



TECHNICAL DATA SHEET

DATA SHEET NO. 1002A

August 1988

High Voltage Power MOSFET Die

N-Channel Enhancement Mode High Ruggedness Series

The following device types use the IRFC250:

2N6766	IRF254/IRFP254
2N6765	
IRF250/IRFP250	
IRF251/IRFP251	
IRF252/IRFP252	
IRF253/IRFP253	

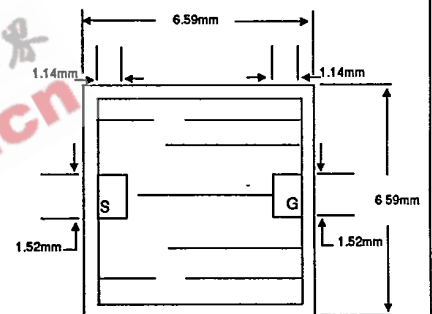
IRFC250

$V_{(BR)DSS}$ 200V
 $R_{DS(on)}$ 0.085 Ω

Die Topography

Notes:

1. Top Metal 3 μ m Aluminum
2. Back Metal Ni/V, with Au
3. Die thickness 420 \pm 10 μ m



FEATURES:

- Fast switching times
- Low $R_{DS(on)}$ HDMOS™ process
- Rugged polysilicon gate cell structure
- Excellent high voltage stability
- Low input capacitance
- Improved high temperature reliability

APPLICATIONS:

- Switching power supplies
- Motor controls
- Audio Amplifiers
- Inverters
- Choppers

ELECTRICAL CHARACTERISTICS: (TA=25 °C unless otherwise specified)

CHARACTERISTIC	TEST CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
Drain-Source Breakdown Voltage	$V_{GS} = 0 V, I_D = 250 \mu A$	$V_{(BR)DSS}$	200	—	—	V
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 250 \mu A$	$V_{GS(th)}$	2.0	—	4.0	V
Gate-Source Leakage Current	$V_{GS} = \pm 20 V_{DC}$	I_{GSS}	—	—	± 100	nA
Zero Gate Voltage Drain Current	$V_{DS} = V_{(BR)DSS} \times 0.8, V_{GS} = 0 V$ $T_C = 25^\circ C$ $T_C = 125^\circ C$	I_{DSS}	—	—	250	μA
		I_{DSS}	—	—	1000	μA
Static Drain-Source On-Resistance	$V_{GS} = 10 V, I_D = 15 A$	$R_{DS(ON)}$	—	—	0.085	Ω
Ciss Input Capacitance	$V_{GS} = 0V, V_{DS} = 25 V, f = 1.0 MHz$	Ciss	—	—	3000	pF
Coss Output Capacitance	Pulse Test: Pulse width $\leq 300ms$, duty cycle $\leq 2\%$	Coss	—	—	650	pF
Crss Reverse Transfer Capacitance		Crss	—	—	300	pF

NOTES:

1. I_D based on $R_{thJC} = 0.83^\circ C/W$
2. ASSEMBLY RECOMMENDATIONS:
 - a) 10 mil Gate and 15 mil Source wires
 - b) Drain mounted with 92.5/5/2.5% Lead/Indium/Silver solder, or 95/5% Lead/tin solder
3. Devices shipped in ESD protected waffle packs with a maximum of 25 die per waffle pack.
4. Die should be handled and assembled in clean room environment.
5. Die should be stored in inert atmosphere (1 atmosphere N_2)

IXYS Corporation reserves the right to change limits, test conditions, and dimensions without notice.

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