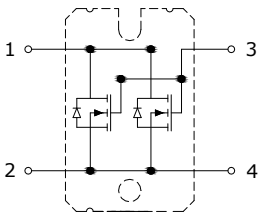
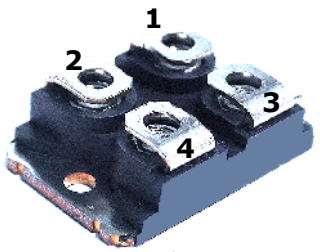
PRELIMINARY DATASHEET

800V, 2x15A N-Channel CoolMOS™ in Parallel In SOT227 Package

- Extreme dv/dt rated
- High peak current capability
- Low gate charge
- Low capacitances
- Pb-free lead finish; RoHS compliant





MAXIMUM RATINGS, T_C = 25°C unless otherwise noted

Parameter	Symbol	Value	Units
Drain-Source voltage	V_{DSS}	800	V
Gate-Source voltage AC (f>1 Hz)	V_{GS}	+/- 30	
Continuous drain current T_C = 25°C T_C = 100°C	I_D	 30 19	A
Pulsed drain current, pulse width limited by T_{jmax}	I_{DM}	90	
Continuous diode forward current	I_S	30	
Diode pulse current[2]	$I_{S,pulse}$	90	
MOSFET dv/dt ruggedness V_{DS} = 0..640V	dV/dt	50	V/ns
Operating junction and storage temperature	T_j, T_{stg}	-55 to +150	°C

Thermal and Isolation Characteristics

Parameter	Symbol	Max. Value	Units
Characteristics			
Thermal resistance, junction to case	R_{thJC}	0.36	°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°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 = 500µA	800	-	-	V
Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 2.0mA	2.1	3.0	3.9	
Drain-source diode forward voltage	V_{SD}	V_{GS} = 0V, I_F = 30A	-	1.0	1.2	V
Zero gate voltage drain current	I_{DSS}	V_{GS} = 0V, V_{DS} = 800V T_C = 25°C	-	-	50	µA
Gate-source leakage current	I_{GSS}	V_{GS} = 20V, V_{DS} = 0V	-	-	200	nA
Static drain-source On-resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 22A T_C = 25°C T_C = 150°C	 - -	 0.125 0.335	 0.145 -	Ω

Website: www.iqxprzpower.com
Telefax +632 837 1538

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

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{DS} = 100V, V_{GS} = 0V, f = 1.0 MHz	-	4600	-	pF
Output capacitance	C_{oss}		-	188	-	

SWITCHING CHARACTERISTICS

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Turn-on delay time	$t_{d(on)}$	V_{DD}=400V, I_D=30A, V_{GS}=10V, R_G=2.4Ω	-	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 = 30A, V_{GS} = 0 to 10V	-	176	-	nC
Gate-source charge	Q_{gs}		-	24	-	
Gate-drain charge	Q_{gd}		-	90	-	

Drain-Source Diode Characteristics

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

Team Pacific Building, Electronics Avenue
FTI Complex, Special Economic Zone
Taguig City, Philippines

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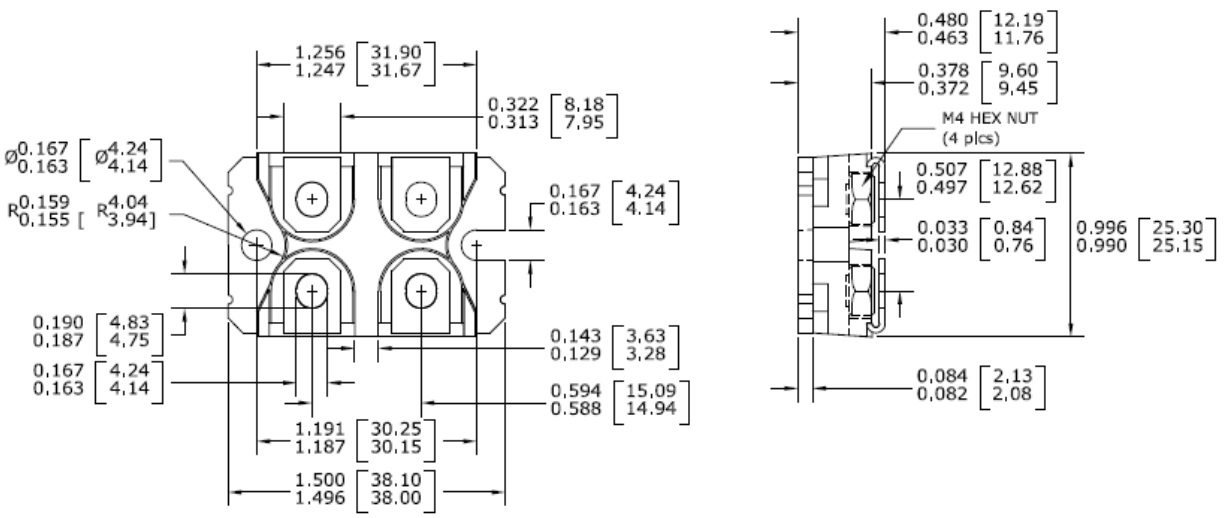
PACKAGE OUTLINE DRAWING



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