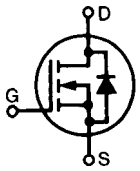
CoolMOS Power MOSFET in ISOPLUS247™ Package

IXKR 40N60

V_{DSS}	I_{D25}	$R_{DS(on)}$
600 V	40 A	70 mΩ

N-Channel Enhancement Mode
Low R_{DSon}, High V_{DSS} MOSFET
Package with Electrically Isolated Base

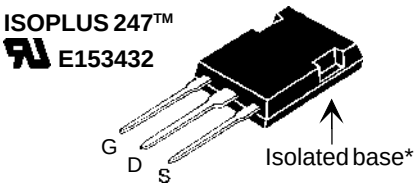


COOLMOS
Power Semiconductors

Symbol	Conditions	Maximum Ratings	
V_{DSS}	T_J = 25°C to 150°C	600	V
V_{GS}		±20	V
I_{D25}	T_C = 25°C	40	A
I_{D90}	T_C = 90°C	25	A
I_{DM}	T_C = 25°C, Pulse width limited by T_{JM}	160	A
I_{AR}	T_C = 25°C, L = 1.6 mH, single pulse	45	A
E_{AS}		1.8	J
dv/dt	$V_{DS} \le V_{DSS}$, I_S = 40 A, di_S/dt = 100 A/µs, $T_J = T_{JM}$	6	V/ns
P_D	T_C = 25°C	300	W
T_J		-55 ... +150	°C
T_{JM}		150	°C
T_{stg}		-55 ... +150	°C
T_L	1.6 mm (0.062 in.) from case for 10 s	300	°C
V_{ISOL}	50/60 Hz, RMS $I_{ISOL} \le$ 1 mA	2500	V~

MOSFET

Symbol	Conditions		Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
V_{DSS}	V_{GS} = 0 V, I_D = 250 µA		600			V
I_{DSS}	V_{DS} = 0.8 • V_{DSS}	T_J = 25°C		0.5	50	µA
	V_{GS} = 0 V	T_J = 125°C		5		µA
$R_{DS(on)}$	V_{GS} = 10 V, I_D = 0.5 • I_{D25}				70	mΩ
$V_{GS(th)}$	$V_{DS} = V_{GS}$, I_D = 3 mA		3.5		5.5	V
I_{GSS}	V_{GS} = ±20 V_{DC}, V_{DS} = 0				±100	nA



G = Gate D = Drain S = Source

* Patent pending

Features

- ISOPLUS247 package with DCB Base
  - Electrical isolation towards the heatsink
  - Low coupling capacitance to the heatsink for reduced EMI
  - High power dissipation
  - High temperature cycling capability of chip on DCB
  - JEDEC TO247AD compatible
  - Easy clip assembly
- CoolMOS power MOSFET
  - High blocking capability
  - Low on resistance
  - Avalanche rated for unclamped inductive switching (UIS)
  - Low thermal resistance due to reduced chip thickness
- Enhanced total power density

Applications

- Switched mode power supplies (SMPS)
- Uninterruptible power supplies (UPS)
- Power factor correction (PFC)
- Welding
- Inductive heating

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IXYS reserves the right to change limits, test conditions and dimensions.

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