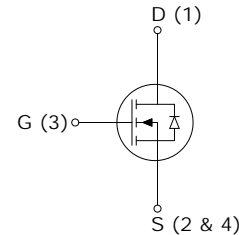
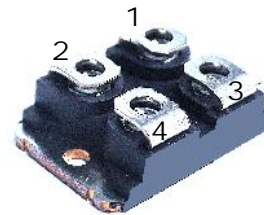


**PRELIMINARY DATASHEET**
**800V 15A, N-Channel Enhancement Mode CoolMOS™  
 Power MOSFET in Isolated SOT227 Package**
**APPLICATIONS**

- Consumer SMPS
- PC silver box
- Solar inverters
- Welding inverters
- Induction heating
- Electronic ballast


**FEATURES**

- 800V rated voltage
- High dv/dt rated
- High peak current capability
- Low gate charge
- Low capacitances
- Low RDS(on) <0.29 Ω
- Pb-free finished; **RoHS compliant**


**MAXIMUM RATINGS, T<sub>c</sub> = 25°C unless otherwise noted**

Parameter	Symbol	Value	Units
Drain-Source voltage	V <sub>DSS</sub>	800V	V
Gate-Source voltage AC (f>1 Hz)	V <sub>GS</sub>	± 30	
Continuous drain current T <sub>c</sub> = 25°C T <sub>c</sub> = 100°C	I <sub>D</sub>	15 9	A
Pulsed drain current <sup>1)</sup>	I <sub>DM</sub>	45	
Continuous diode forward current	I <sub>S</sub>	15	
Diode pulse current <sup>1)</sup>	I <sub>S,pulse</sub>	45	
Repetitive avalanche current <sup>1), 2)</sup>	I <sub>AR</sub>	17	
Single-pulsed avalanche energy I <sub>D</sub> = 3.4A, V <sub>DD</sub> = 50V	E <sub>AS</sub>	670	mJ
Repetitive avalanche energy <sup>1), 2)</sup>	E <sub>AR</sub>	0.5	
MOSFET dv/dt ruggedness V <sub>DS</sub> = 0...640V	dV/dt	50	V/ns
Operating junction and storage temperature	T <sub>j</sub> , T <sub>stg</sub>	-55... +150	°C

**Thermal and Isolation Characteristics**

Parameter	Symbol	Max. Value	Units
<b>Characteristics</b>			
Thermal resistance, junction to case	R <sub>thJC</sub>	0.72	°C /W
Isolation voltage, RMS (measured between terminals and mounting base, 50-60 Hz, for 1-3 seconds)	V <sub>iso</sub>	3000	V

**ELECTRICAL CHARACTERISTICS**, at  $T_C = 25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
<b>Static Characteristics</b>						
Drain-source breakdown voltage	$BV_{DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	800	-	-	V
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 1.0mA$	2.1	3.0	3.9	
Drain-source diode forward voltage	$V_{SD}$	$V_{GS} = 0V, I_F = 15A$	-	-	1.2	V
Zero gate voltage drain current	$I_{DSS}$	$V_{GS} = 0V, V_{DS} = 800V$ $T_C = 25^\circ\text{C}$	-	-	25	$\mu A$
Gate-source leakage current	$I_{GSS}$	$V_{GS} = 20V, V_{DS} = 0V$	-	-	100	nA
Static drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 11A$ $T_C = 25^\circ\text{C}$ $T_C = 150^\circ\text{C}$	-	0.25	0.29	$\Omega$
			-	0.67	-	
<b>Dynamic Characteristics</b>						
Input capacitance	$C_{iss}$	$V_{DS} = 100V,$ $V_{GS} = 0V,$	-	2300	-	pF
Output capacitance	$C_{oss}$	$f = 1.0\text{ MHz}$	-	94	-	

**SWITCHING CHARACTERISTICS**, at  $T_C = 25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 400V,$ $I_D = 15A,$ $V_{GS} = 10V,$ $R_G = 4.7\Omega$	-	22	-	ns
Rise time	$t_r$		-	13	-	
Turn-off delay time	$t_{d(off)}$		-	64	-	
Fall time	$t_f$		-	11	-	
Gate charge	$Q_g$	$V_{DD} = 640V,$ $I_D = 15A,$ $V_{GS} = 0\text{ to }0V$	-	77	-	nC
Gate-source charge	$Q_{gs}$		-	11	-	
Gate-drain charge	$Q_{gd}$		-	40	-	

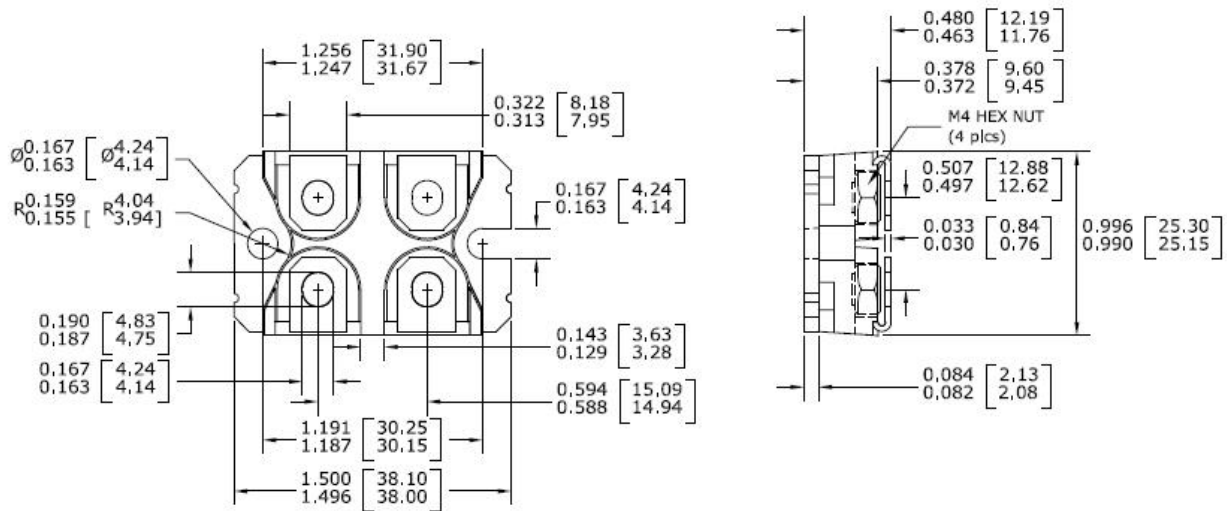
**Drain-Source Diode Characteristics**, at  $T_C = 25^\circ\text{C}$ , unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Reverse recovery time	$t_{rr}$	$V_R = 400V, I_S = 15A$ $di_f/dt = 100A/\mu s$	-	484	-	ns
Reverse recovery charge	$Q_{rr}$		-	13.2	-	$\mu C$
Peak reverse recovery current	$I_{rrm}$		-	45	-	A

## Notes:

1. Pulse width limited by maximum junction temperature
2. Repetitive avalanche causes power losses that can be calculated as  $P_{AV} = E_{AR} \cdot f$

**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.**