

**isc N-Channel MOSFET Transistor**

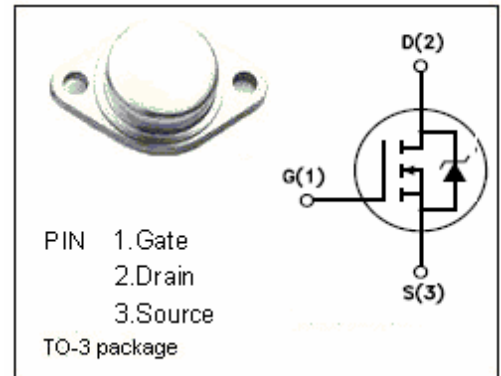
**IRFAC42R**

**DESCRIPTION**

- Repetitive Avalanche Ratings
- Dynamic dv/dt Rating
- Hermetically Sealed
- Simple Drive Requirements
- Ease of Paralleling

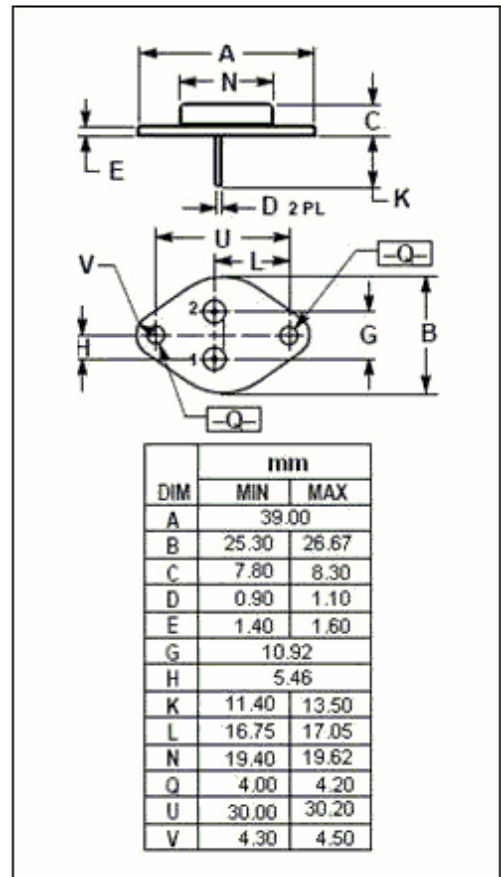
**APPLICATIONS**

- Designed for applications such as switching power Supplies ,motor controls ,inverters ,choppers ,audio amplifiers and high energy pulse circuits.



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

SYMBOL	PARAMETER	VALUE	UNIT
V <sub>DSS</sub>	Drain-Source Voltage (V <sub>GS</sub> =0)	600	V
V <sub>GS</sub>	Gate-Source Voltage	±20	V
I <sub>D</sub>	Drain Current-continuous@ TC=25°C	5.4	A
P <sub>tot</sub>	Total Dissipation@TC=25°C	125	W
T <sub>j</sub>	Max. Operating Junction Temperature	-55~150	°C
T <sub>stg</sub>	Storage Temperature Range	-55~150	°C



**THERMAL CHARACTERISTICS**

SYMBOL	PARAMETER	MAX	UNIT
R <sub>th j-c</sub>	Thermal Resistance,Junction to Case	1	°C/W
R <sub>th j-A</sub>	Thermal Resistance,Junction to Ambient	30	°C/W

## isc N-Channel Mosfet Transistor

## IRFAC42R

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	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-stage Resistance	$V_{GS}=10\text{V}; I_D=3.4\text{A}$			1.6	$\Omega$
$I_{GSS}$	Gate Source Leakage Current	$V_{GS}=\pm 20\text{V}; V_{DS}=0$			$\pm 100$	nA
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=600\text{V}; V_{GS}=0$			250	$\mu\text{A}$
$V_{SD}$	Diode Forward Voltage	$I_F=6.2\text{A}; V_{GS}=0$			1.5	V
$C_{iss}$	Input Capacitance	$V_{DS}=250\text{V}, V_{GS}=10\text{V}, F=1.0\text{MHz}$		1300		pF
$C_{oss}$	Output Capacitance			160		pF
$C_{rss}$	Reverse Transfer Capacitance			30		pF

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$T_d(\text{on})$	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
$T_d(\text{off})$	Turn-off Delay Time			55	83	ns
$T_f$	Fall Time			20	30	ns