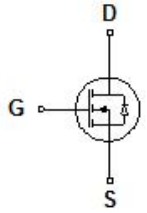
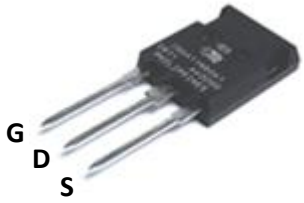
PRELIMINARY DATASHEET

600V 2X47A, Parallel N-Channel Enhancement Mode CoolMOS™ Power MOSFET in Extended TO247 Package





APPLICATIONS

- PC power supplies
- Consumer SMPS
- Telecom power supplies
- Server power supplies
- Solar inverter
- Welding inverter

FEATURES

- Low gate charge
- Ultra low $R_{ds(on)}$ <0.035Ω
- High dv/dt capability
- High peak current capability
- Pb-free finished; **RoHS compliant**

MAXIMUM RATINGS, T_C = 25°C unless otherwise noted

Parameter	Symbol	Value	Units
Drain - Source Voltage	V_{DSS}	600	V
Drain current – continuous current T_C= 25°C T_C= 100°C	I_D	75[2)] 60	A
Drain current – pulsed[1)]	I_{DM}	282	
Continuous drain-source diode current	I_{SD}	75[2)]	
Pulse drain-source diode current	I_{SM}	282	
Gate-source voltage	V_{GSS}	±30	V
MOSFET dv/dt ruggedness V_{DS} = 0..480V, I_D=78A	dV/dt	50	V/ns
Operating junction and storage temperature	T_j, T_{stg}	-55… +150	°C

Thermal Characteristics

Parameter	Symbol	Max. Value	Units
Characteristics			
Thermal resistance, junction to case	R_{thJC}	0.15	°C /W
Thermal resistance, junction to ambient	R_{thJA}	62	

ELECTRICAL CHARACTERISTICS, at T_c = 25°C, unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Static Characteristics						
Drain-source breakdown voltage	BV_{DSS}	V_{GS} = 0V, I_D = 0.5mA,	600	-	-	V
Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 5.4mA	2.1	3.0	3.9	
Drain-source diode forward voltage	V_{SD}	V_{GS} = 0V, I_{SD} = 94 A	-	1.0	1.2	V
Zero gate voltage drain current	I_{DSS}	V_{GS} = 0V, V_{DS} = 600V	-	1	50	µA

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Gate-body leakage current, forward	I_{GSS}	V_{GS} = ±30V, V_{DS} = 0V	-	-	±200	nA
Static drain-source On-resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 60 A	-	0.03	0.035	Ω
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{DS} = 25V, V_{GS} = 0V, f = 1MHz	-	13600	-	pF
Output capacitance	C_{oss}		-	4400	-	
Reverse transfer capacitance	C_{rss}		-	290	-	

SWITCHING CHARACTERISTICS, at T_c = 25°C, unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Turn-on delay time	$t_{d(on)}$	V_{DS} = 380V, I_D = 94 A, VGS = 0/13V R_G = 1.8 Ω Tj = 125 °C	-	18	-	ns
Rise time	t_r		-	27	-	
Turn-off delay time	$t_{d(off)}$		-	111	-	
Fall time	t_f		-	8	-	
Gate charge	Q_g	V_{DD} = 350V, I_D = 94 A V_{GS} = 0 to 10V	-	252	-	nC

Drain-Source Diode Characteristics, at Tc = 25°C, unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Reverse recovery time	t_{rr}	V_{GS} = 0V, I_{SD} = 94A di/dt =100A/µs	-	580	-	ns
Reverse recovery charge	Q_{rr}		-	46	-	µC
Peak reverse recovery current	I_{rrm}		-	146	-	A

Notes:
1. *Repetitive rating: pulse width limited by maximum junction temperature.*
2. *Lead current limitation*

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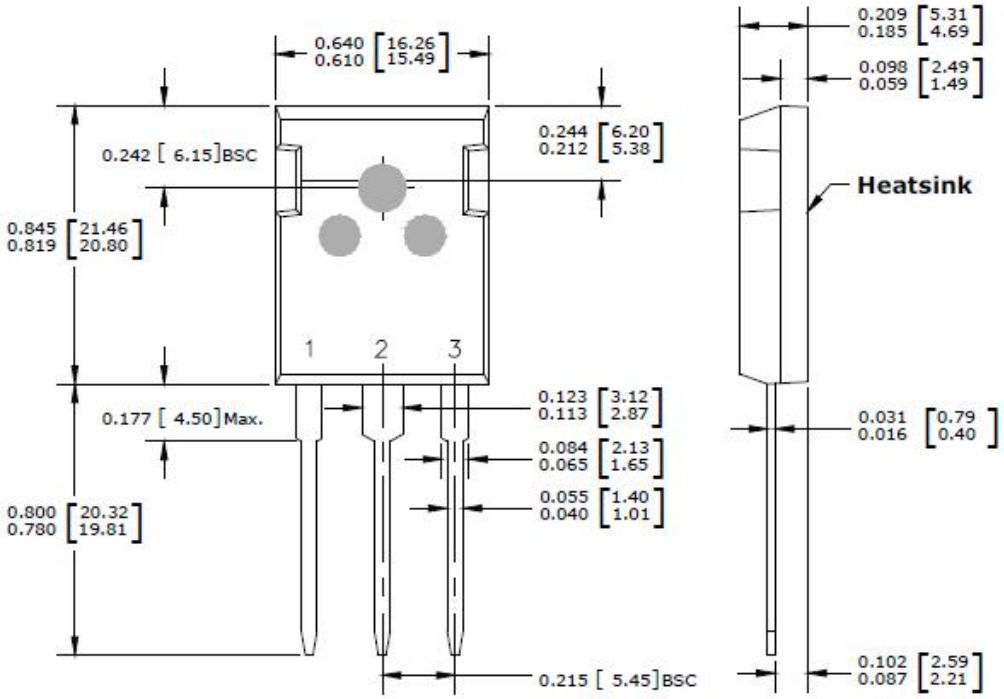
Package Outline Drawing



CoolMOS™ is a registered trademark of Infineon Technologies AG.

CAUTION: These devices are ESD sensitive. Use proper handling procedure.

Disclaimer

These specifications may not be considered as a guarantee of components characteristics. Components have to be tested depending on intended application as adjustments may be necessary. The use of **iQXPRZ Power Inc.** components in life support appliances and systems are subject to written approval of **iQXPRZ Power Inc.**

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