



Description

JMT N-channel MOSFET

Features

- $V_{DS}=100V$, $I_D=3A$
 $R_{DS(ON)}=110m\Omega$ @ $V_{GS} = 10V$
 $R_{DS(ON)}=160m\Omega$ @ $V_{GS} =4.5V$
- High Power and Current Handling Capability
- Lead Free Product is Acquired
- Surface Mount Package

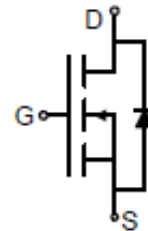
Application

- Battery Protection
- Load Switch
- Power Management

Package



SOT-23



Absolute Maximum Ratings (T_C=25°C unless otherwise specified)

Symbol	Parameter	Max.	Units
V _{DSS}	Drain-Source Voltage	100	V
V _{GSS}	Gate-Source Voltage	±20	V
I _D	Continuous Drain Current	T _C = 25°C	3
		T _C = 100°C	2.4
I _{DM}	Pulsed Drain Current ^{note1}	12	A
P _D	Power Dissipation	T _C = 25°C	1.2
R _{θJA}	Thermal Resistance, Junction to Ambient	104	°C/W
T _J , T _{STG}	Operating and Storage Temperature Range	-55 to +150	°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	100	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =100V, V _{GS} = 0V,	-	-	1	μA
I _{GSS}	Gate to Body Leakage Current	V _{DS} =0V, V _{GS} = ±20V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250μA	1.0	1.8	3.0	V
R _{DSON}	Static Drain-Source on-Resistance <small>note2</small>	V _{GS} =10V, I _D =3A	-	110	140	mΩ
		V _{GS} =4.5V, I _D =2A	-	160	300	
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =50V, V _{GS} = 0V, f = 1.0MHz	-	206	-	pF
C _{oss}	Output Capacitance		-	29	-	pF
C _{rss}	Reverse Transfer Capacitance		-	1.4	-	pF
Q _g	Total Gate Charge	V _{DS} =50V, I _D =3A, V _{GS} =10V	-	4.3	-	nC
Q _{gs}	Gate-Source Charge		-	1.5	-	nC
Q _{gd}	Gate-Drain("Miller") Charge		-	1.1	-	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DD} =50V, I _D =3A, R _{GEN} = 2Ω, V _{GS} =10V,	-	14.7	-	ns
t _r	Turn-on Rise Time		-	3.5	-	ns
t _{d(off)}	Turn-off Delay Time		-	20.9	-	ns
t _f	Turn-off Fall Time		-	2.7	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	3	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	12	A
t _{rr}	Reverse recovery time	I _S =3A, di/dt=100 A/μs	-	32	-	ns
Q _{rr}	Reverse recovery charge		-	39	-	nC

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

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

Typical Performance Characteristics

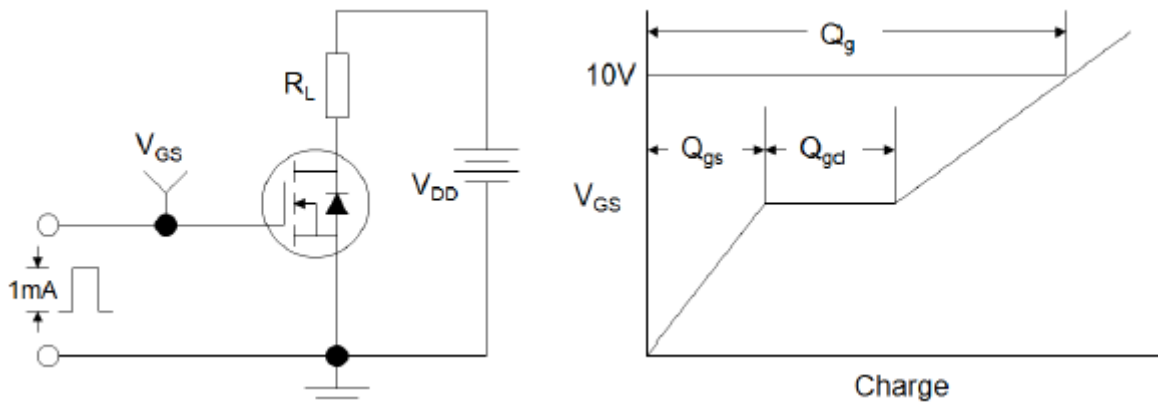


Figure1:Gate Charge Test Circuit & Waveform

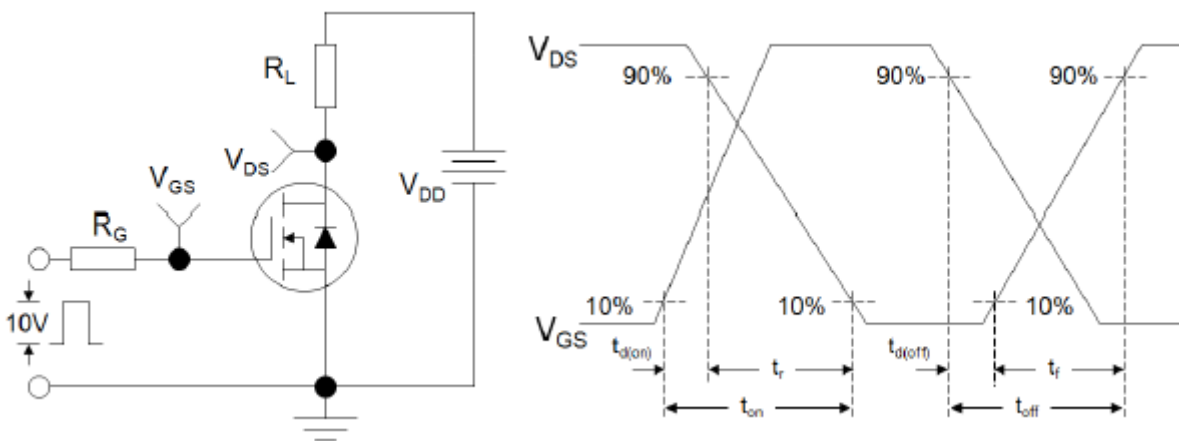


Figure 2: Resistive Switching Test Circuit & Waveforms

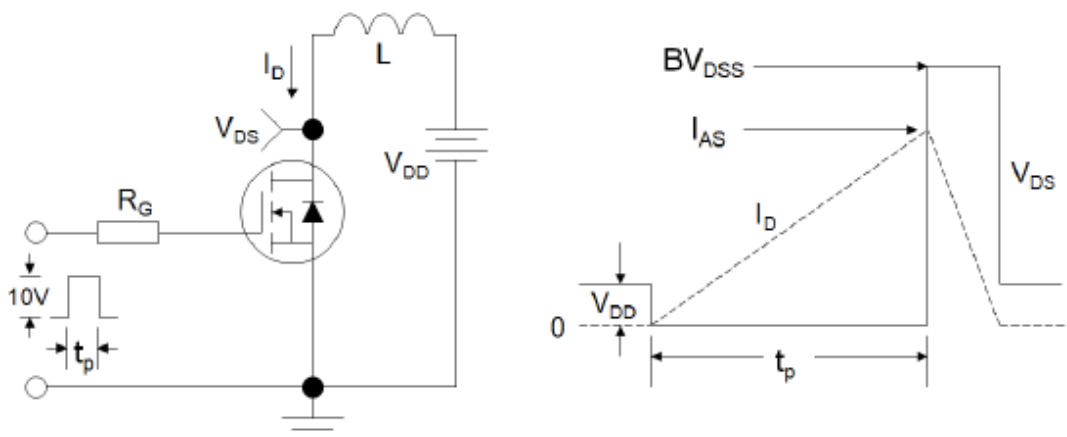


Figure 3:Unclamped Inductive Switching Test Circuit & Waveforms

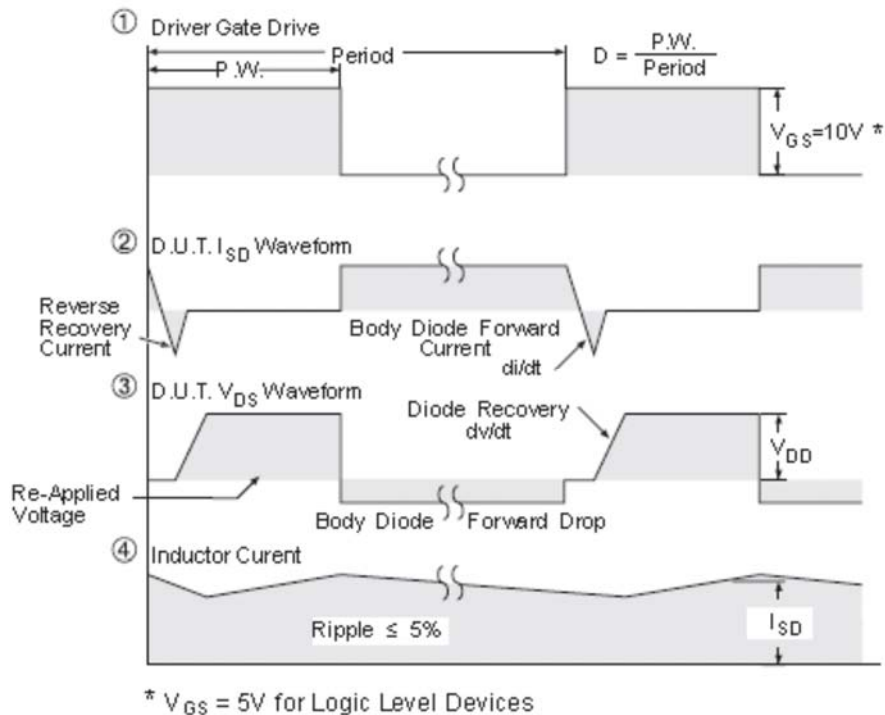
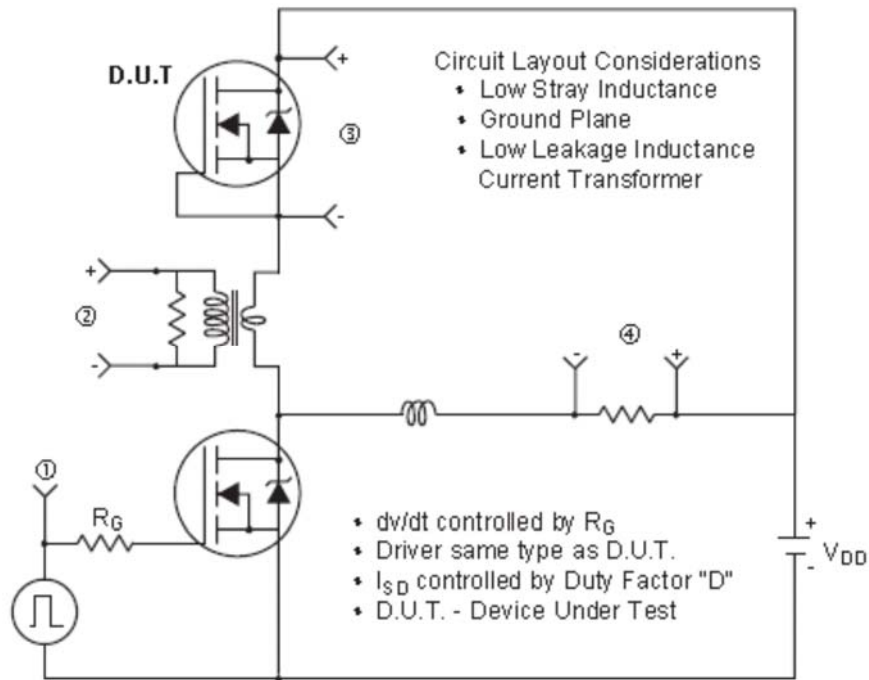
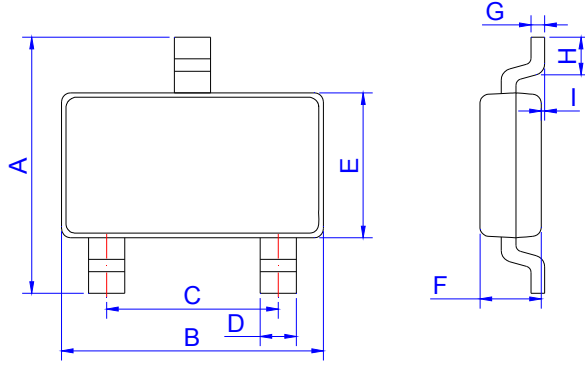


Figure 4: Peak Diode Recovery dv/dt Test Circuit & Waveforms (For N-channel)

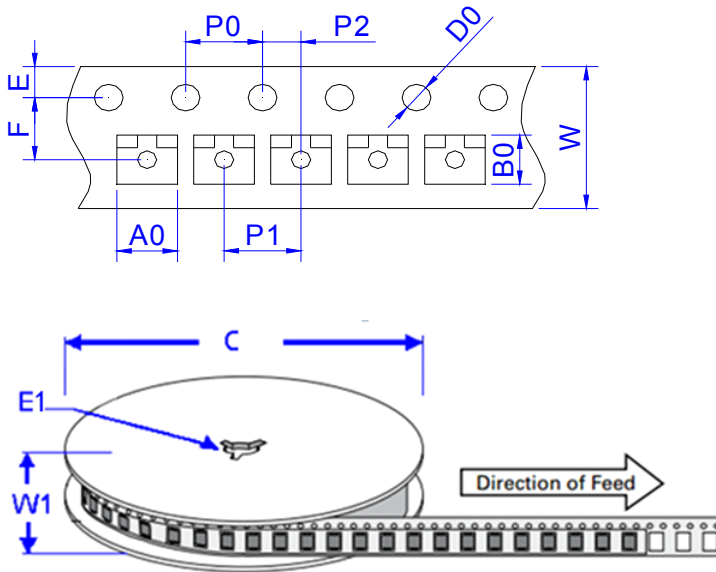
Package Mechanical Data



SOT-23

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

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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