

# DN2328

## DN2328 N-Channel Enhancement MOSFET

### General description

N-Channel Enhancement Mode Field Effect Transistor

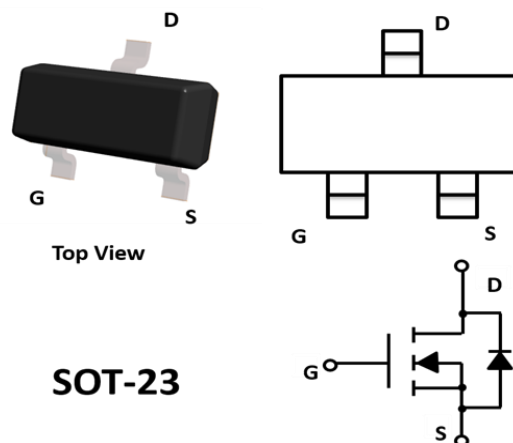
### FEATURES

- $V_{DS}=100V$
- $I_D=2A$
- $R_{DS(ON)}$ ( at  $V_{GS}=10V$ ) $<310\ m\Omega$
- $R_{DS(ON)}$ ( at  $V_{GS}=4.5V$ ) $<350\ m\Omega$
- Trench Power MV MOSFET technology
- Excellent package for heat dissipation
- High density cell design for low  $R_{DS(ON)}$

### APPLICATIONS

- DC-DC Converters
- Power management functions

**Device Marking:SA34**



**SOT-23**

### Absolute Maximum Ratings

Parameter	Symbol	Limit	Unit
Drain-source Voltage	$V_{DS}$	100	V
Gate-source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current	$I_D$	$T_A=25^\circ C$	2.0
		$T_A=70^\circ C$	1.6
Pulsed Drain Current <sup>A</sup>	$I_{DM}$	8	A
Total Power Dissipation @ $T_A=25^\circ C$	$P_D$	1.2	W
Thermal Resistance Junction-to-Ambient <sup>B</sup>	$R_{\theta JA}$	105	$^\circ C/W$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-55~+150	$^\circ C$

# DN2328

## Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Units
<b>Static Parameter</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V, I_D=250\mu A$	100			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=100V, V_{GS}=0V$			1	$\mu A$
Gate-Body Leakage Current	$I_{GSS1}$	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 100$	nA
	$I_{GSS2}$	$V_{GS}=\pm 10V, V_{DS}=0V$			$\pm 50$	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.1	1.8	3.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=2.0A$		240	310	m $\Omega$
		$V_{GS}=4.5V, I_D=2.0A$		250	350	
Diode Forward Voltage	$V_{SD}$	$I_S=2A, V_{GS}=0V$		0.8	1.2	V
Maximum Body-Diode Continuous Current	$I_S$				2.0	A
<b>Dynamic Parameters</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=50V, V_{GS}=0V, f=1MHz$		330		pF
Output Capacitance	$C_{oss}$			88		
Reverse Transfer Capacitance	$C_{rss}$			17		
<b>Switching Parameters</b>						
Total Gate Charge	$Q_g$	$V_{GS}=10V, V_{DS}=50V, I_D=2.0A$		5.3		nC
Gate-Source Charge	$Q_{gs}$			1.4		
Gate-Drain Charge	$Q_{gd}$			1.8		
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DD}=50V,$ $I_D=1.3A, R_L=39\Omega$ $R_{GEN}=1\Omega$		14		ns
Turn-on Rise Time	$t_r$			54		
Turn-off Delay Time	$t_{D(off)}$			18		
Turn-off fall Time	$t_f$			11		

Note :

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

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch



# DN2328

## Typical Characteristics

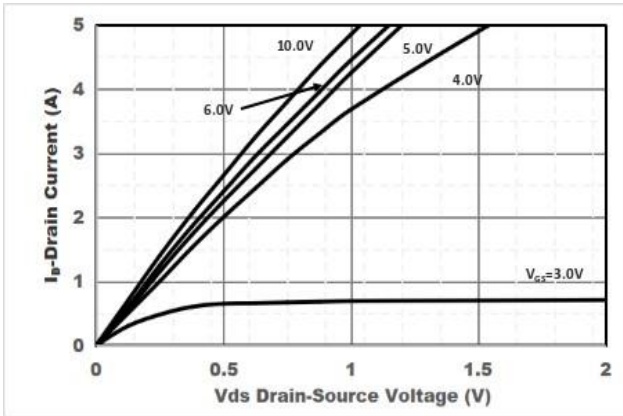


Figure1. Output Characteristics

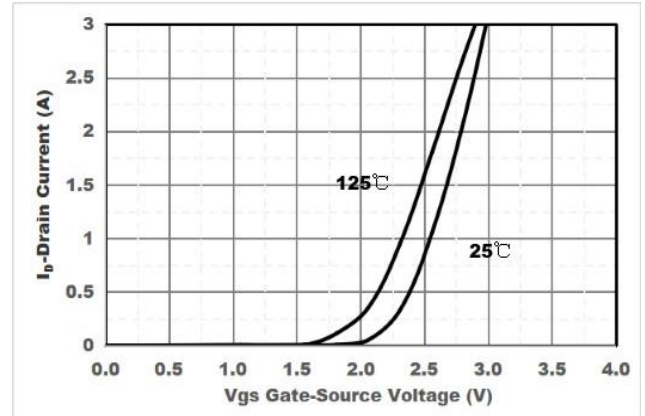


Figure2. Transfer Characteristics

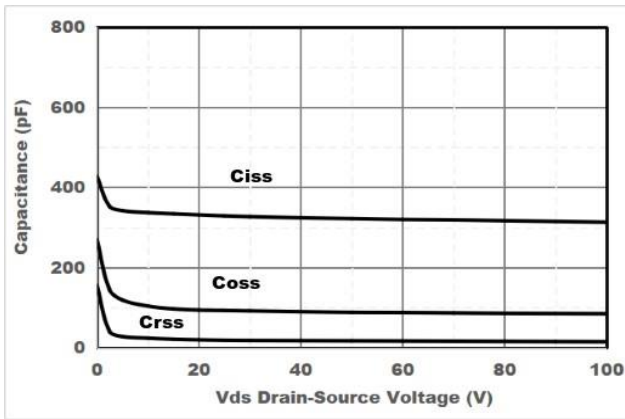


Figure3. Capacitance Characteristics

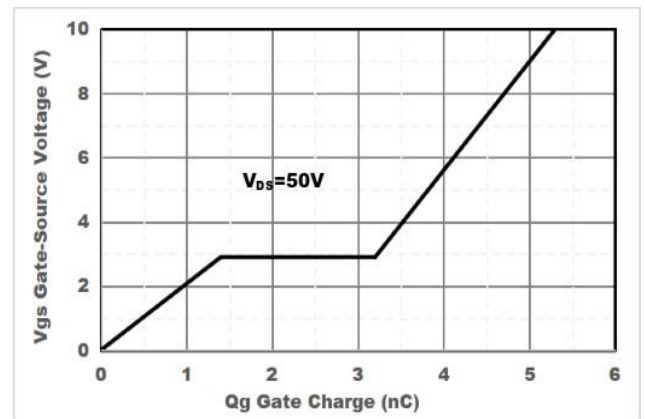


Figure4. Gate Charge

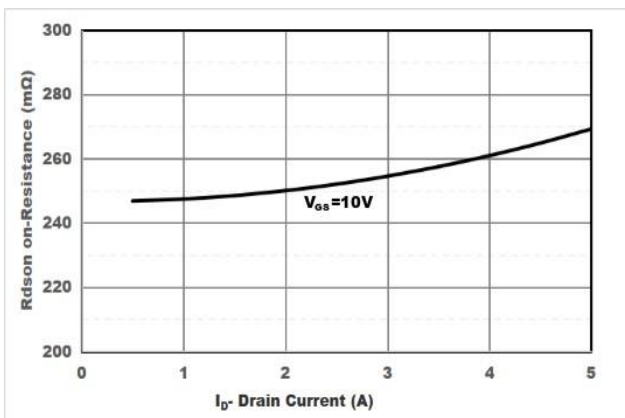


Figure5. Drain-Source on Resistance

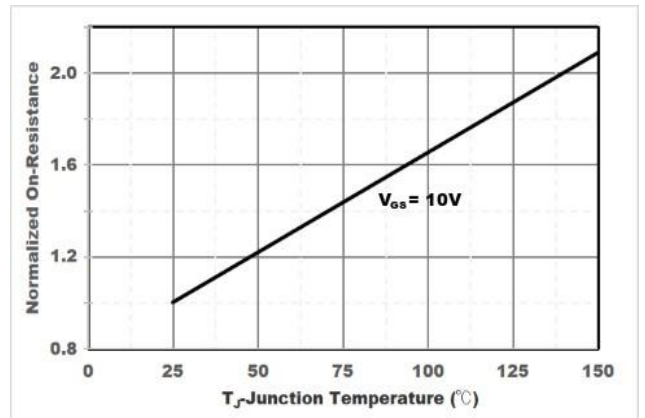


Figure6. Drain-Source on Resistance



# DN2328

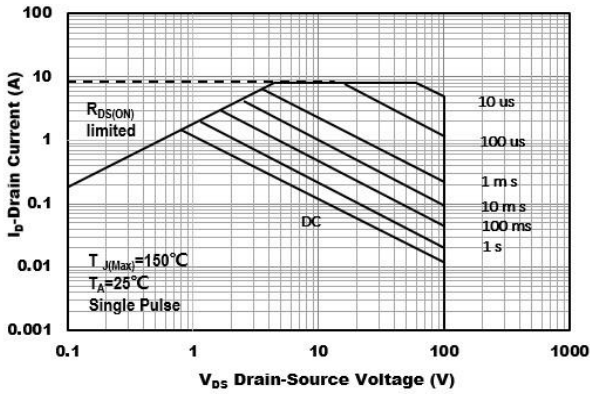


Figure7. Safe Operation Area

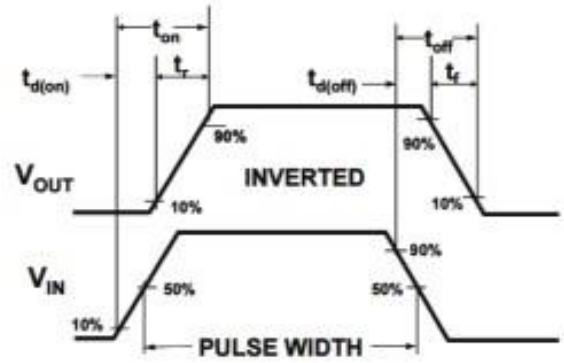
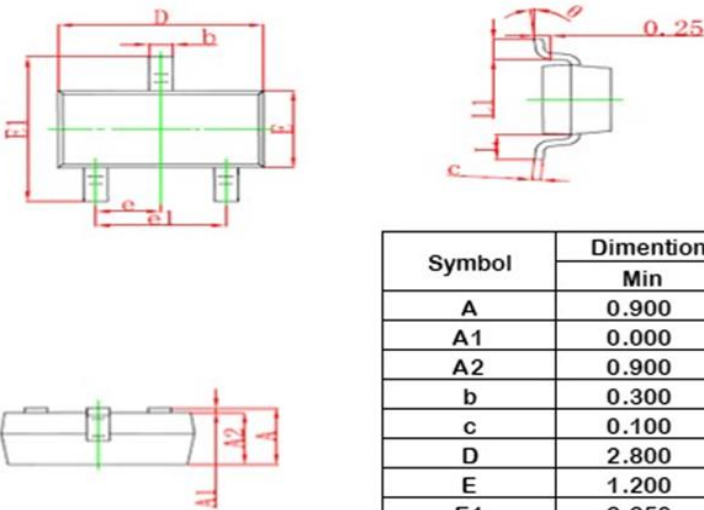


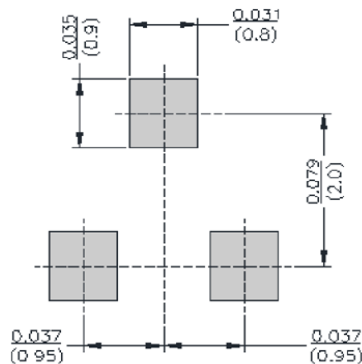
Figure8. Switching wave

## SOT-23 Package information



Symbol	Dimentions in Millimeter		Dimentions in Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950Type		0.037Type	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.220REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

## SOT-23 Suggested Pad Layout



## **Important Notice and Disclaimer**

DOESHARE has used reasonable care in preparing the information included in this document, but DOESHARE does not warrant that such information is error free. DOESHARE assumes no liability whatsoever for any damages incurred by you resulting from errors in or omissions from the information included herein.

DOESHARE no warranty, representation or guarantee regarding the documents, circuits and products specification, DOESHARE reservation rights to make changes for any documents, products, circuits and specifications at any time without notice.

Purchasers are solely responsible for the choice, selection and use of the DOESHARE products and services described herein, and DOESHARE assumes no liability whatsoever relating to the choice, selection or use of the products and services described herein.

No license, express or implied, by implication or otherwise under any intellectual property rights of DOESHARE.

Resale of DOESHARE products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by DOESHARE for the DOESHARE product or service described herein and shall not create or extend in any manner whatsoever, any liability of DOESHARE.