isc N-Channel MOSFET Transistor

IPP80N06S2-09

• FEATURES

• Drain Current $-I_D$= 100A@ T_C=25℃

• Drain Source Voltage-

: V_{DSS}= 55V(Min)

• Static Drain-Source On-Resistance

: $R_{DS(on)}$: 9.1mΩ (Max)

• 100% avalanche tested

• Minimum Lot-to-Lot variations for robust device performance and reliable operation

• DESCRITION

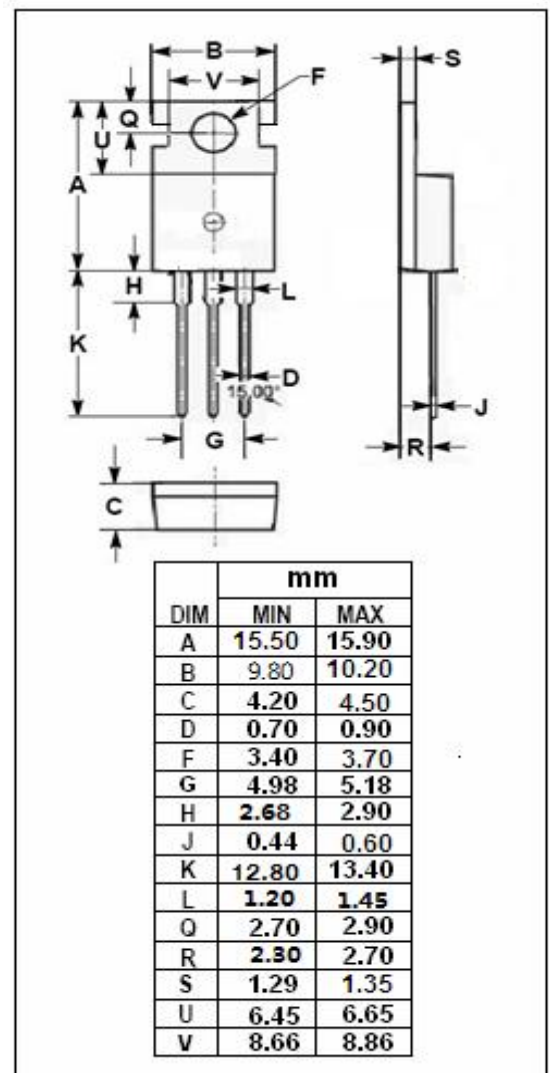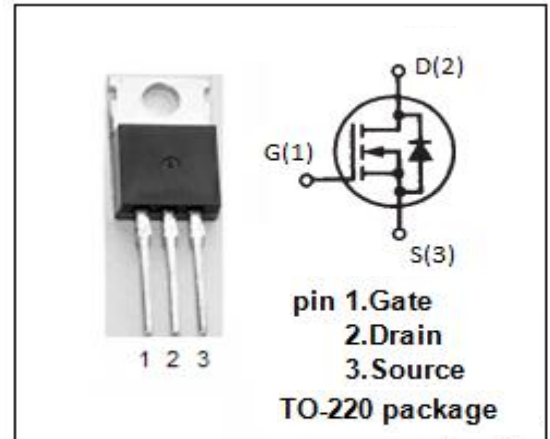• Ultra Low On-resistance

• Fast Switching

pin 1.Gate
2.Drain
3.Source
TO-220 package

Type	Marking
IPP80N06S2-09	2N0609

• ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage	55	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Drain Current-Continuous	100	A
I_{DM}	Drain Current-Single Pulsed	280	A
EAS	Avalanche energy L=0.2mH	380	mJ
P_D	Total Dissipation @T_C=25℃	190	W
T_j	Max. Operating Junction Temperature	175	℃
T_{stg}	Storage Temperature	-55~175	℃

• THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
Rth(j-c)	Channel-to-case thermal resistance	0.8	℃/W

DIM	mm	
	MIN	MAX
A	15.50	15.90
B	9.80	10.20
C	4.20	4.50
D	0.70	0.90
F	3.40	3.70
G	4.98	5.18
H	2.68	2.90
J	0.44	0.60
K	12.80	13.40
L	1.20	1.45
Q	2.70	2.90
R	2.30	2.70
S	1.29	1.35
U	6.45	6.65
V	8.66	8.86

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	YTP	MAX	UNIT
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V; I_D=250 μA	55	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}; I_D=125 μA	2.1	-	4.0	V
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}=10V; I_D=50A	-	-	9.1	mΩ
I_{GSS}	Gate-Source Leakage Current	V_{GS}= ±20V	-	-	±100	nA
I_{DSS}	Drain-Source Leakage Current	V_{DS}= 55V; V_{GS}= 0V	-	-	1	μA

Dynamic

SYMBOL	PARAMETER	CONDITIONS	MIN	YTP	MAX	UNIT
C_{iss}	Input Capacitance	V_{GS} = 0V, V_{DS} = 20V, f = 1.0MHz	-	7500	-	pF
C_{oss}	Output Capacitance		-	660	-	pF
C_{rss}	Reverse Transfer Capacitance		-	385	-	pF
R_G	Gate resistance		-	0.82	-	Ω
Q_g	Total Gate Charge	V_{DS} = 30V, I_D = 15A, V_{GS} = 10V	-	102	-	nC
Q_{gs}	Gate-Source Charge		-	48	-	nC
Q_{gd}	Gate-Drain Charge		-	26.2	-	nC
$t_{d(on)}$	Turn-on Delay Time	V_{GS} = 10V, V_{DS} = 30V, I_D =15A, R_G = 2Ω	-	53.2	-	ns
t_r	Turn-on Rise Time		-	112	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	38	-	ns
t_f	Turn-off Fall Time		-	34	-	ns

Drain - Source Body Diode Characteristics

SYMBOL	PARAMETER	CONDITIONS	MIN	YTP	MAX	UNIT
I_{SM}	Pulsed Source Current	T_c = 25 ºC	-	-	100	A
V_{SD}	Diode Forward Voltage	T_c = 25 ºC ,I_{SD}= 100A; V_{GS}= 0V	-	0.65	1.0	V
t_{rr}	Reverse Recovery Time	I_F = 40A, di_F/dt = 100A /μs	-	60	-	ns
Q_{rr}	Reverse Recovery Charge		-	114	-	uC

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