	-17	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} = 0V, I _S = -4.2A	-	-	-1.2	V
t _{rr}	Reverse Recovery Time	V _{GS} =0V, I _S =-4.2A, di/dt=100A/μs	-	11	-	ns
Q _{rr}	Reverse Recovery Charge		-	3.5	-	nC

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤2%

Typical Performance Characteristics

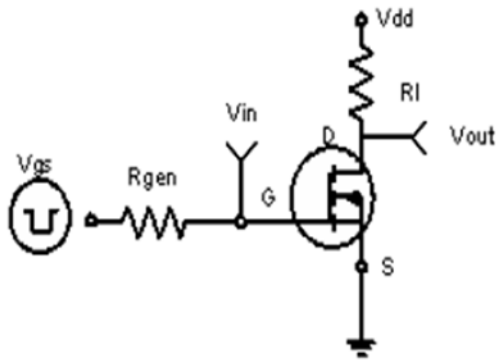


Figure1:Switching Test Circuit

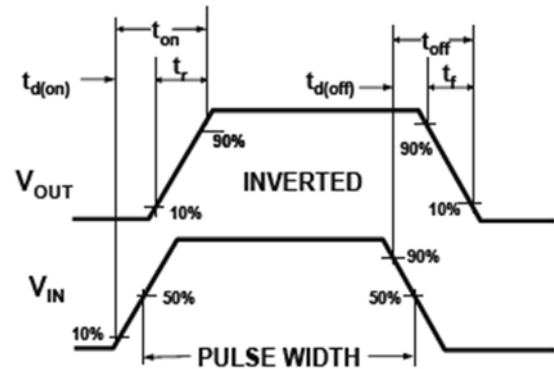
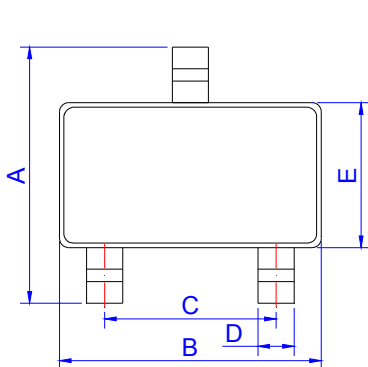
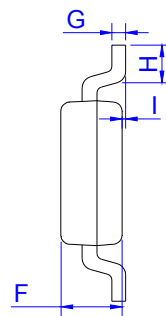


Figure2:Switching Waveforms

Package Mechanical Data

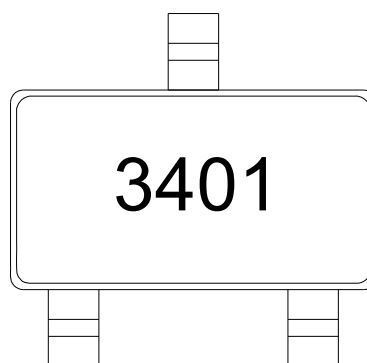


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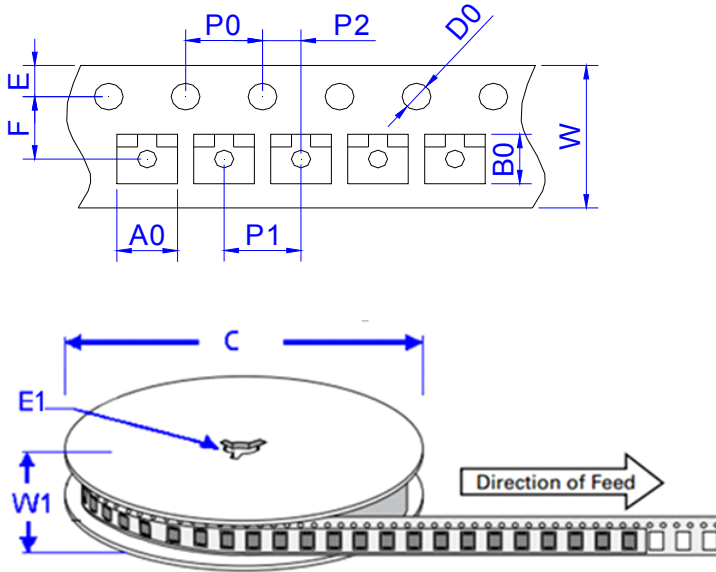
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.30	2.40	2.50	0.091	0.095	0.098
B	2.80	2.90	3.00	0.110	0.114	0.118
C	1.90 REF			0.075 REF		
D	0.35	0.40	0.45	0.014	0.016	0.018
E	1.20	1.30	1.40	0.047	0.051	0.055
F	0.90	1.00	1.10	0.035	0.039	0.043
G		0.10	0.15		0.004	0.006
H	0.20			0.008		
I	0		0.10	0		0.004

Marking



3401: Device Code

Package Information-SOT-23



Ref.	Dimensions	
	Millimeters	Inches
A0	3.15 ± 0.3	0.124 ± 0.012
B0	2.77 ± 0.3	0.109 ± 0.012
C	178	7.0
D0	1.50±0.1	0.059 ± 0.004
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.3±0.3	0.524± 0.012
F	3.5 ± 0.2	0.138 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	4.00 ± 0.2	0.157 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	8.00 ± 0.2	0.315 ± 0.008
W1	11.5±1.0	0.453 ± 0.039

Ordering Information-SOT-23

OUTLINE	PACKAGE TYPE	QUANTITY REEL	DESCRIPTION
TAPING	SOT-23	3,000pcs	7 inch reel pack

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