

## Descriptions

This 100V 4A N-Channel MOSFET in a SOT-89 Plastic Package.

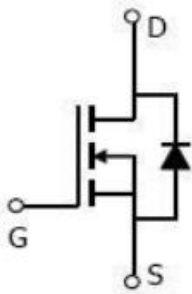
## Features

- $V_{DS}$  (V) = 100V
- $I_D$  = 4A ( $V_{GS}$  = 10V)
- $R_{DS(ON)}$  < 115m $\Omega$  ( $V_{GS}$  = 10V)
- $R_{DS(ON)}$  < 150m $\Omega$  ( $V_{GS}$  = 4.5V)
- Halogen-free Product.

## Applications

This device is suitable for use as a load switch or in PWM applications.

## Equivalent Circuit



## Pinning



PIN1 : G

PIN 2: D

PIN 3 : S

## Marking

See Marking Instructions.

**Absolute Maximum Ratings(Ta=25°C)**

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		$V_{DS}$	100	V
Continuous Drain Current		$I_D$	4	A
Pulsed Drain Current		$I_{DM}$	16	A
Gate-Source Voltage		$V_{GS}$	$\pm 20$	V
Total Power Dissipation		$P_D$	2.0	W
Operating and Storage Junction Temperature Range		$T_J, T_{STG}$	-55 to 150	°C
Maximum Junction-to-Ambient	$t \leq 10s$	$R_{\theta JA}$	62.5	°C/W
Maximum Junction-to-Ambient	Steady-State		87	°C/W
Maximum Junction-to-Lead	Steady-State		55.5	°C/W

**Electrical Characteristics(Ta=25°C)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
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	$\mu A$
		$V_{DS}=100V$ $V_{GS}=0V$ $T_J=55^\circ C$			5	$\mu A$
Gate-Body Leakage.	$I_{GSS}$	$V_{GS}=\pm 20V$ $V_{DS}=0V$			$\pm 0.1$	$\mu A$
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	1.2	1.6	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)(1)}$	$V_{GS}=10V$ $I_D=1A$		107	115	m $\Omega$
	$R_{DS(on)(2)}$	$V_{GS}=4.5V$ $I_D=1A$		140	150	
Drain-Source Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V$ $I_S=1A$			1.2	V

## Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Capacitance	$C_{iss}$	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$		190		pF
Output Capacitance	$C_{oss}$			155		
Reverse Transfer Capacitance	$C_{rss}$			28		
Gate resistance	$R_g$	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		0.8		$\Omega$
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V,$ $I_D=4A$		3.8		nC
Total Gate Charge	$Q_{g(4.5V)}$					
Gate Source Charge	$Q_{gs}$					
Gate Drain Charge	$Q_{gd}$					
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $R_L=25\Omega$ $V_{DS}=50V$ $R_{GEN}=3\Omega$		5		ns
Turn-On Rise Time	$t_r$					
Turn-Off Delay Time	$t_{d(off)}$					
Turn-Off Fall Time	$t_f$					

Electrical Characteristic Curve

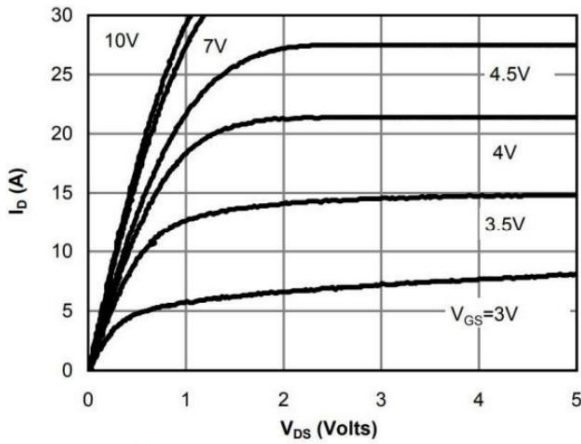


Fig 1: On-Region Characteristics

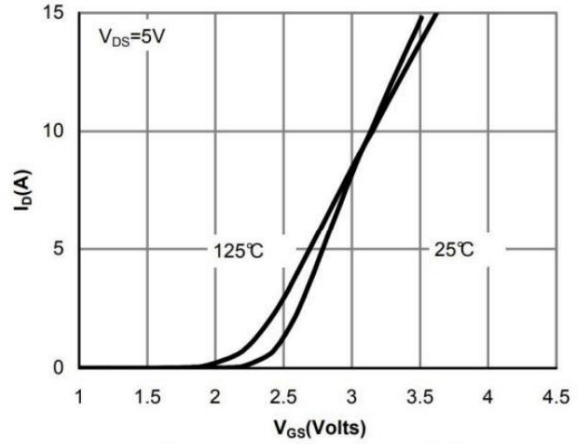


Figure 2: Transfer Characteristics

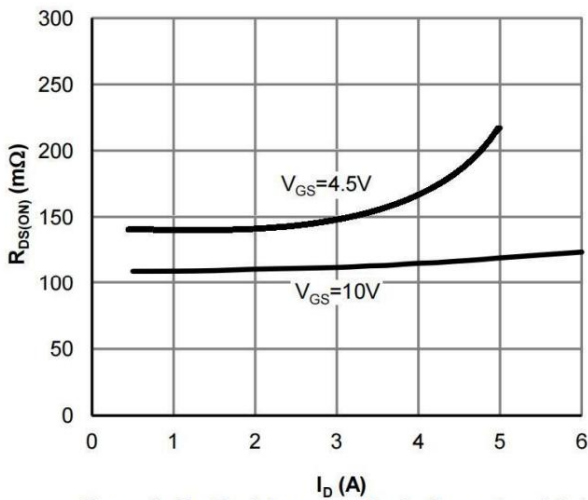


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

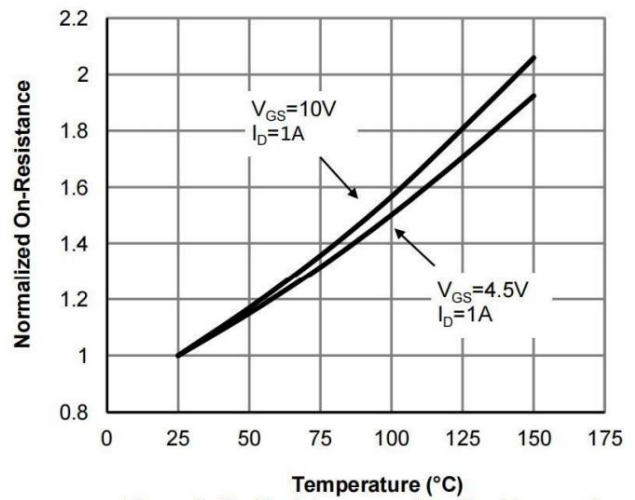


Figure 4: On-Resistance vs. Junction Temperature

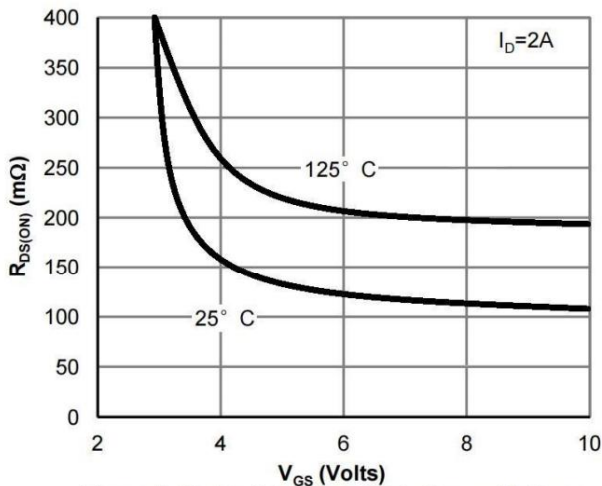


Figure 5: On-Resistance vs. Gate-Source Voltage

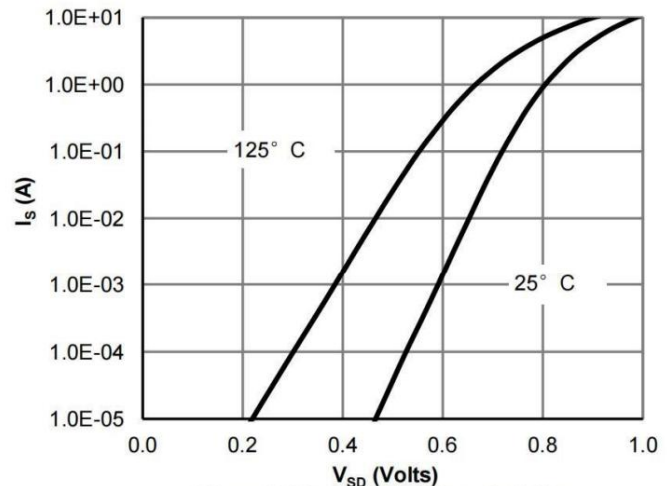


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

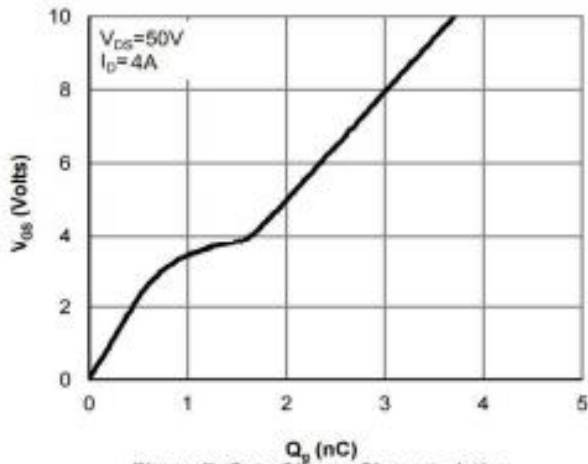


Figure 7: Gate-Charge Characteristics

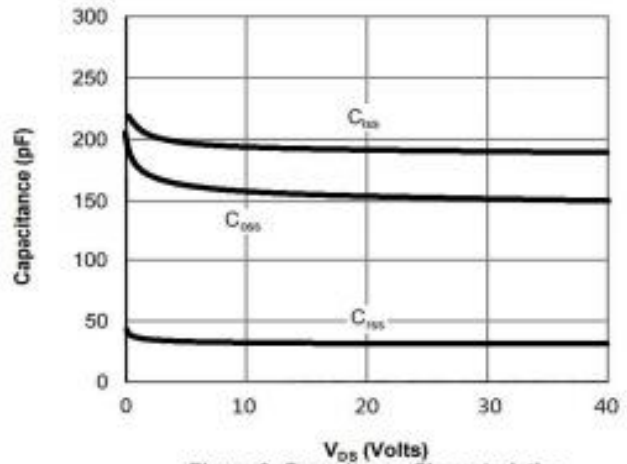


Figure 8: Capacitance Characteristics

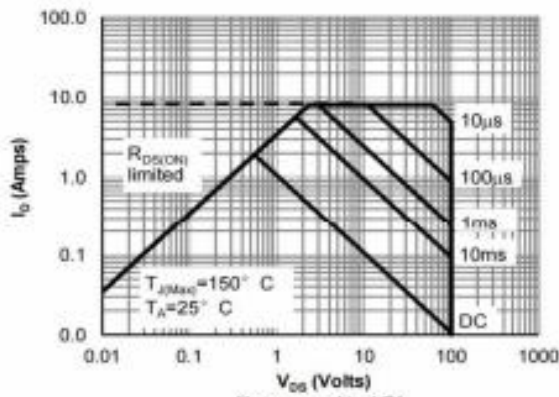


Figure 9: Maximum Forward Biased Safe Operating Area

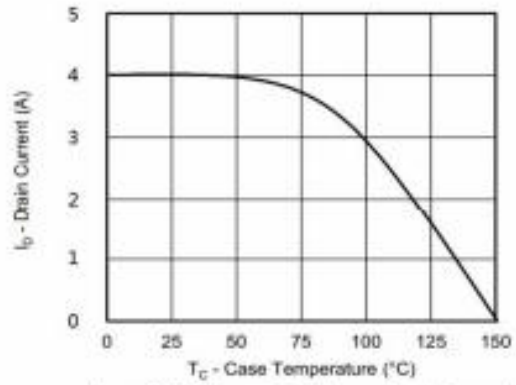


Figure 10: Maximum Continuous Drain Current vs Case Temperature

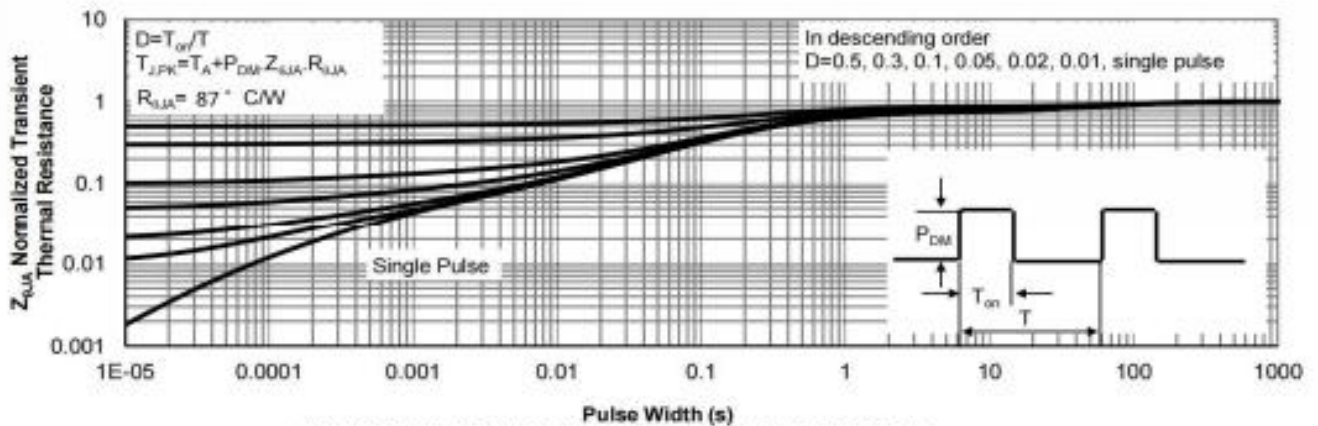
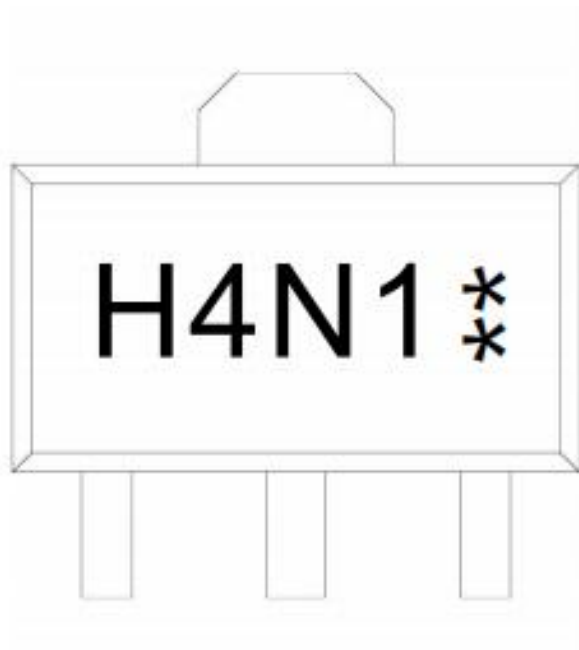


Figure 11: Normalized Maximum Transient Thermal Impedance

## Marking Instructions



Note:

4N1: Product Type Code.

H: Company Code.

\*\* : Lot No. Code, code change with Lot No.

## Packaging SPEC

### REEL INFORMATION

Package Type	Units					Dimension (unit: mm <sup>3</sup> )		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT-89	1,000	7	7,000	6	42,000	7" ×12	180×120×180	390×358×205

Package Outline Dimensions

SOT-89

单位: mm

