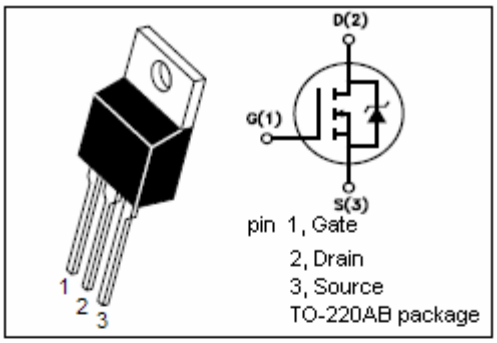
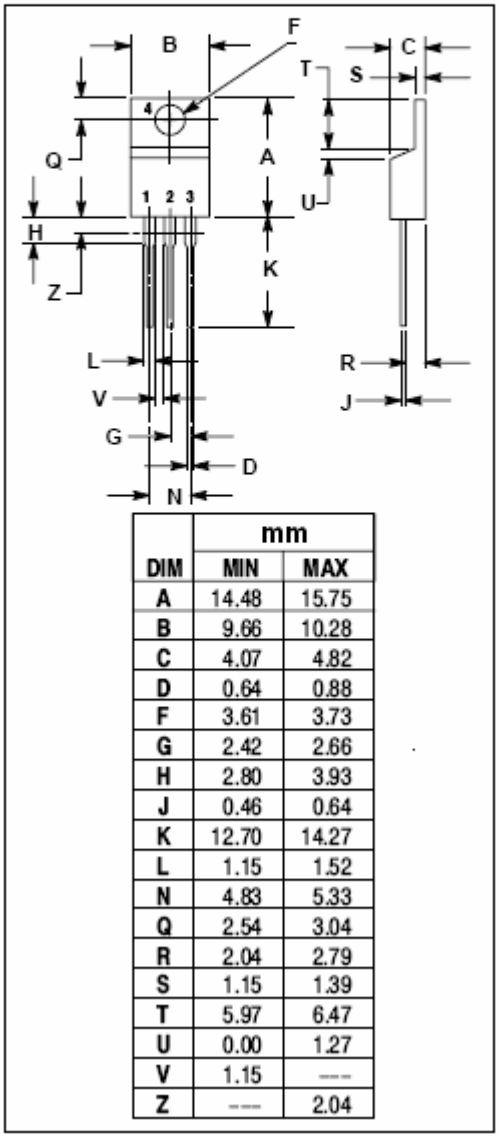
isc N-Channel Mosfet Transistor IRF511

- **FEATURES**
- Low $R_{DS(on)}$
- V_{GS} Rated at ±20V
- Silicon Gate for Fast Switching Speed
- Rugged
- Low Drive Requirements



- **DESCRITION**
- Designed especially for high voltage,high speed applications, such as off-line switching power supplies , UPS,AC and DC motor controls,relay and solenoid drivers.



DIM	mm MIN	mm MAX
A	14.48	15.75
B	9.66	10.28
C	4.07	4.82
D	0.64	0.88
F	3.61	3.73
G	2.42	2.66
H	2.80	3.93
J	0.46	0.64
K	12.70	14.27
L	1.15	1.52
N	4.83	5.33
Q	2.54	3.04
R	2.04	2.79
S	1.15	1.39
T	5.97	6.47
U	0.00	1.27
V	1.15	---
Z	---	2.04

- **ABSOLUTE MAXIMUM RATINGS(T_a=25℃)**

SYMBOL	PARAMETER	VALUE	UNIT
V_{DSS}	Drain-Source Voltage	80	V
V_{GS}	Gate-Source Voltage-Continuous	±20	V
I_D	Drain Current-Continuous	5.6	A
I_{DM}	Drain Current-Single Plused	20	A
P_D	Total Dissipation @T_C=25℃	43	W
T_j	Max. Operating Junction Temperature	-55~175	℃
T_{stg}	Storage Temperature	-55~175	℃

- **THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal Resistance,Junction to Case	3.5	℃/W
$R_{th\ j\text{-}a}$	Thermal Resistance,Junction to Ambient	80	℃/W

isc N-Channel Mosfet Transistor IRF511

ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}= 0; I_D= 0.25mA	80			V
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}; I_D= 0.25mA	2		4	V
$R_{DS(on)}$	Drain-Source On-Resistance	V_{GS}= 10V; I_D= 5.6A			0.74	Ω
I_{GSS}	Gate-Body Leakage Current	V_{GS}= ±20V;V_{DS}= 0			±500	nA
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}= 80V; V_{GS}=0			250	uA
V_{SD}	Forward On-Voltage	I_S= 5.6A; V_{GS}=0			2.5	V
Ciss	Input Capacitance	V_{DS}=25V,V_{GS}=0V, F=1.0MHz		135		pF
Coss	Output Capacitance			80		pF
Crss	Reverse Transfer Capacitance			20		pF

• SWITCHING CHARACTERISTICS (T_C=25℃)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Td(on)	Turn-on Delay Time	V_{DD}=50V,I_D=5.6A V_{GS}=10V,R_{GEN}=24Ω R_{GS}=24Ω		8	11	ns
Tr	Rise Time			25	36	ns
Td(off)	Turn-off Delay Time			15	21	ns
Tf	Fall Time			12	21	ns