



TECHNICAL DATA SHEET

DATA SHEET NO. 1001A

August 1988

## High Voltage Power MOSFET Die

N-Channel Enhancement Mode High Ruggedness Series

The following device types use the IRFC150:

2N6764  
2N6763  
IRF150/IRFP150  
IRF151/IRFP151  
IRF152/IRFP152  
IRF153/IRFP153

### 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

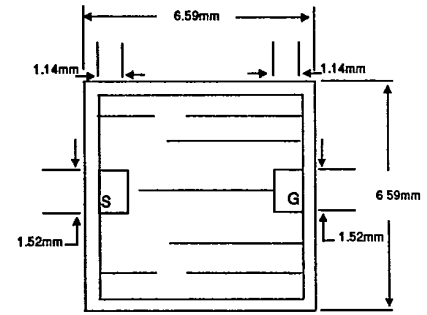
## IRFC150

$V_{(BR)DSS}$  ..... 100V  
 $R_{DS(on)}$  ..... 0.055 $\Omega$

### Die Topography

Notes:

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



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

CHARACTERISTIC	TEST CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}$ , $I_D = 250\ \mu\text{A}$	$V_{(BR)DSS}$	100	—	—	V
Gate Threshold Voltage	$V_{DS} = V_{GS}$ , $I_D = 250\ \mu\text{A}$	$V_{GS(th)}$	2.0	—	4.0	V
Gate-Source Leakage Current	$V_{GS} = \pm 20\text{ V}_{DC}$	$I_{GSS}$	—	—	$\pm 100$	nA
Zero Gate Voltage Drain Current	$V_{DS} = V_{(BR)DSS} \times 0.8$ , $V_{GS} = 0\text{ V}$ $T_C = 25^\circ\text{C}$ $T_C = 125^\circ\text{C}$	$I_{DSS}$	—	—	250	$\mu\text{A}$
		$I_{DSS}$	—	—	1000	$\mu\text{A}$
Static Drain-Source On-Resistance	$V_{GS} = 10\text{ V}$ , $I_D = 20\text{ A}$	$R_{DS(ON)}$	—	—	0.055	$\Omega$
Ciss Input Capacitance	$V_{GS} = 0\text{ V}$ , $V_{DS} = 25\text{ V}$ , $f = 1.0\text{ MHz}$	Ciss	—	—	3000	pF
Coss Output Capacitance	Pulse Test: Pulse width $\leq 300\text{ms}$ , duty cycle $\leq 2\%$	Coss	—	—	1500	pF
Crss Reverse Transfer Capacitance		Crss	—	—	500	pF

### NOTES:

1.  $I_D$  based on  $R_{thJC} = 0.83\ ^\circ\text{C/W}$
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  $\text{N}_2$ )

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

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