ST36N10D

N Channel Enhancement Mode MOSFET

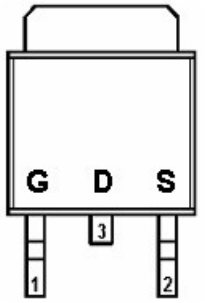
36.0A

DESCRIPTION

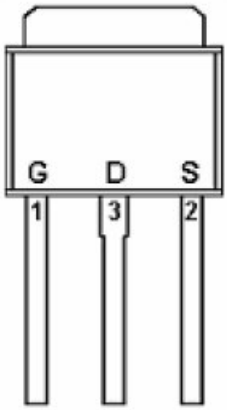
STN36N10D is used trench technology to provide excellent RDS(on) and gate charge. Those devices are suitable for use as load switch or in PWM applications.

PIN CONFIGURATION (D-PAK)

TO-252



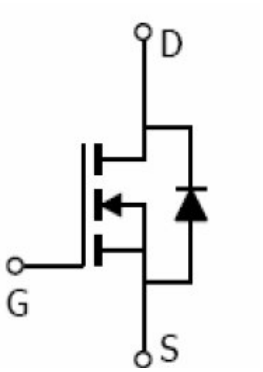
TO-251



FEATURE

- 100V/20.0A, $R_{DS(ON)}$ = 40mΩ (Typ.) @V_{GS} = 10V
- 100V/20.0A, $R_{DS(ON)}$ = 42mΩ @V_{GS} = 4.5V
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- TO-252,TO-251 package design

PART MARKING



Y: Year Code
A: Week Code
Q: Process Code

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

Parameter		Symbol	Typical	Unit
Drain-Source Voltage		VDSS	100	V
Gate-Source Voltage		VGSS	±20	V
Continuous Drain Current (TJ=150℃)	TA=25℃ TA=70℃	ID	36.0 14.0	A
Pulsed Drain Current		IDM	100	A
Continuous Source Current (Diode Conduction)		IS	2.7	A
Power Dissipation	TA=25℃ TA=70℃	PD	83 30	W
Operation Junction Temperature		TJ	175	℃
Storgae Temperature Range		TSTG	-55/175	℃
Thermal Resistance-Junction to Ambient		RθJA	95	℃/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=250mA	100			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},ID=250uA	1		3	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=80V,V_{GS}=0V			10	nA
Gate leakage Current	I_{GSS}	V_{DS}=0V,V_{GS}=20V			100	uA
		V_{DS}=0V,V_{GS}=-20V			-100	
On-State Drain Current	$I_{D(on)}$	V_{DS}≧5V,V_{GS}=10V	36			A
Drain-source On-Resistance	$R_{DS(on)}$	V_{GS}=10V,I_D=20A V_{GS}=4.5V,I_D=20A		40 42	48 52	mΩ
Forward Transconductance	gfs	V_{DS}=5V,I_D=20A		35		S
Diode Forward Voltage	V_{SD}	I_S=1.0A,V_{GS}=0V			1.2	V
Dynamic						
Total Gate Charge	Q_g	V_{DS}=10V,V_{DS}=30V I_D≡20A		61	80	nC
Gate-Source Charge	Q_{gs}			12		
Gate-Drain Charge	Q_{gd}			16		
Input Capacitance	C_{iss}	V_{DS} =20V,VGS=0V F=1MHz		2580		pF
Output Capacitance	C_{oss}			270		
Reverse TransferCapacitance	C_{rss}			88		
Turn-On Time	$t_{d(on)}$ tr	V_{DD}=20V,R_L= 4Ω I_D=5.0A,V_{GEN}=10V R_G=1Ω		20		nS
				19		
Turn-Off Time	$t_{d(off)}$ tf			80		
				42		

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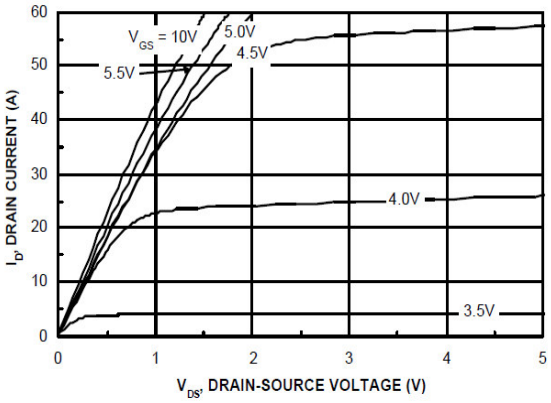
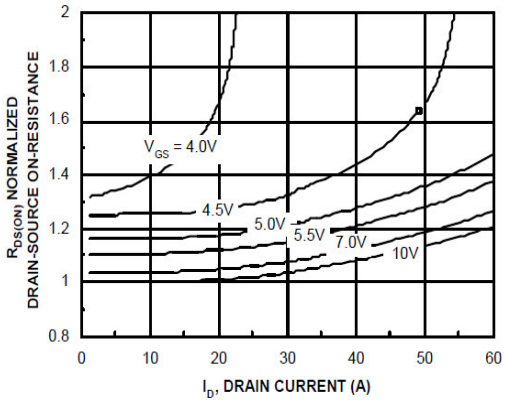
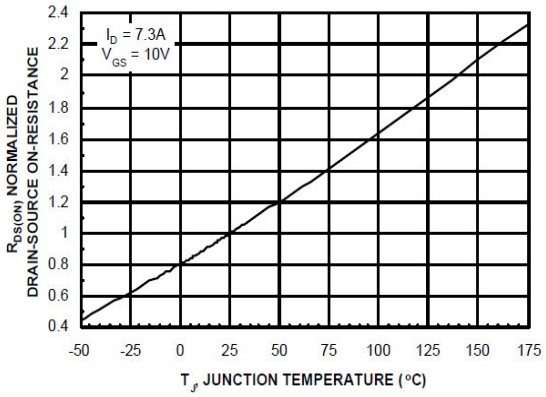
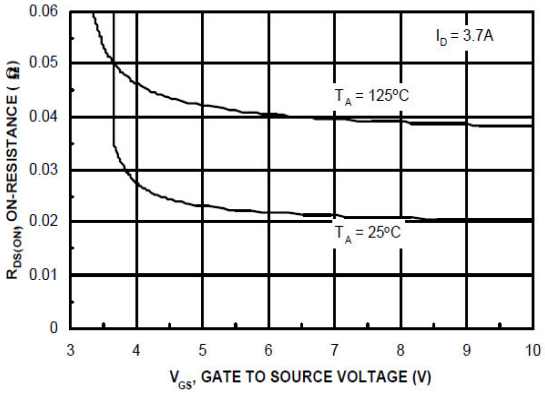
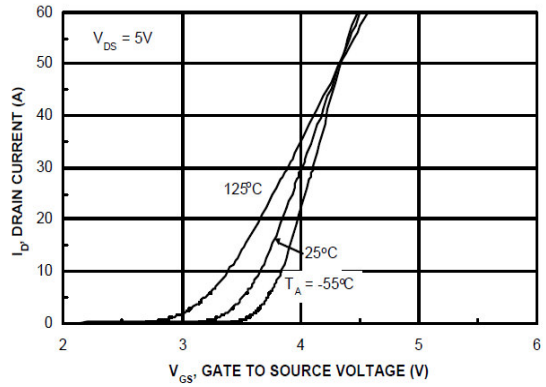
TYPICAL CHARACTERICTICS

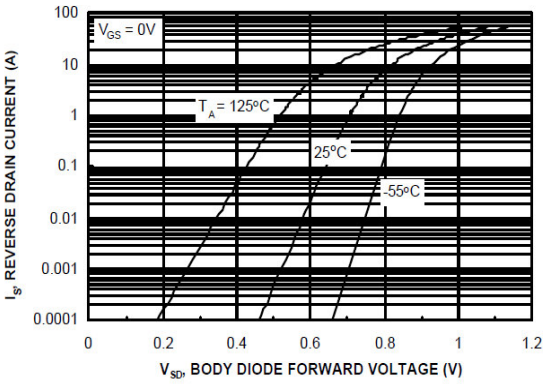












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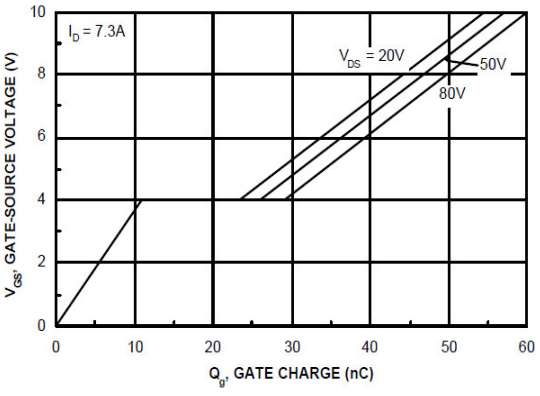
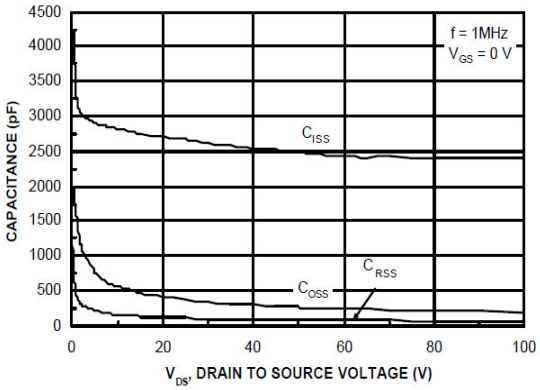
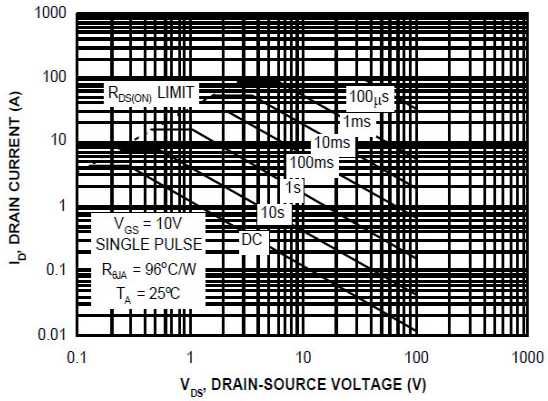
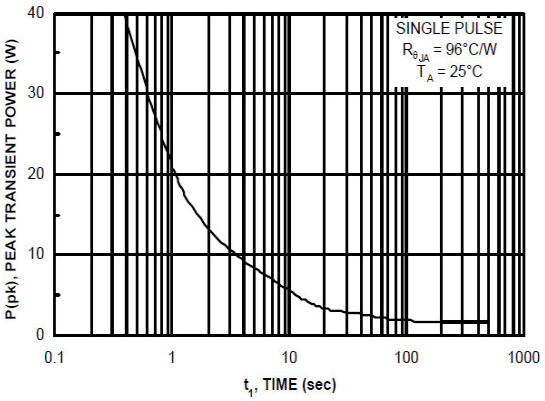
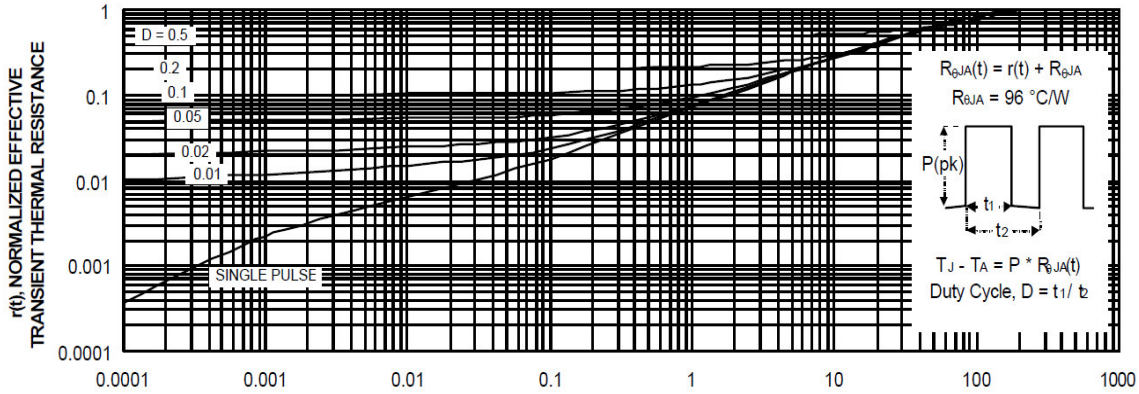
TYPICAL CHARACTERICTICS











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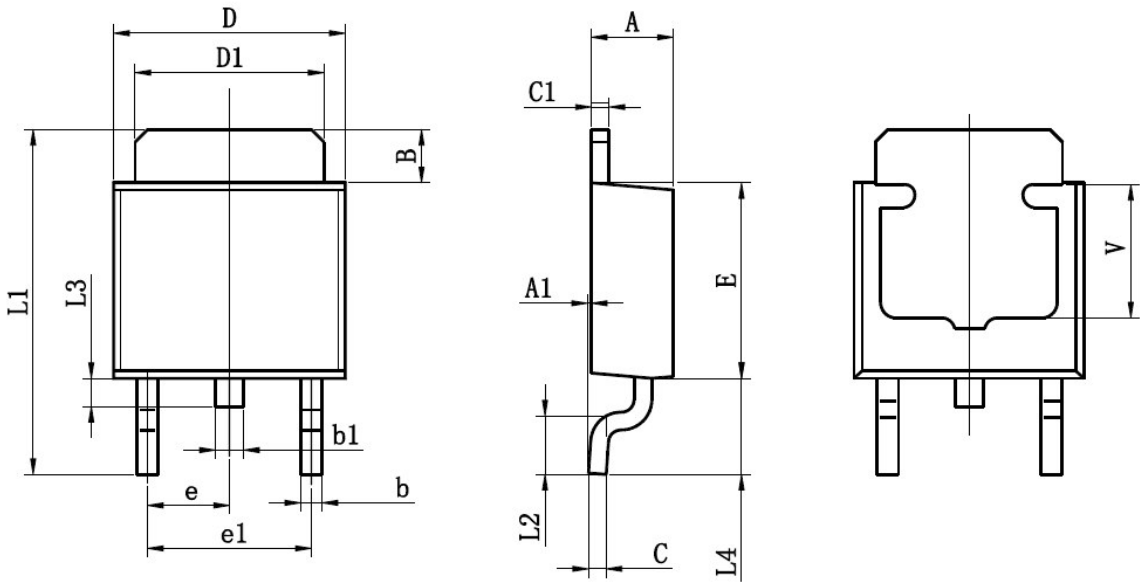
TO-252-2L PACKAGE OUTLINE SOP-8P



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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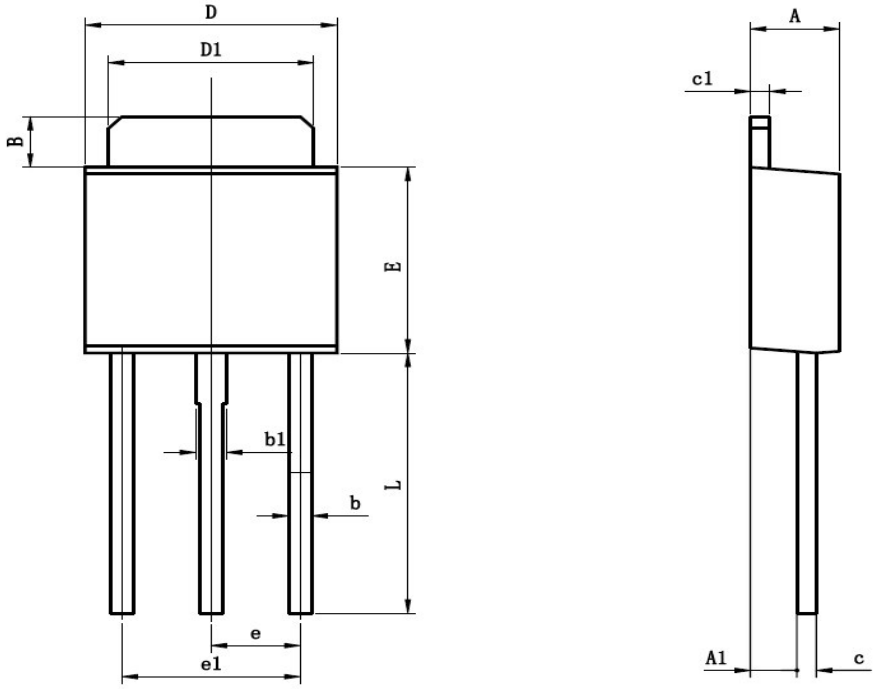

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	1.020	1.270	0.040	0.050
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
b1	0.700	0.900	0.028	0.035
c	0.430	0.580	0.017	0.023
c1	0.430	0.580	0.017	0.023
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	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
L	7.500	7.900	0.295	0.311

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