

TECHNICAL DATA
DATASHEET 1138, REV. D

HV MOSFET Power Module Data Sheet

DESCRIPTION: 3000 VOLT, 1.0 AMP, INDUSTRIAL MOSFET POWER MODULE

ELECTRICAL CHARACTERISTICS

(AT $T_j=25^{\circ}\text{C}$ UNLESS OTHERWISE SPECIFIED)

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
POWER MOSFETS Q1,...,6						
Drain-to-Source Breakdown Voltage for each one of Q1,2,...,6	$V_{(BR)DSS}$	$V_{GS}=0V, I_b=0.5\text{ mA}, T_j = 25^{\circ}\text{C}$	1000	-	-	V
Drain-to-Source Leakage Current	I_{DSS}	$V_{GS}=0V, V_{DS}=1000V, T_j = 25^{\circ}\text{C}$ $V_{DS}=1000V, T_j = 125^{\circ}\text{C}$	-	-	0.250 2	mA
Continuous Drain Current	I_b	$V_{GS}=10V$	-	-	1	A
Maximum Pulsed Drain Current ⁽¹⁾	I_{DM}	$T_c = 25^{\circ}\text{C}$	-	-	4	A
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$ $I_b = 0.50\text{mA}$	2.0	-	4.0	V
Static Drain-to-Source On Resistance	R_{DS}	$V_{GS} = 10\text{ V}, I_b = 0.80\text{ A}$	-	-	11.0	Ω
Input Capacitance	C_{iss}	$V_{DS} = 25\text{ V}, V_{GS} = 0\text{ V}, f = 1\text{ MHz}$	-	500	-	pF
Output Capacitance	C_{oss}		-	52	-	
Reverse Transfer Cap.	C_{rss}		-	17	-	
Total Gate Charge	Q_G	$V_{GS} = 10\text{ V}, I_b = 1\text{ A}, V_{DD} = 400\text{ V}$	-	-	38	nC
Turn-on Delay	$t_{d(on)}$	$V_{DD} = 500\text{ V}, V_{GS} = 10\text{ V}, I_b = 1.0\text{ A}$	-	10	-	ns
Rise Time	t_r		-	17	-	
Turn-off Delay	$t_{d(off)}$		-	58	-	
Fall Time	t_f		-	31	-	
Junction to Base Thermal Resistance	R_{thjc}				3.7	$^{\circ}\text{C/W}$
Nominal Gate-to-source Zener Breakdown Voltage, $I_z = 1\text{mA}$	V_Z		± 17.5	± 18.0	± 19.0	V
Operating and Storage Junction Temperature	T_j		-40		100	$^{\circ}\text{C}$
Operating Case Temperature	T_c		-40		100	$^{\circ}\text{C}$
Pin-To-Base plate Voltage Isolation	V_{iso}	1 minute, at sea level			10,000	V
DIODE CHARACTERISTICS D1, D2, D3						
Forward Voltage	V_F	$I_F = 1\text{ A}$	-	-	1.1	V
Reverse Recovery Time	t_{rr}	$T_j = 25^{\circ}\text{C}, I_F = 1\text{ A}, di/dt = 50\text{ A}/\mu\text{s}, V_{rr}=400\text{V}$	-	-	150	ns
GATE DRIVE MOSFETS Q7,...,18 ⁽¹⁾ CHARACTERISTICS						
Turn-On Time	t_{on}		-	-	20	ns
Turn-Off Time	t_{off}		-	-	20	ns

Notes,

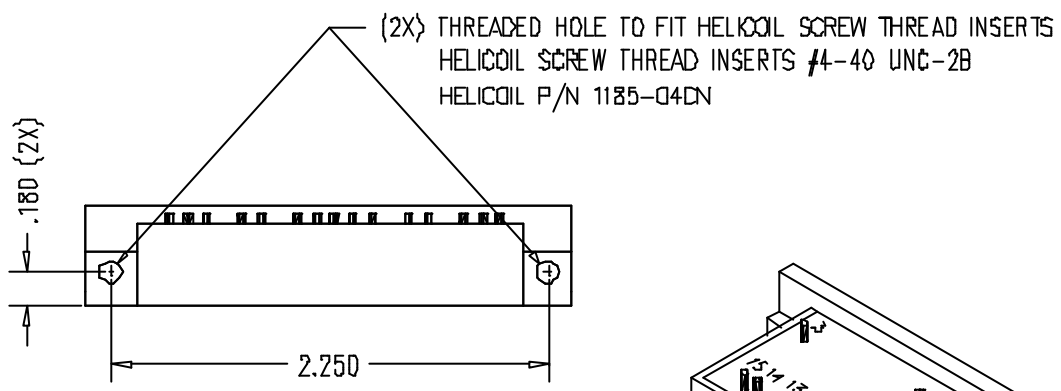
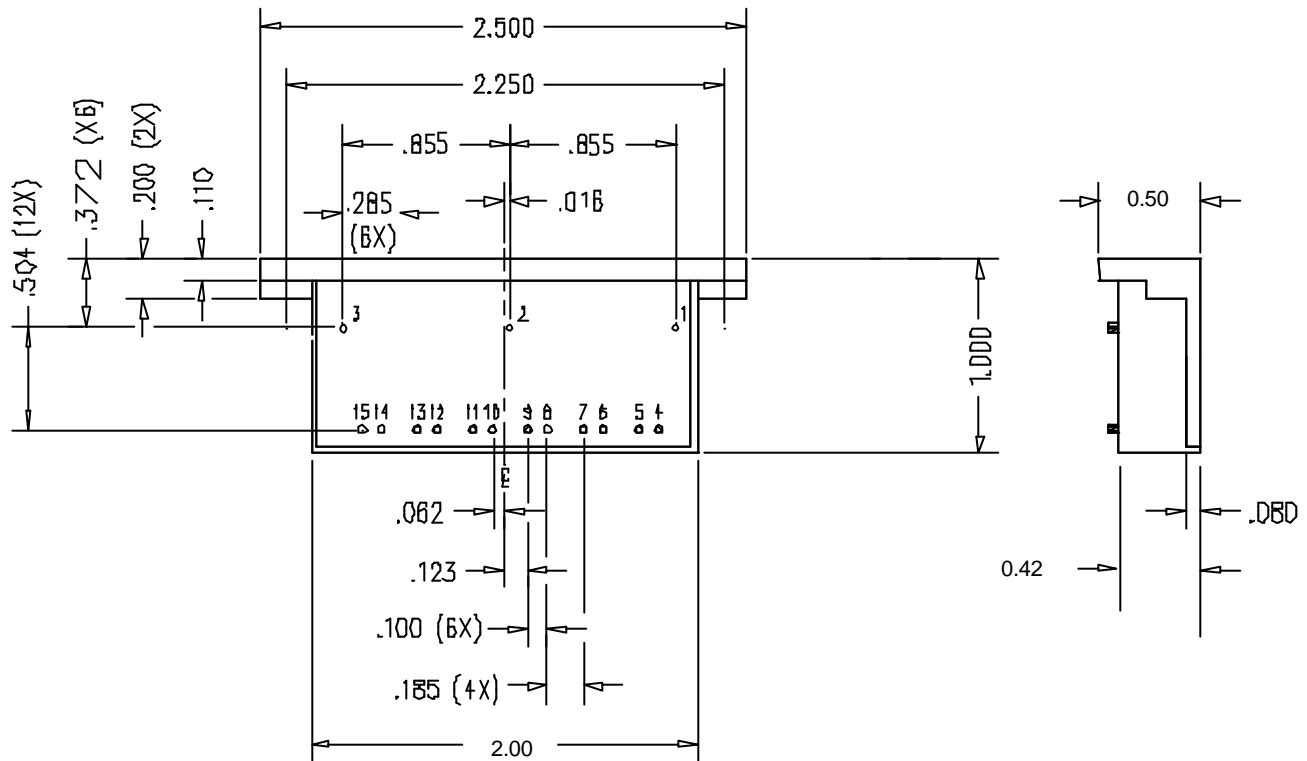
1- Type 2N7002 or similar.

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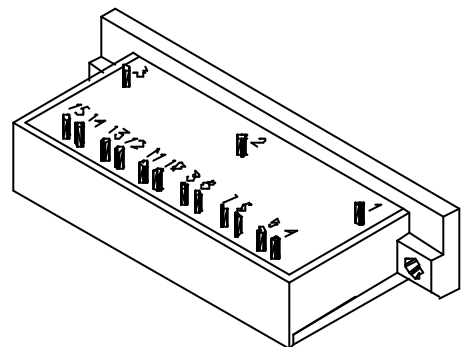
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MECHANICAL DRAWING - In inches



Notes:

- 1- All Dimensions are +/- 0.010 in.
- 2- Terminals 1, 2, & 3 are HV 24 AWG wires.
- 3- Terminals 4-15 are F = 0.030" pins



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