

General Description

The MY40N20P is N-channel Enhanced VDMOSFETs, obtained by the self-aligned planar Technology which reduce the conduction loss, improve switching performance and enhance the avalanche energy.

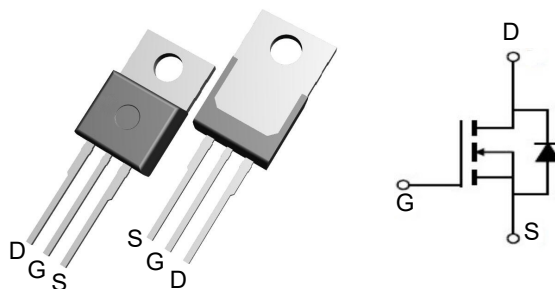


Features

V_{DSS}	200	V
I_D	40	A
P_D ($T_C = 25^\circ\text{C}$)	250	W
$R_{DS(ON)}$ (at $V_{GS} = 10\text{V}$)	72	$\text{m}\Omega$

Application

- High efficiency switch mode power supplies
- Power factor correction
- Electronic lamp ballast



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MY40N20P	TO-220	MY40N20P	1000

Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameters	Ratings	Unit
V_{DSS}	Drain-Source Voltage	200	V
V_{GS}	Gate-Source Voltage-Continuous	± 20	V
I_D	Drain Current-Continuous (Note 2)	40	A
I_{DM}	Drain Current-Single Pulsed (Note 1)	160	A
P_D	Power Dissipation (Note 2)	250	W
T_j	Max. Operating junction temperature	150	$^\circ\text{C}/\text{W}$

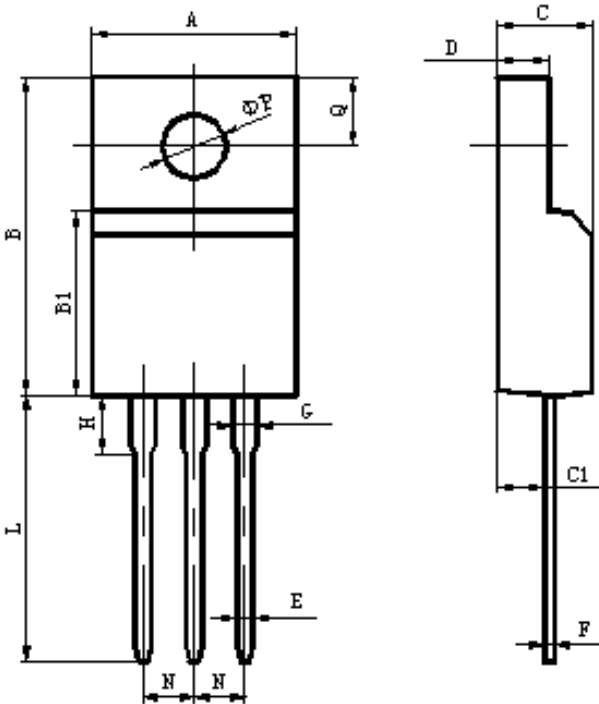
Electrical Characteristics ($T_c=25\text{ }^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameters	Min	Typ	Max	Units	Conditions
Static Characteristics						
B _{VDS}	Drain-Source Breakdown VoltageCurrent (Note 1)	200	--	--	mA	I _D =250μA V _{GS} =0V , T _J =25°C
V _{GS(th)}	Gate Threshold Voltage	2.0	--	4.0	V	V _{DS} =V _{GS} , I _D =250μA
R _{DS(on)}	Drain-Source On-Resistance	--	--	72	mΩ	V _{GS} =10V , I _D =16A
I _{GSS}	Gate-Body Leakage Current	--	--	±100	nA	V _{GS} =±20V , V _{DS} =0
I _{DSS}	Zero Gate Voltage Drain Current	--	--	1	μA	V _{DS} =200V , V _{GS} =0
Switching Characteristics						
T _{d (on)}	Turn-On Delay Time	--	28	--	ns	V _{DS} =100V, I _D =30A, R _G =25Ω,V _{GS} =10V (Note 2)
T _r	Rise Time	--	36	--	ns	
T _{d (off)}	Turn-Off Delay Time	--	153	--	ns	
T _f	Fall Time	--	88	--	ns	
Q _g	Total Gate Charge	--	55	--	nC	V _{DS} =160V,V _{GS} =10V I _D =30A (Note 2)
Q _{gs}	Gate-Source Charge	--	11	--	nC	
Q _{gd}	Gate-Drain Charge	--	18	--	nC	
Dynamic Characteristics						
C _{iss}	Input Capacitance	--	1450	--	pF	V _{DS} =25V , V _{GS} =0, f=1MHz
C _{oss}	Output Capacitance	--	350	--	pF	
C _{rss}	Reverse Transfer Capacitance	--	38	--	pF	
I _s	Continuous Drain-Source Diode ForwardCurrent (Note 2)	--	--	40	A	
V _{SD}	Diode Forward On-Voltage	--	--	1.4	V	I _s =30A , V _{GS} =0
R _{th(j-c)}	Thermal Resistance, Junction to Case	--	--	0.5	C/ W	

Note 1: Repetitive Rating : Pulse width limited by maximum junction temperature

Note 2: Pulse test: $PW \leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

Package Mechanical Data-TO-220 Single



Items	Values(mm)	
	MIN	MAX
A	9.60	10.4
B	15.4	16.2
B1	8.90	9.50
C	4.30	4.90
C1	2.10	3.00
D	2.40	3.00
E	0.60	1.00
F	0.30	0.60
G	1.12	1.42
H	3.40	3.80
	2.40	2.90
L*	12.0	14.0
N	2.34	2.74
Q	3.15	3.55
Φ P	2.90	3.30