HOMSEMI
SEMICONDUCTOR

HS15N10DA

N channel MOSFET

1. Description

The HS15N10DA is the N-Channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology.This high density process is especially tailored to minimize on-state resistance. These devices are particularly suited for low voltage application such as cellular phone and notebook computer power management and other battery powered circuits , where high-side switching, and low in-line power loss are needed in a very small outline surface mount package.

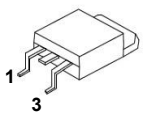
2. Feature

- $R_{DS(ON)} \leqq 100m\Omega$ @VGS=10V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability

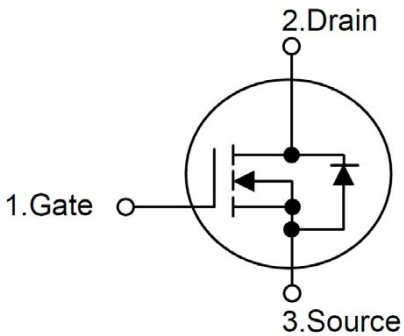
V_{DS}	100	V
$R_{DS(on)}$	100	mΩ
I_D	14.7	A

3. Pin configuration

Order Number	Package
HS15N10DA	TO-252



TO-252



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4. Absolute maximum ratings (TA=25℃ Unless Otherwise Noted)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		VDSS	100	V
Gate-Source Voltage		VGSS	±20	V
Continuous Drain Current(Tj=150℃)	Tc=25℃	ID	14.7	A
	Tc=70℃		13.6	
Pulsed Drain Current		IDM	59	A
Maximum Power Dissipation	Tc=25℃	PD	34.7	W
	Tc=70℃		22.2	
Operating Junction Temperature		TJ	-55 to 150	℃

5. Thermal characteristics

Parameter	Symbol	Ratings	Units
Thermal resistance, case-to-sink typ.	R_{thCS}	3.6	°C/W
Thermal resistance junction-case	R_{thJC}	5	°C/W

6. Electrical characteristics (TA=25℃ Unless Otherwise Specified)

Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250μA	100			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	1		3	V
I_{GSS}	Gate Leakage Current	V_{DS}=0V, V_{GS}=±20V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=80V, V_{GS}=0V			1	μA
$R_{DS(ON)}$	Drain-Source On-Resistance [a]	V_{GS}=10V, I_D= 8A		80	100	mΩ
V_{SD}	Diode Forward Voltage	I_S=8A, V_{GS}=0V		0.9	1.2	V
DYNAMIC						
Qg	Total Gate Charge	V_{DS}=80V, V_{GS}=10V, I_D=10A		24		nC
Qg	Total Gate Charge	V_{DS}=80V, V_{GS}=4.5V, I_D=10A		13		
Qgs	Gate-Source Charge			4.6		
Qgd	Gate-Drain Charge			7.6		
Ciss	Input Capacitance	V_{DS}=15V, V_{GS}=0V, f=1MHz		890		pF
Coss	Output Capacitance			58		
Crss	Reverse Transfer Capacitance			23		
Rg	Gate-Resistance	V_{DS}=0V, V_{GS}=0V, f=1MHz		0.9		Ω
$t_{d(on)}$	Turn-On Delay Time	V_{DS}=50V, R_L=5Ω, V_{GEN}=10V, R_G=1Ω		14		ns
tr	Turn-On Rise Time			33		
$t_{d(off)}$	Turn-Off Delay Time			39		
tf	Turn-Off Fall Time			5		

Notes :a. pulse test:pulse width≦300 us,duty cycle≦2% ,Guaranteed by design,not subject to production testing.

b.Homsemi reserves the right to improve product design,functions and reliability without notice.

