

isc N-Channel MOSFET Transistor

IRFBC42R

FEATURES

- Lower Input Capacitance
- Improved Gate Charge
- Extended Safe Operating Area
- Rugged Gate Oxide Technology

DESCRIPTION

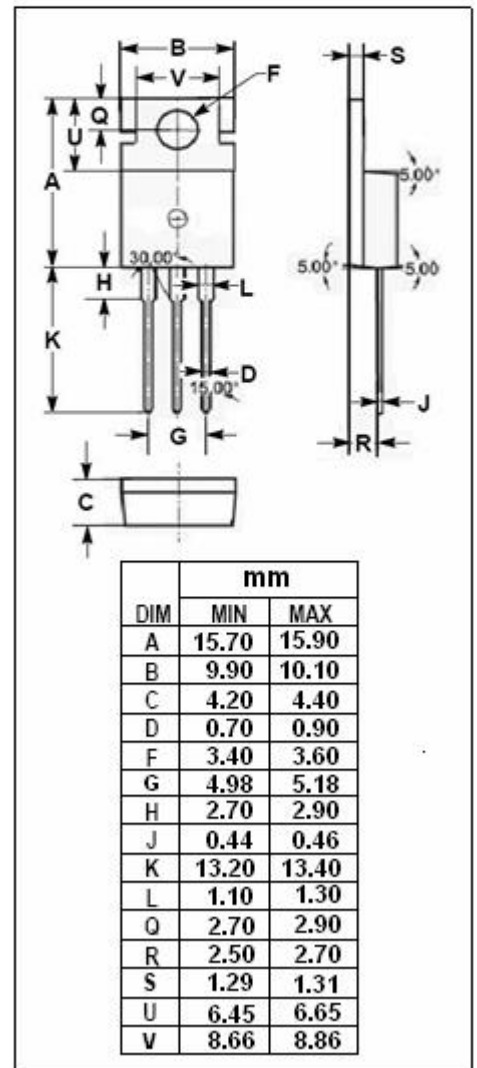
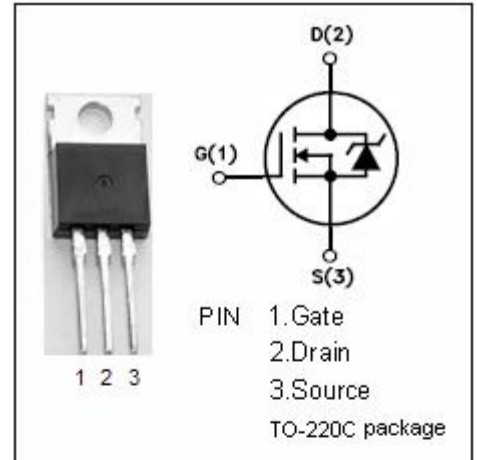
- Designed for use in switch mode power supplies and general purpose applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25°C)

SYMBOL	PARAMETER	VALUE	UNIT
V _{DSS}	Drain-Source Voltage	600	V
V _{GS}	Gate-Source Voltage-Continuous	±20	V
I _D	Drain Current-Continuous	5.4	A
I _{DM}	Drain Current-Single Pluse	22	A
P _D	Total Dissipation @T _C =25°C	125	W
T _J	Max. Operating Junction Temperature	-55~150	°C
T _{stg}	Storage Temperature	-55~150	°C

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
R _{th j-c}	Thermal Resistance, Junction to Case	1.0	°C/W
R _{th j-a}	Thermal Resistance, Junction to Ambient	80	°C/W



isc N-Channel MOSFET Transistor**IRFBC42R****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0; I_D=0.25\text{mA}$	600		V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}; I_D=0.25\text{mA}$	2	4	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=10\text{V}; I_D=3.4\text{A}$		1.6	Ω
I_{GSS}	Gate-Body Leakage Current	$V_{GS}=\pm 20\text{V}; V_{DS}=0$		± 500	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=600\text{V}; V_{GS}=0$		250	μA
V_{SD}	Forward On-Voltage	$I_S=6.2\text{A}; V_{GS}=0$		1.5	V
C_{iss}	Input Capacitance	$V_{DS}=25\text{V}, V_{GS}=0\text{V},$ $F=1.0\text{MHz}$		1550	pF
C_{oss}	Output Capacitance			175	pF
C_{rss}	Reverse Transfer Capacitance			75	pF

• SWITCHING CHARACTERISTICS ($T_C=25^{\circ}\text{C}$)

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$T_d(on)$	Turn-on Delay Time	$V_{DD}=300\text{V}, I_D=6.2\text{A}$ $R_G=9.1\Omega$		13	20	ns
T_r	Rise Time			18	27	ns
$T_d(off)$	Turn-off Delay Time			55	83	ns
T_f	Fall Time			20	30	ns