

## Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[IXYS Corporation](#)

[IXFR180N085](#)

For any questions, you can email us directly:

[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

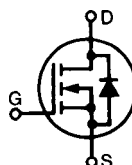
# IXYS

## HiPerFET™ Power MOSFETs IXFR 180N085 ISOPLUS247™ (Electrically Isolated Back Surface)

$V_{DSS} = 85 \text{ V}$   
 $I_{D25} = 180 \text{ A}$   
 $R_{DS(on)} = 7 \text{ m}\Omega$   
 $t_{rr} \leq 250 \text{ ns}$

Single MOSFET Die

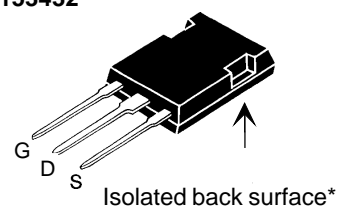
Preliminary data sheet



Symbol	Test Conditions	Maximum Ratings	
$V_{DSS}$	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	85	V
$V_{DGR}$	$T_J = 25^\circ\text{C to } 150^\circ\text{C}; R_{GS} = 1 \text{ M}\Omega$	85	V
$V_{GS}$	Continuous	$\pm 20$	V
$V_{GSM}$	Transient	$\pm 30$	V
$I_{D25}$	$T_C = 25^\circ\text{C}$ (MOSFET chip capability)	180	A
$I_{D(RMS)}$	External lead current limit	76	A
$I_{DM}$	$T_C = 25^\circ\text{C}$ , Note 1	720	A
$I_{AR}$	$T_C = 25^\circ\text{C}$	180	A
$E_{AR}$	$T_C = 25^\circ\text{C}$	60	mJ
$E_{AS}$	$T_C = 25^\circ\text{C}$	3	J
$dv/dt$	$I_S \leq I_{DM}$ , $di/dt \leq 100 \text{ A}/\mu\text{s}$ , $V_{DD} \leq V_{DSS}$ $T_J \leq 150^\circ\text{C}$ , $R_G = 2 \Omega$	5	V/ns
$P_D$	$T_C = 25^\circ\text{C}$	400	W
$T_J$		-55 ... +150	$^\circ\text{C}$
$T_{JM}$		150	$^\circ\text{C}$
$T_{stg}$		-55 ... +150	$^\circ\text{C}$
$T_L$	1.6 mm (0.063 in.) from case for 10 s	300	$^\circ\text{C}$
$V_{ISOL}$	50/60 Hz, RMS $t = 1 \text{ min}$	2500	V~
<b>Weight</b>		5	g

ISOPLUS 247™

E153432



G = Gate      D = Drain  
S = Source

\* Patent pending

### Features

- Silicon chip on Direct-Copper-Bond substrate
  - High power dissipation
  - Isolated mounting surface
  - 2500V electrical isolation
- Low drain to tab capacitance (<25pF)
- Low  $R_{DS(on)}$  HDMOS™ process
- Rugged polysilicon gate cell structure
- Unclamped Inductive Switching (UIS) rated
- Fast intrinsic Rectifier

### Applications

- DC-DC converters
- Battery chargers
- Switched-mode and resonant-mode power supplies
- DC choppers
- AC motor control

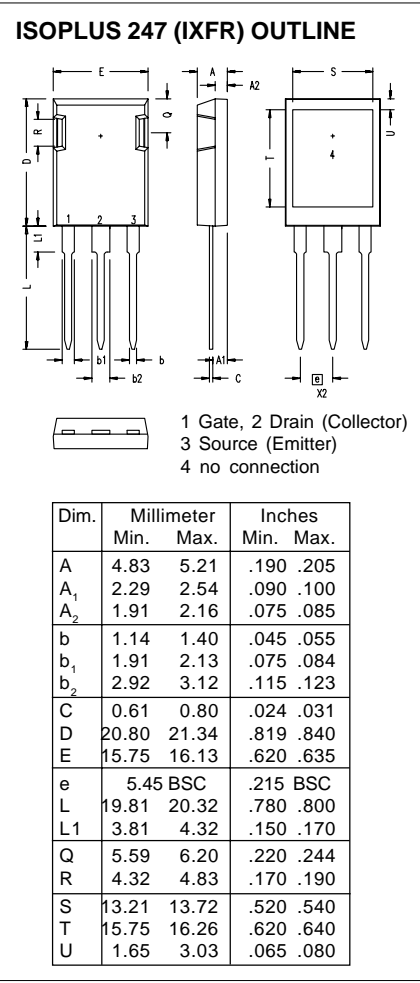
### Advantages

- Easy assembly
- Space savings
- High power density

Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$V_{DSS}$	$V_{GS} = 0 \text{ V}$ , $I_D = 3 \text{ mA}$	85		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$ , $I_D = 8 \text{ mA}$	2.0		V
$I_{GSS}$	$V_{GS} = \pm 20 \text{ V}$ , $V_{DS} = 0$			$\pm 100 \text{ nA}$
$I_{DS}$	$V_{DS} = V_{DSS}$ , $T_J = 25^\circ\text{C}$ $V_{GS} = 0 \text{ V}$ , $T_J = 125^\circ\text{C}$			100 $\mu\text{A}$ 2 mA
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$ , $I_D = 0.5 I_{D25}$ Note 1			7 m $\Omega$

**IXYS** **IXFR 180N085**

Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)	Characteristic Values		
			min.	typ.	max.
$g_{fs}$	$V_{DS} = 10\text{ V}; I_D = 60\text{ A}$ Note 2		55	90	S
$C_{iss}$	$V_{GS} = 0\text{ V}, V_{DS} = 25\text{ V}, f = 1\text{ MHz}$			9100	pF
$C_{oss}$				4000	pF
$C_{rss}$				2000	pF
$t_{d(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 I_{D25}$ $R_G = 1\ \Omega$ (External)			65	ns
$t_r$				90	ns
$t_{d(off)}$				140	ns
$t_f$				55	ns
$Q_{g(on)}$	$V_{GS} = 10\text{ V}, V_{DS} = 0.5 \cdot V_{DSS}, I_D = 0.5 I_{D25}$			320	nC
$Q_{gs}$				65	nC
$Q_{gd}$				170	nC
$R_{thJC}$				0.30	K/W
$R_{thCK}$			0.15		K/W



Symbol	Test Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$I_S$	$V_{GS} = 0\text{ V}$			180 A
$I_{SM}$	Repetitive; pulse width limited by $T_{JM}$			720 A
$V_{SD}$	$I_F = 100\text{ A}, V_{GS} = 0\text{ V}$ , Note 1			1.3 V
$t_{rr}$	$I_F = 50\text{ A}, -di/dt = 100\text{ A}/\mu\text{s}, V_R = 50\text{ V}$			250 ns
$Q_{RM}$			1.2	$\mu\text{C}$
$I_{RM}$			10	A

Note: 1. Pulse width limited by  $T_{JM}$   
 2. Pulse test,  $t \leq 300\ \mu\text{s}$ , duty cycle  $d \leq 2\%$