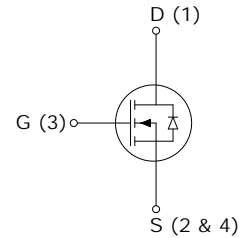


PRELIMINARY DATASHEET
**800V 15A, N-Channel Enhancement Mode CoolMOS™
 Power MOSFET in SOT227-VL (Vertical leads) Package**
APPLICATIONS

- Consumer SMPS
- PC silver box
- Solar inverter
- Welding inverter
- 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_C = 25°C unless otherwise noted

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

Thermal and Isolation Characteristics

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

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

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

SWITCHING CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 400V,$ $I_D = 17A,$ $V_{GS} = 10V,$ $R_G = 4.7\Omega$	-	25	-	ns
Rise time	t_r		-	15	-	
Turn-off delay time	$t_{d(off)}$		-	72	-	
Fall time	t_f		-	12	-	
Gate charge	Q_g	$V_{DD} = 640V,$ $I_D = 17A,$ $V_{GS} = 0\text{ to }0V$	-	88	-	nC
Gate-source charge	Q_{gs}		-	12	-	
Gate-drain charge	Q_{gd}		-	45	-	

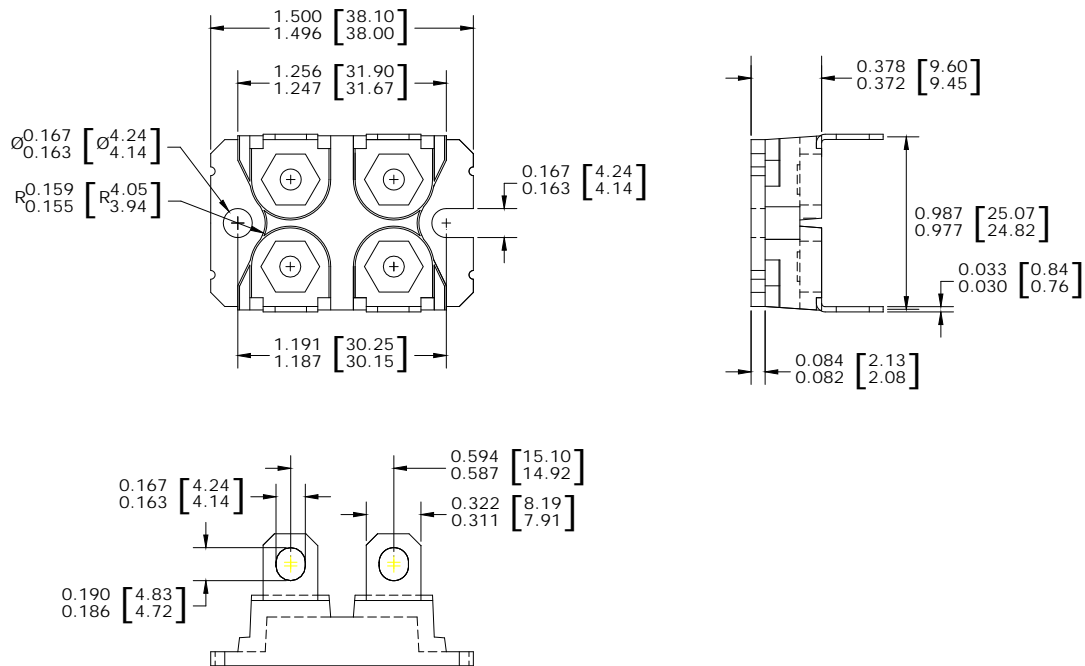
Drain-Source Diode Characteristics

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Reverse recovery time	t_{rr}	$V_R = 400V, I_S = I_F = 17A$ $di_F/dt = 100A/\mu s$	-	550	-	ns
Reverse recovery charge	Q_{rr}		-	15	-	μC
Peak reverse recovery current	I_{rrm}		-	51	-	A

Notes:

- Pulse width limited by maximum junction temperature
- 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.**