NM3400

5.8A, 30V N-CHANNEL MOSFET

SOT-23

Features

• $R_{DS(ON)} \leq 30m\Omega$ @ V_{GS}=10V, I_D=4A

• $R_{DS(ON)} \leq 35m\Omega$ @ V_{GS}=4.5, I_D=4A

• $R_{DS(ON)} \leq 55m\Omega$ @ V_{GS}=2.5, I_D=3A

• High Speed Switching

• High Density Cell Design For Low $R_{DS(ON)}$

• Trench Power LV MOSFET Technology

Features

• Load Switch

• PWM Application

• Power Management

2.Drain

1.Gate
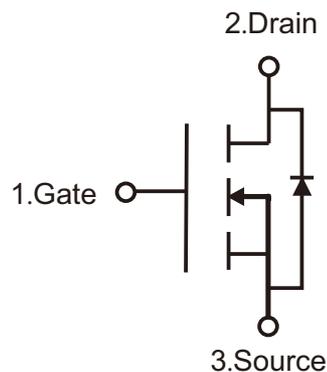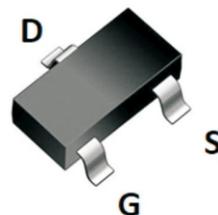
3.Source

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

Parameter	Symbols	Ratings	Units
Drain-Source Voltage	V_{DSS}	30	V
Gate-Source Voltage	V_{GSS}	±20	V
Continuous Drain Current	I_D	5.8	A
Pulsed Drain Current(A)	I_{DM}	23	A
Power Dissipation	P_D	1.2	W
Thermal Resistance,Junction to Case(B)	$R_{\theta JA}$	100	°CW
Operation Junction Temperature and Storage Temperature	$T_{j,}T_{stg}$	-55 ~ +150	°C

Electrical Characteristics (TA=25°C, unless otherwise specified)

| Parameter		Symbols	Test Conditions	Min	Typ	Max	Unit
Off Characteristics							
Drain-Source Breakdown Voltage		BV_{DSS}	$V_{GS} = 0V, I_D = 250uA$	30	32		V
Drain-Source Leakage Current		I_{DSS}	$V_{DS} = 30V, V_{GS} = 0V$			1	uA
Gate- Source Leakage Current	Forward	I_{GSS}	$V_{GS} = 20V, V_{DS} = 0V$			100	nA
	Reverse		$V_{GS} = -20V, V_{DS} = 0V$			-100	
On Characteristics							
Gate Threshold Voltage		$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250uA$	0.6	0.9	1.5	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 4A$		21	33	$m\Omega$
			$V_{GS} = 4.5V, I_D = 4A$		23	35	$m\Omega$
			$V_{GS} = 2.5V, I_D = 3A$		38	55	$m\Omega$
Drain-Source Diode Forward Voltage		V_{SD}	$I_S = 5.8A, V_{GS} = 0V$			1.2	V
DYNAMIC CHARACTERISTICS							
Input Capacitance		C_{iss}	$V_{DS} = 15V,$		630		pF
Output Capacitance		C_{oss}	$V_{GS} = 0V,$		55		pF
Reverse Transfer Capacitance		C_{rss}	$f = 1.0MHz$		71		pF
Switching Characteristics							
Total Gate Charge		Q_g	$V_{DS} = 15V, V_{GS} = 10V,$ $I_D = 5.8A$		17.5		nC
Gate-Source Charge		Q_{gs}			2.1		nC
Gate-Drain Charge		Q_{gd}			2		nC
Turn-On Delay Time		$t_{D(on)}$	$V_{DS} = 15V, V_{GS} = 10V,$ $I_D = 5.8A, R_{GEN} = 3\Omega$		4.4		ns
Turn-On Rise Time		t_r			28.2		ns
Turn-Off Delay Time		$t_{D(off)}$			16.2		ns
Turn-Off Fall Time		t_f			26		ns

Notes:
A. Pulse Test: Pulse Width≤300us, Duty cycle ≤2%.
B. RθJA is the sum of the junction-to-case and case-to-ambient thermal resistance, where the case thermal reference is defined as the soldermounting surface of the drain pins. RθJC is guaranteed by design, while RθJA is determined by the board design. The maximum rating presentedhere is based on mounting on a 1 in 2 pad of 2oz copper.

## Test Circuits and waveforms
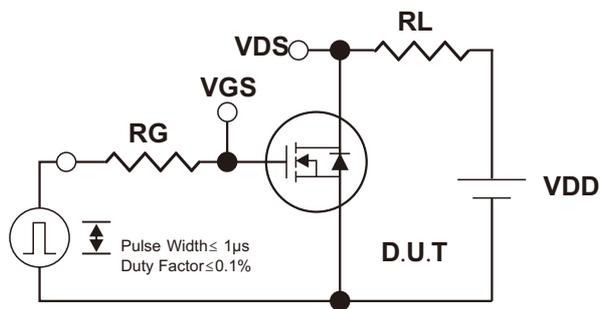
**Switching Test Circuit**
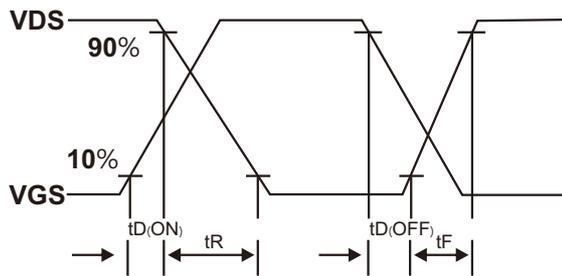
Switching Waveforms
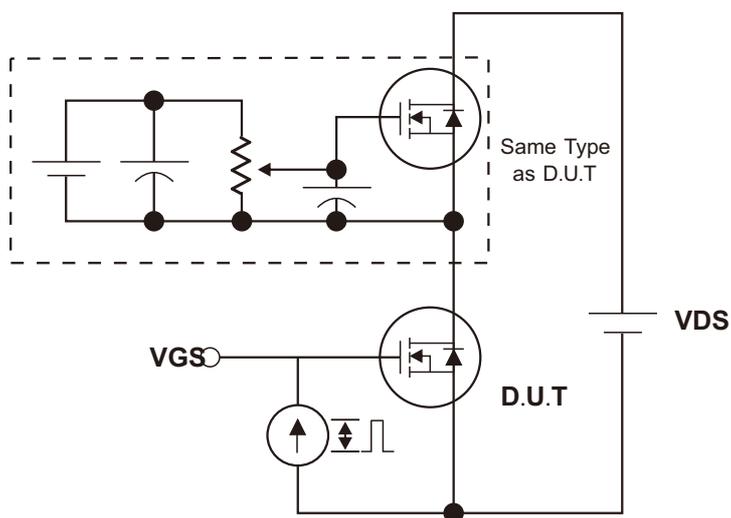
Gate Charge Test Circuit
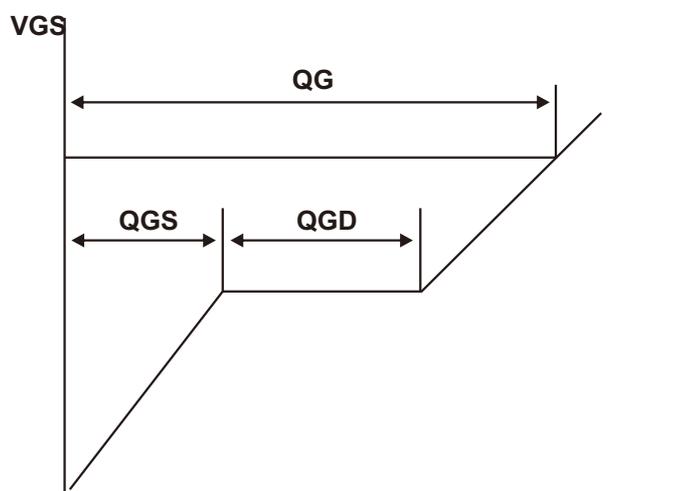
Gate Charge Waveform
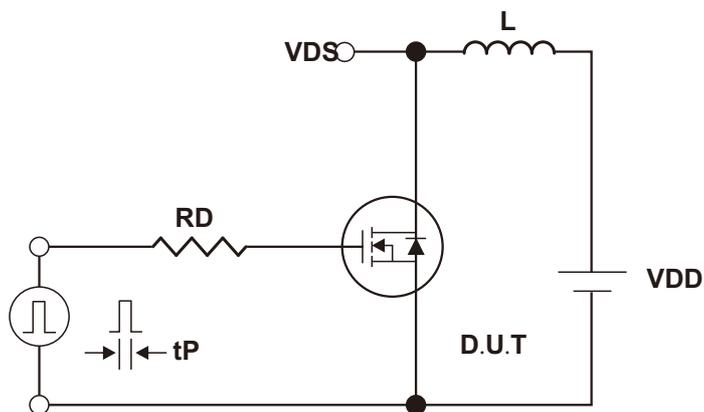
Unclamped Inductive Switching Test Circuit
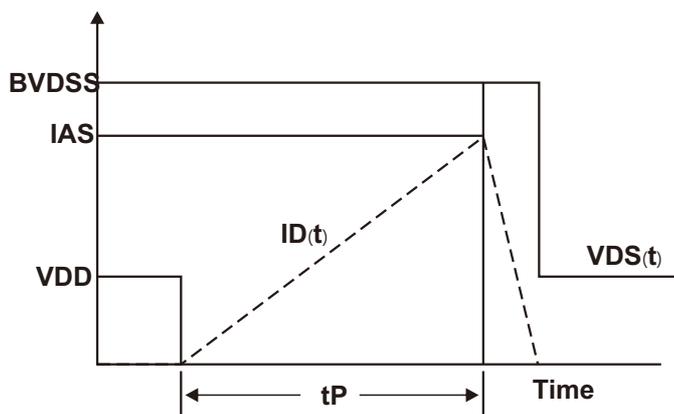
Unclamped Inductive Switching Waveforms

## Typical Characteristics

Fig.1 Output Characteristics

$V_{GS}=10V,3V,4.5V$
$V_{GS}=2V$

IDrain-to-Source - I_{DS} (A)

Drain-Source Voltage - V_{DS} (V)
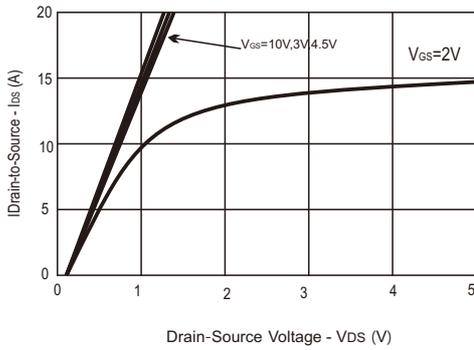
Fig.2 Typical Transfer Characteristics

$V_{DS}=5V$
$T_J=125℃$
$T_J=25℃$

Drain-to-Source - I_{DS} (A)

Gate-Source Voltage - V_{GS} (V)
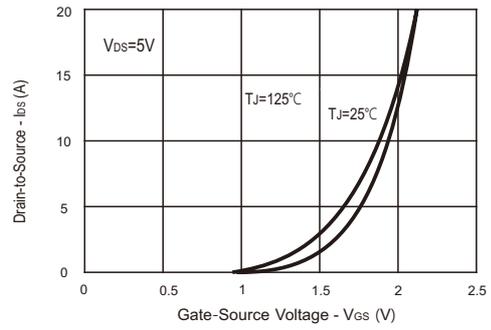
Fig.3 Drain-Source On-Resistance vs. Drain Current

VGS=4.5V
VGS=10V

Drain-Source On-Resistance - $R_{DS(ON)}$

Drain-Source Current - I_{DS} (A)
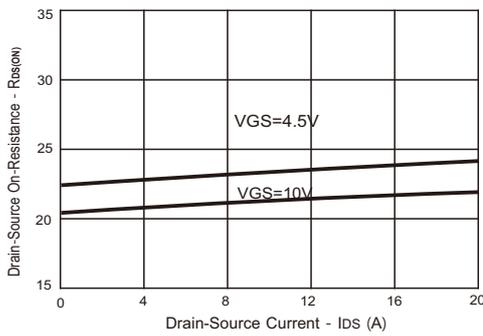
Fig.4 On-Resistance vs.Junction temperature

$V_{GS}=10V$
$I_D=5.8A$

$V_{GS}=4.5V$
$I_D=3.5A$

Normalized on Resistance - $R_{DS(on)}$

Junction Temperature - TJ (°C)
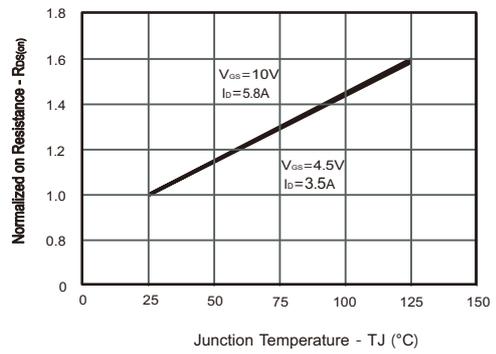
Fig.5 Gate-Ccharge Characteristics

VGS=15V ID=5.8A

Gate-Source Voltage - VGS (V)

Qg(nC)
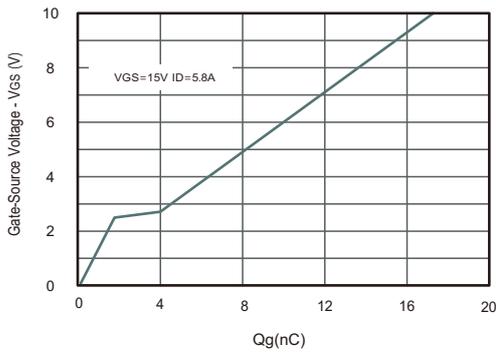
Fig.6 Capacitance vs. Drain-Source Voltage

$V_{GS}=0V$
f=1MHz

Ciss
Coss
Crss

Capacitance - C (pF)

Drain-Source Voltage - V_{DS} (V)
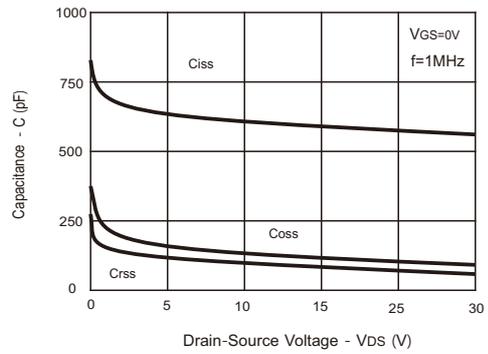
SOT-23 Package Outline Dimensions

SOT-23 mechanical data

UNIT		A	C	D	E	HE	e	M	L	L1	a	∠
mm	max	1.1	0.20	1.4	3.0	2.6	0.6	1.95	0.55 (ref)	0.36 (ref)	0.15	12°
	min	0.9	0.08	1.2	2.8	2.2	0.35	1.7			0.0	
mil	max	43	7.9	55	118	102	24	77	22 (ref)	14 (ref)	6	
	min	35	3.1	47	110	87	13	67			0.0	
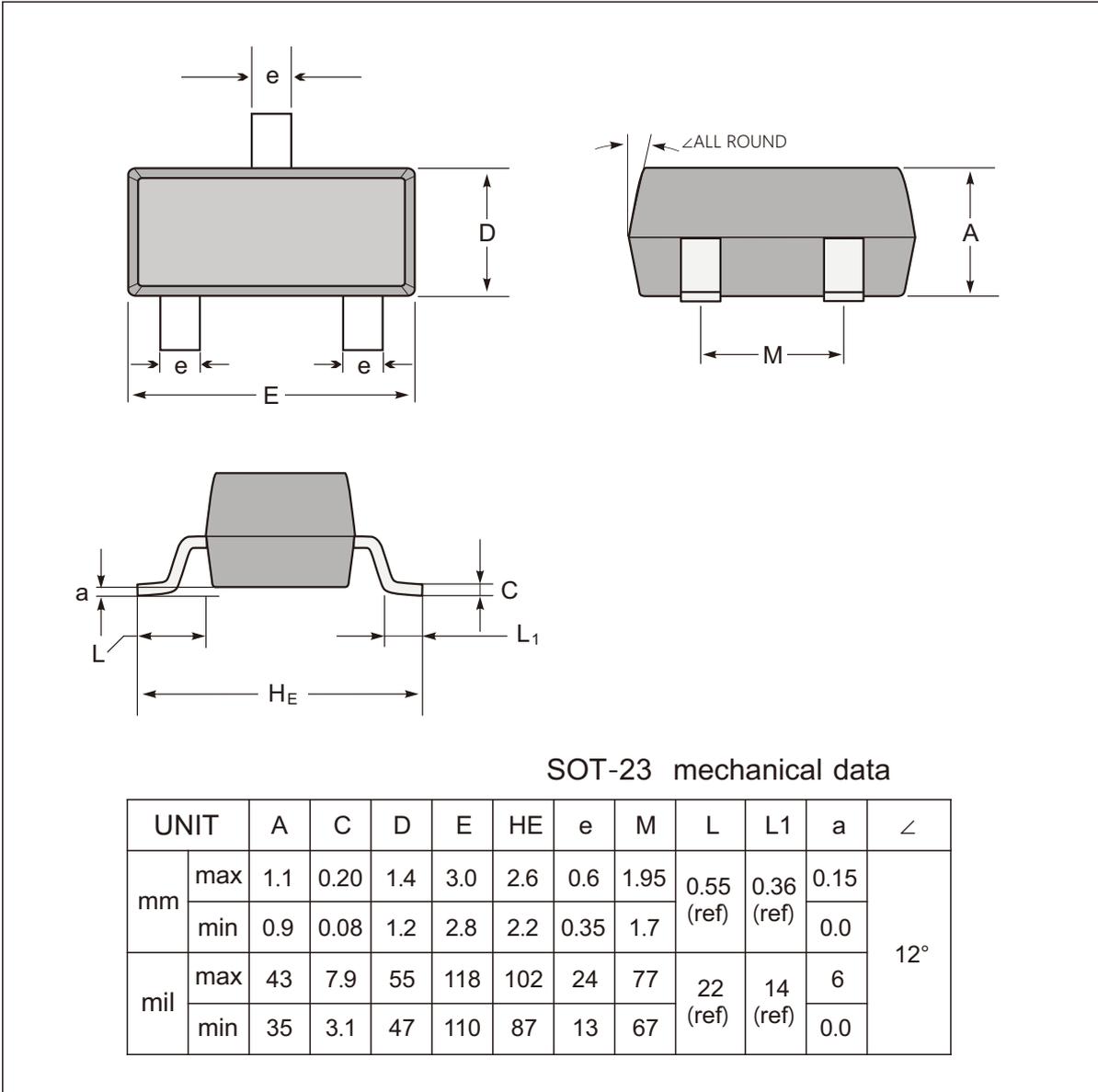
The recommended mounting pad size
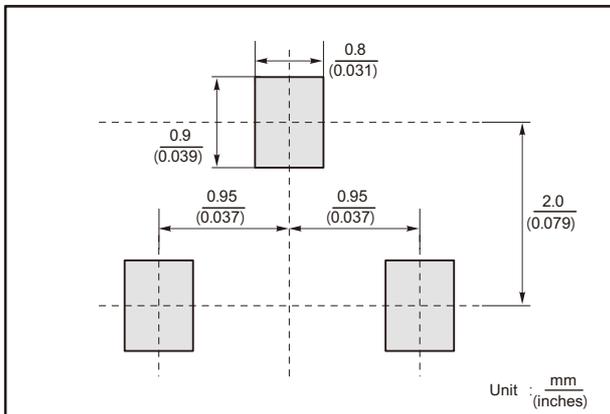
Marking

Type number	Marking code
NM3400	3400

Important Notice and Disclaimer

Jingdao Microelectronics reserves the right to make changes to this document and its products and specifications at any without notice.

Customers should obtain and confirm the latest product information and specifications before final, purchase or use.

Jingdao Microelectronics makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, not does Jingdao Microelectronics assume any liability for application assistance or customer product design.

Jingdao Microelectronics does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.

No license is granted by implication or otherwise under any intellectual property rights of Jingdao Microelectronics.

Jingdao Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of Jingdao Microelectronics.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for MOSFET *category:*

Click to view products by Jingdao *manufacturer:*

Other Similar products are found below :

614233C 648584F MCH3443-TL-E MCH6422-TL-E FDPF9N50NZ NTNS3A92PZT5G IRFD120 IRFF430 JANTX2N5237 2N7000 AOD464 2SK2267(Q) 2SK2545(Q,T) 405094E 423220D MIC4420CM-TR VN1206L 614234A 715780A SSM6J414TU,LF(T 751625C IPS70R2K0CEAKMA1 BSF024N03LT3 G PSMN4R2-30MLD TK31J60W5,S1VQ(O 2SK2614(TE16L1,Q) DMN1017UCP3-7 EFC2J004NUZTDG FCAB21350L1 P85W28HP2F-7071 DMN1053UCP4-7 NTE2384 NTE2969 NTE6400A DMC2700UDMQ-7 DMN2080UCB4-7 DMN61D9UWQ-13 US6M2GTR DMN31D5UDJ-7 SSM6P54TU,LF DMP22D4UFO-7B IPS60R3K4CEAKMA1 DMN1006UCA6-7 DMN16M9UCA6-7 STF5N65M6 IRF40H233XTMA1 IPSA70R950CEAKMA1 IPSA70R2K0CEAKMA1 STU5N65M6 C3M0021120D