



JMT(L.N.Y)3N10A

Description

JMT N-channel MOSFET

Features

- 100V,3A
- $R_{DS(ON)} = 180m\Omega$ (Typ.) @ $V_{GS} = 10V$
 $R_{DS(ON)} = 210m\Omega$ (Typ.) @ $V_{GS} = 4.5V$
- High Density Cell Design for Ultra Low $R_{DS(ON)}$
- Fully Characterized Avalanche Voltage and Current
- Excellent Package for Good Heat Dissipation

Application

- Uninterruptible Power Supply(UPS)
- Hard Switched and High Frequency Circuits
- Power Switching application

Package



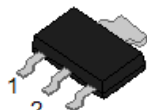
SOT-23

JMTL3N10A



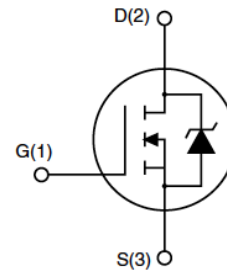
SOT89-3

JMTN3N10A



SOT-223

JMTY3N10A



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

Symbol	Parameter	Max.			Units	
		SOT-23	SOT89-3	SOT-223		
V _{DSS}	Drain-Source Voltage	100			V	
V _{GSS}	Gate-Source Voltage	±20			V	
I _D	Continuous Drain Current	T _C = 25°C	3		A	
		T _C = 100°C	2		A	
I _{DM}	Pulsed Drain Current ^{note1}	12			A	
P _D	Power Dissipation	T _A = 25°C	2.5	3.9	5	W
R _{θJA}	Thermal Resistance, Junction to Ambient		50	32	25	°C/W
T _J , T _{STG}	Operating and Storage Temperature Range	-55 to +150			°C	



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Electrical Characteristics ($T_C=25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	100	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=100V, V_{GS}=0V,$	-	-	1.0	μA
I_{GSS}	Gate to Body Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	2.1	3.0	V
$R_{DS(on)}$	Static Drain-Source on-Resistance <small>note2</small>	$V_{GS}=10V, I_D=2A$	-	180	310	m Ω
		$V_{GS}=4.5V, I_D=1A$	-	210	350	
g_{FS}	Forward Transconductance	$V_{DS}=10V, I_D=3A$	-	1.1	-	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS}=50V, V_{GS}=0V,$ $f=1.0MHz$	-	190	-	pF
C_{oss}	Output Capacitance		-	22	-	pF
C_{rss}	Reverse Transfer Capacitance		-	13	-	pF
Q_g	Total Gate Charge	$V_{DS}=50V, I_D=1A,$ $V_{GS}=10V$	-	5.2	-	nC
Q_{gs}	Gate-Source Charge		-	0.75	-	nC
Q_{gd}	Gate-Drain("Miller") Charge		-	1.4	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	$V_{DD}=50V, R_L=39\Omega,$ $R_G=1\Omega, V_{GS}=10V$	-	6	-	ns
t_r	Turn-on Rise Time		-	10	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	10	-	ns
t_f	Turn-off Fall Time		-	6	-	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
V_{SD}	Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=1A$	-	-	1.2	V

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

2. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$



Typical Performance Characteristics

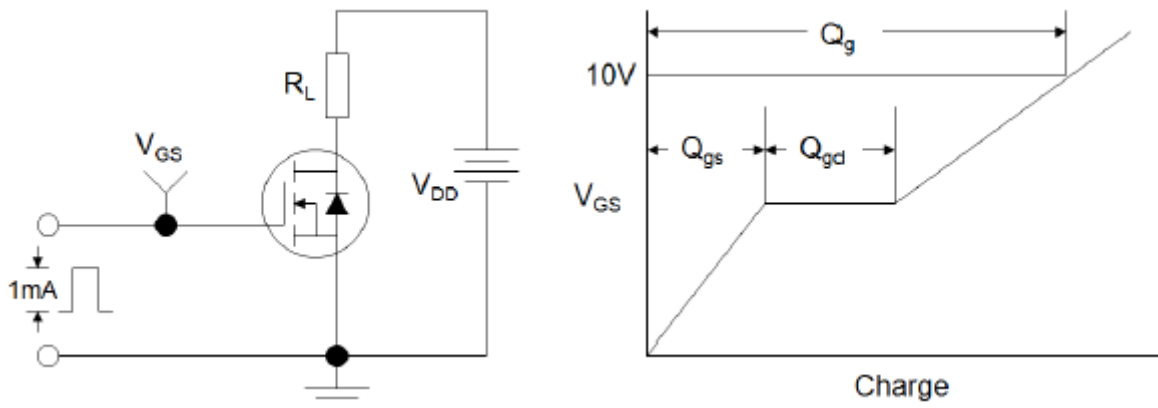


Figure1:Gate Charge Test Circuit & Waveform

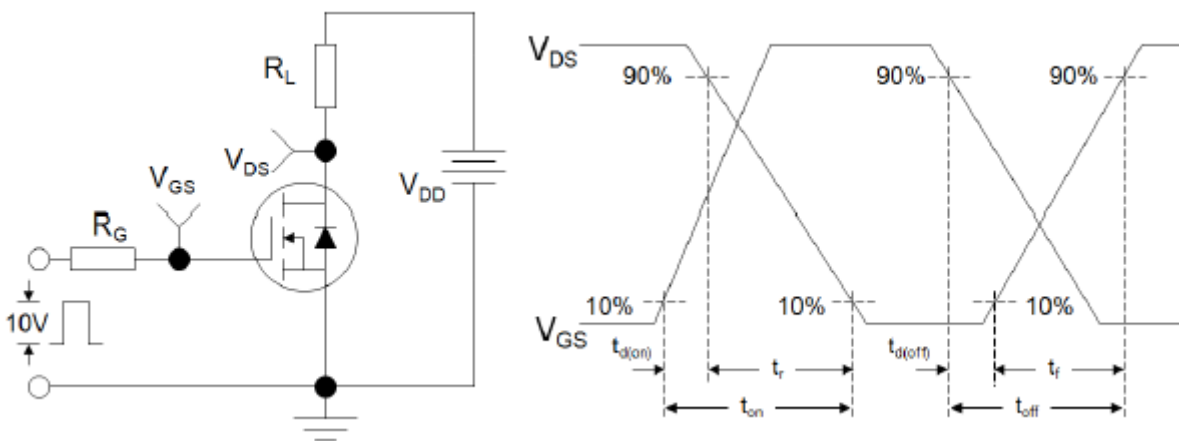


Figure 2: Resistive Switching Test Circuit & Waveforms

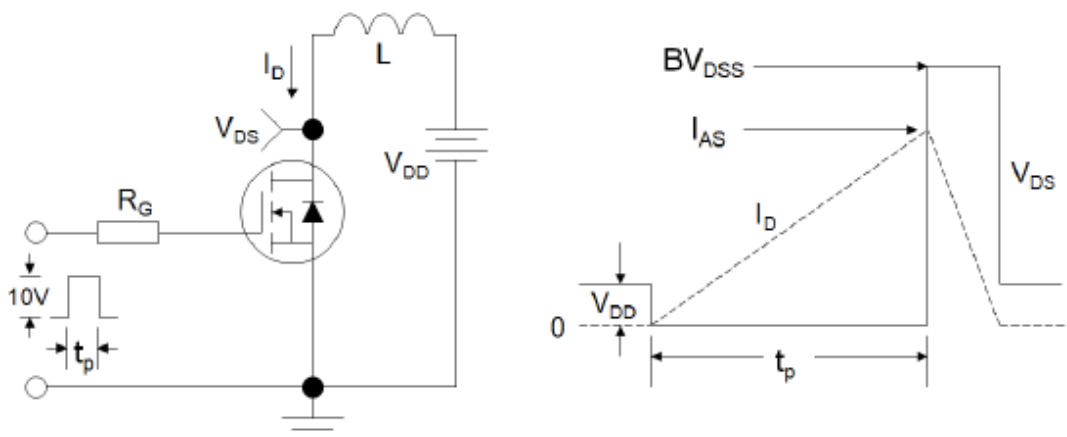


Figure 3:Unclamped Inductive Switching Test Circuit & Waveforms

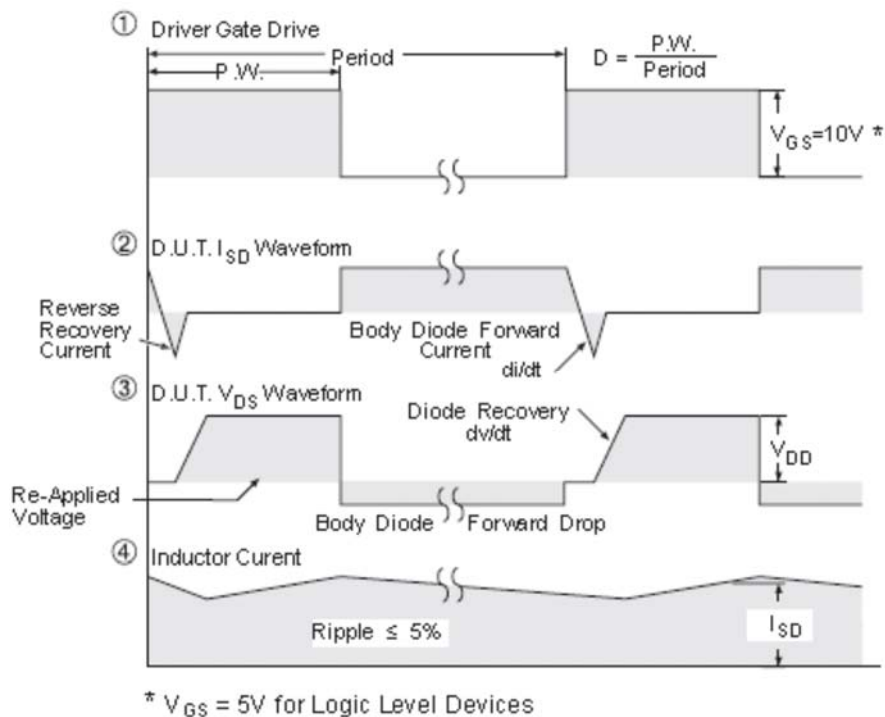
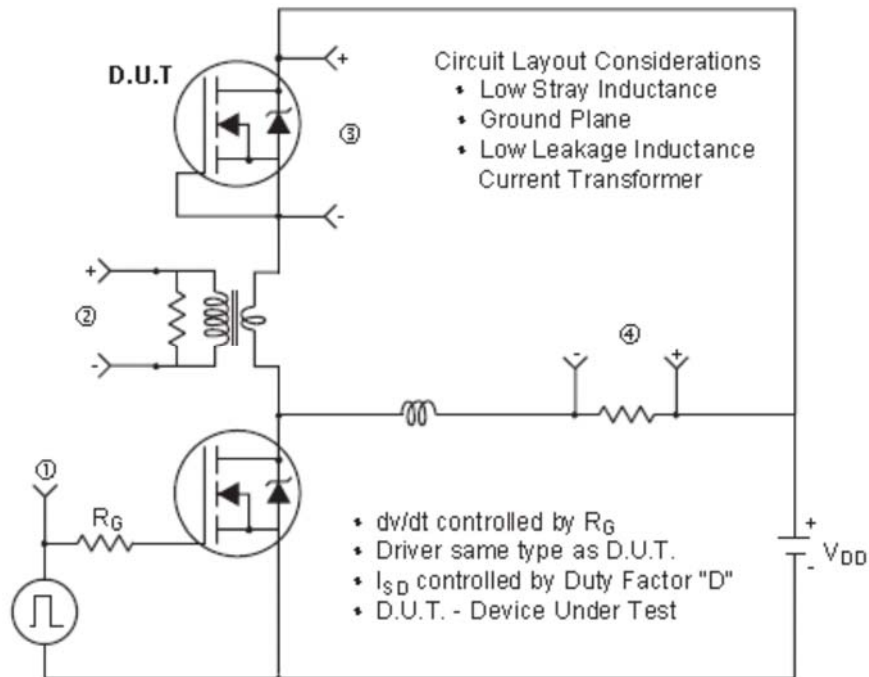
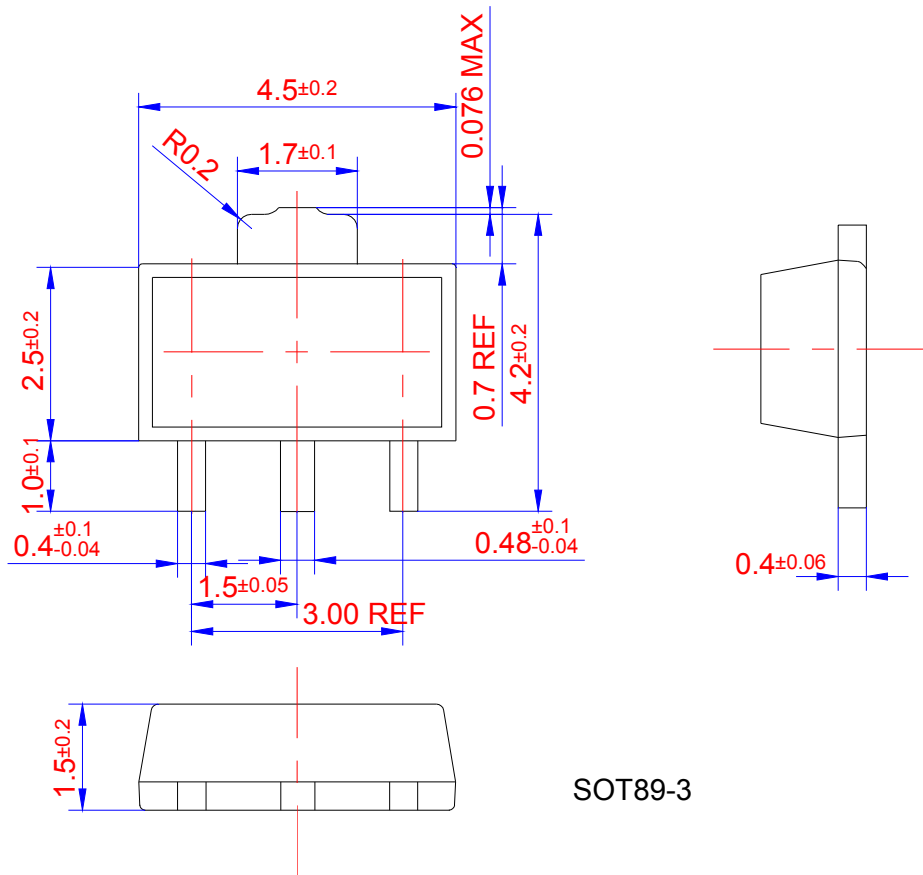


Figure 4: Peak Diode Recovery dv/dt Test Circuit & Waveforms (For N-channel)



Package Mechanical Data

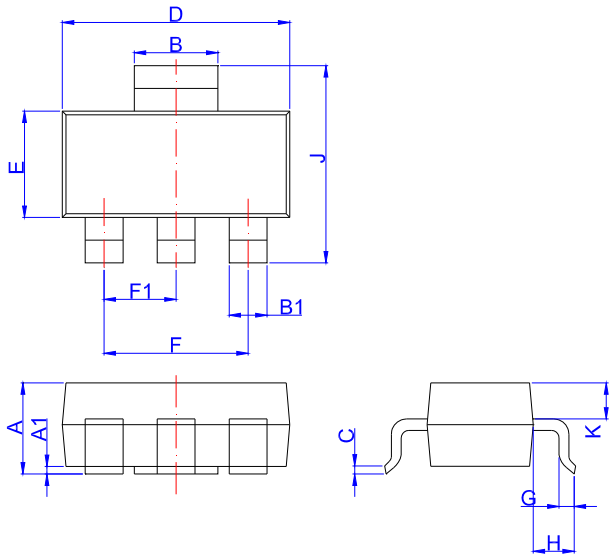


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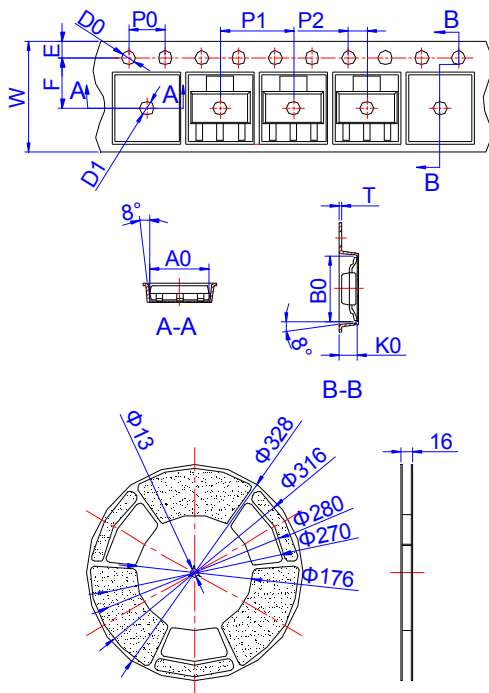
Package Mechanical Data



SOT-223

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	0.146
F		4.6			0.181	
F1		2.3			0.091	
G	0.7	0.9	1.1	0.028	0.035	0.043
H	1.5	1.75	2.0	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K	0.8	0.9	1.0	0.031	0.035	0.039

Reel Specification-SOT-223

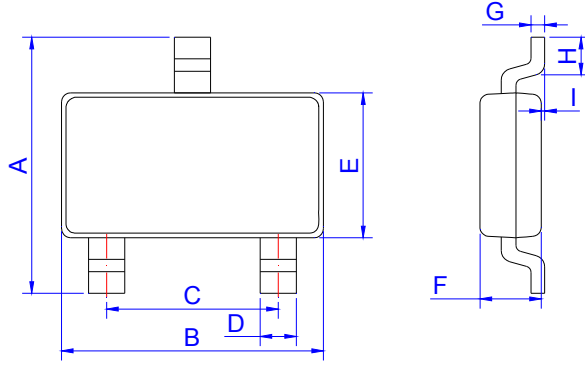


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
W	12.00		12.20	0.472		0.483
E	1.65	1.75	1.85	0.065	0.069	0.073
F	5.45	5.50	5.55	0.214	0.217	0.219
D0	1.50		1.60	0.059		0.063
D1	1.55		1.80	0.061		0.071
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	7.90	8.00	8.10	0.311	0.315	0.319
P2	1.95	2.00	2.05	0.077	0.079	0.081
10P0	39.80	40.00	40.20	1.567	1.575	1.583
A0	6.73	6.83	6.93	0.265	0.269	0.273
B0	7.30	7.40	7.50	0.287	0.291	0.295
K0	1.78	1.88	1.98	0.070	0.074	0.078
T	0.25	0.30	0.35	0.010	0.012	0.014

OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TAPING	4,000	40,000	13inch



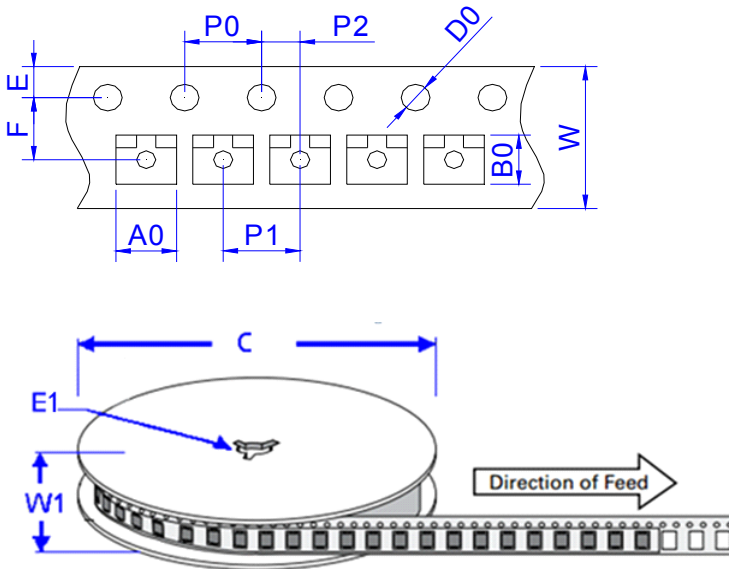
Package Mechanical Data



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



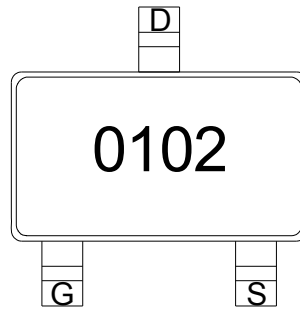
Ref.	Dimensions	
	Millimeters	Inches
A0	3.15 ± 0.3	0.124 ± 0.012
B0	2.77 ± 0.3	0.109 ± 0.012
C	178	7.0
D0	1.50±0.1	0.059 ± 0.004
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.3±0.3	0.524± 0.012
F	3.5 ± 0.2	0.138 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	4.00 ± 0.2	0.157 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	8.00 ± 0.2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



Marking




0102: Device Code

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