

# isc N-Channel MOSFET Transistor

# IRFU3504Z

### • FEATURES

- With TO-251(IPAK) packaging
- High speed switching
- Easy to use
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### • APPLICATIONS

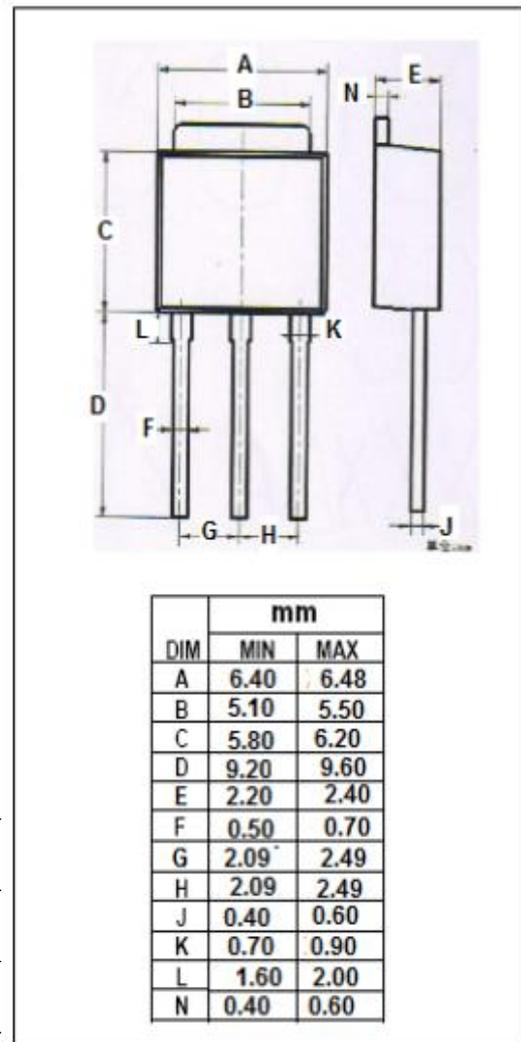
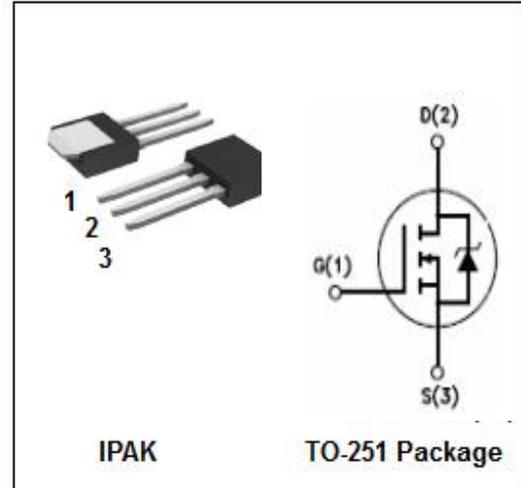
- Power supply
- DC-DC converters
- Motor control
- Switching applications

### • ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>DSS</sub>	Drain-Source Voltage	40	V
V <sub>GSS</sub>	Gate-Source Voltage	±20	V
I <sub>D</sub>	Drain Current-Continuous	77	A
I <sub>DM</sub>	Drain Current-Single Pulsed	310	A
P <sub>D</sub>	Total Dissipation	90	W
T <sub>j</sub>	Operating Junction Temperature	-55~175	°C
T <sub>stg</sub>	Storage Temperature	-55~175	°C

### • THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th(ch-c)</sub>	Channel-to-case thermal resistance	1.66	°C/W
R <sub>th(ch-a)</sub>	Channel-to-ambient thermal resistance	40	°C/W



**isc N-Channel MOSFET Transistor****IRFU3504Z****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V; I_D=0.25mA$	40			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}; I_D=0.25mA$	2.0		4.0	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10V; I_D=42A$		8.23	9.0	$m\Omega$
$I_{GSS}$	Gate-Source Leakage Current	$V_{GS}=\pm 20V; V_{DS}=0V$			$\pm 0.2$	$\mu A$
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=40V; V_{GS}=0V; T_j=25^{\circ}\text{C}$ $V_{DS}=40V; V_{GS}=0V; T_j=125^{\circ}\text{C}$			20 250	$\mu A$
$V_{SDF}$	Diode forward voltage	$I_{SD}=42A, V_{GS}=0V$			1.3	V

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