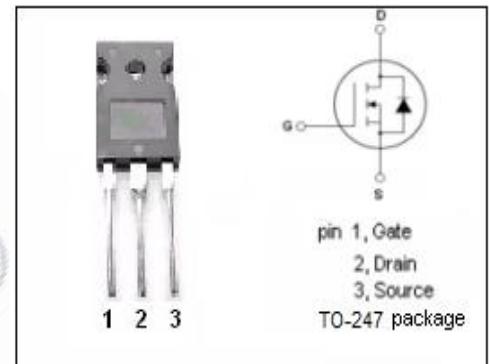


## isc N-Channel MOSFET Transistor

## IRFP4004, IIRFP4004

### • FEATURES

- Static drain-source on-resistance:  
 $R_{DS(on)} \leq 1.7\text{m}\Omega$
- Enhancement mode:  
 $V_{TH} = 2.0 \text{ to } 4.0\text{V}$  ( $V_{DS} = V_{GS}$ ,  $I_D = 250\text{\mu A}$ )
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

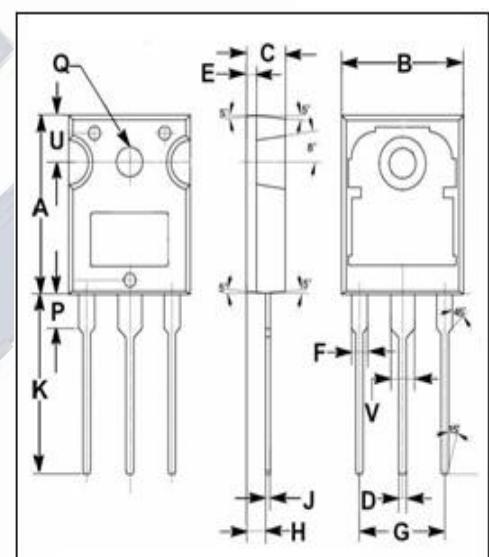


### • DESCRIPTION

- High Efficiency Synchronous Rectification in SMPS
- Uninterruptible Power Supply
- High Speed Power Switching

### • ABSOLUTE MAXIMUM RATINGS( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	VALUE	UNIT
$V_{DSS}$	Drain-Source Voltage	40	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_D$	Drain Current-Continuous	195	A
$I_{DM}$	Drain Current-Single Pulsed	1390	A
$P_D$	Total Dissipation @ $T_c=25^\circ\text{C}$	380	W
$T_j$	Max. Operating Junction Temperature	175	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55~175	$^\circ\text{C}$



DIM	mm	
	MIN	MAX
A	19.80	20.20
B	15.40	15.80
C	4.90	5.10
D	0.90	1.10
E	1.40	1.60
F	1.90	2.10
G	10.80	11.00
H	2.40	2.60
J	0.50	0.70
K	19.50	20.50
P	3.90	4.10
Q	3.30	3.50
U	5.20	5.40
V	2.90	3.10

### • THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th(j-c)}$	Channel-to-case thermal resistance	0.4	$^\circ\text{C/W}$
$R_{th(j-a)}$	Channel-to-ambient thermal resistance	40	$^\circ\text{C/W}$

## isc N-Channel MOSFET Transistor

IRFP4004, IIRFP4004

## ELECTRICAL CHARACTERISTICS

 $T_c=25^\circ\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$\text{BV}_{\text{DSS}}$	Drain-Source Breakdown Voltage	$\text{V}_{\text{GS}}=0\text{V}; \text{I}_D=250 \mu\text{A}$	40			V
$\text{V}_{\text{GS(th)}}$	Gate Threshold Voltage	$\text{V}_{\text{DS}}=\text{V}_{\text{GS}}; \text{I}_D=250 \mu\text{A}$	2.0		4.0	V
$\text{R}_{\text{DS(on)}}$	Drain-Source On-Resistance	$\text{V}_{\text{GS}}=10\text{V}; \text{I}_D=195\text{A}$			1.7	$\text{m}\Omega$
$\text{I}_{\text{GSS}}$	Gate-Source Leakage Current	$\text{V}_{\text{GS}}= \pm 20\text{V}$			$\pm 0.2$	$\mu\text{A}$
$\text{I}_{\text{DSS}}$	Drain-Source Leakage Current	$\text{V}_{\text{DS}}=40\text{V}; \text{V}_{\text{GS}}= 0\text{V}$			20	$\mu\text{A}$
$\text{V}_{\text{SD}}$	Diode forward voltage	$\text{I}_S = 195\text{A}, \text{V}_{\text{GS}} = 0\text{V}$			1.3	V