STANSON

STN18D20

N Channel Enhancement Mode MOSFET

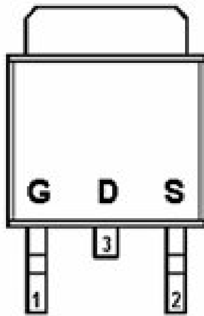
18.0A

DESCRIPTION

STN18D20 is the N-Channel logic enhancement mode power field effect transistor which is 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 power management and other battery powered circuits where high-side switching.

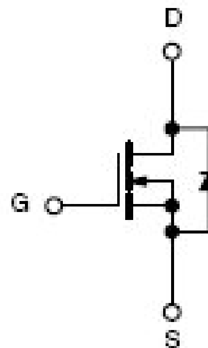
PIN CONFIGURATION

TO-252



FEATURE

- 200V/12A, $R_{DS(ON)}$ = 170mΩ(Typ.) @V_{GS} = 10V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- TO-252 package design



PART MARKING

Y: Year Code
A: Date Code
Q: Process Code

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ABSOULTE MAXIMUM RATINGS (Ta = 25℃ Unless otherwise noted)

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		VDSS	200	V
Gate-Source Voltage		VGSS	±30	V
Continuous Drain Current (TJ=150℃)	TA=25℃ TA=100℃	ID	18 11.4	A
Pulsed Drain Current		IDM	36	A
Avalanche Current		IAS	17	mJ
Power Dissipation	TA=25℃	PD	112	W
Operation Junction Temperature		TJ	150	℃
Storgae Temperature Range		TSTG	-55/150	℃
Thermal Resistance-Junction to Ambient		RθJA	80	℃/W

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ELECTRICAL CHARACTERISTICS (Ta = 25℃ Unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,ID=250uA	200			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},ID=250uA	2		5	V
Gate Leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=±30V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=160V,V_{GS}=0V			2	uA
On-State Drain Current	$I_{D(on)}$	V_{DS}≧5V,V_{GS}=10V	18			A
Drain-source On-Resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=12A		170	220	mΩ
Forward Transconductance	gfs	V_{DS}=15V,I_D=20A		8.5		S
Diode Forward Voltage	V_{SD}	I_S=1A,V_{GS}=0V			1	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=160V,V_{GS}=10V I_D=12 A		17.6	25	nC
Gate-Source Charge	Q_{gs}			7.6	11	
Gate-Drain Charge	Q_{gd}			3.7	5.2	
Input Capacitance	C_{iss}	V_{DS} =25,V_{GS}=0V f=1MHz		1000	1400	pF
Output Capacitance	C_{oss}			110	155	
Reverse TransferCapacitance	C_{rss}			2.4	3.5	
Turn-On Time	$t_{d(on)}$	V_{DS}=100,R_G=3.3 V_{GEN}=10V, I_D=12 A R_G=1.0Ω		9.4	19	nS
	tr			23	41	
Turn-Off Time	$t_{d(off)}$			18.4	37	
	tf			15.6	21.8	

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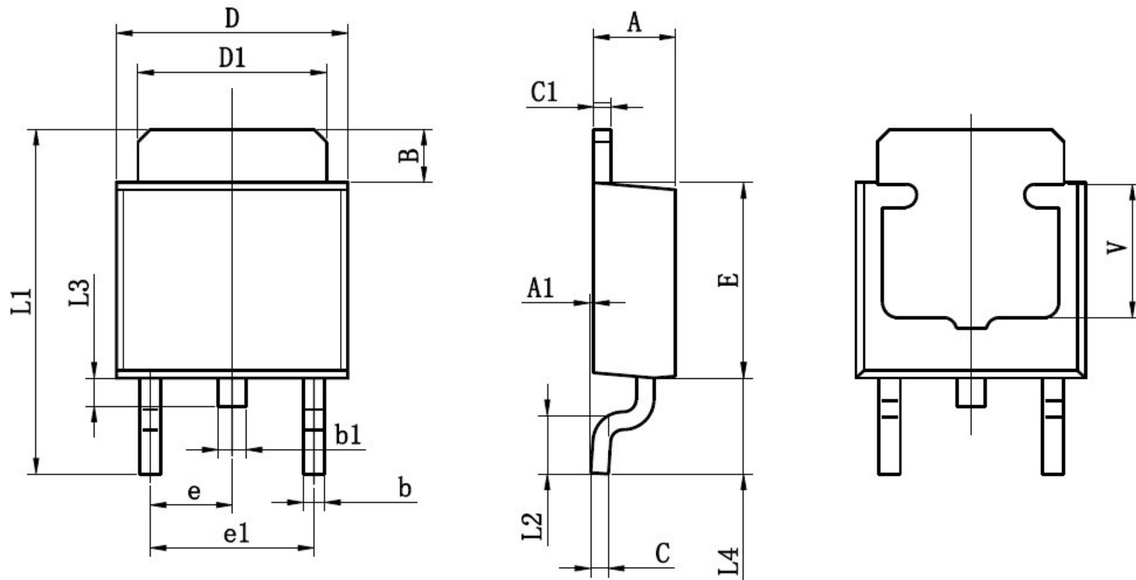
PACKAGE OUTLINE SOP-8P



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	5.700	0.213	0.224
e	2.300TYP		0.091TYP	
e1	4.500	4.700	0.177	0.185
L1	9.500	9.900	0.374	0.390
L2	1.400	1.780	0.055	0.070
L3	0.650	0.950	0.026	0.037
L4	2.550	2.900	0.100	0.114
V	3.80REF		0.150REF	

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