

TECHNICAL DATA  
DATASHEET 1137, REV.D

## HV IGBT Solid-State Switch Data Sheet

**DESCRIPTION:** 12000 VOLT, 1.0 AMP, INDUSTRIAL IGBT Solid-state Switch

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

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Collector-to-Emitter Breakdown Voltage for each one of Q1,2,3,4	$V_{(BR)CES}$	$V_{GE}=0V, I_C=0.5\text{ mA}, T_j = 25^{\circ}\text{C}$	2900 <sup>(1)</sup>	-	-	V
Collector-to-Emitter Leakage Current	$I_{CES}$	$V_{GE}=0V, V_{CE}=2500V, T_j = 25^{\circ}\text{C}$ $V_{CE}=2000V, T_j = 125^{\circ}\text{C}^{(1)}$	-	-	0.5 2	mA
Continuous Collector Current	$I_C$	$V_{GE}=10V$	-	-	1 <sup>(2)</sup>	A
Maximum Pulsed Collector Current, 5 $\mu$ sec	$I_{CM}$	$T_C = 25^{\circ}\text{C}$	-	-	100	A
Gate-Source Threshold Voltage	$V_{GS(th)}$	$V_{CE} = V_{GE}$ $I_C = 1\text{mA}$	5.0	-	7.5	V
Gate Input Capacitance	$C_{ISS}$	$V_{CE} = 25\text{ V}$	-	12.5	-	nF
Collector-to-Emitter Saturation Voltage for each one of Q1,2,3,4	$V_{CEsat}$	$V_{GE} = 15\text{ V}, I_C = 2.0\text{ A}$	-	-	0.8	V
Junction to Base Thermal Resistance	$R_{thjc}$				1.0	$^{\circ}\text{C/W}$
Nominal Gate-to-Emitter Zener Breakdown Voltage, $I_Z = 1\text{mA}$	$V_Z$		17.5	18.5	19.0	V
Series Zener Breakdown Voltage, $I_Z = 1\text{mA}$	$V_Z$		11.0	11.5	12.5	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			10000	V

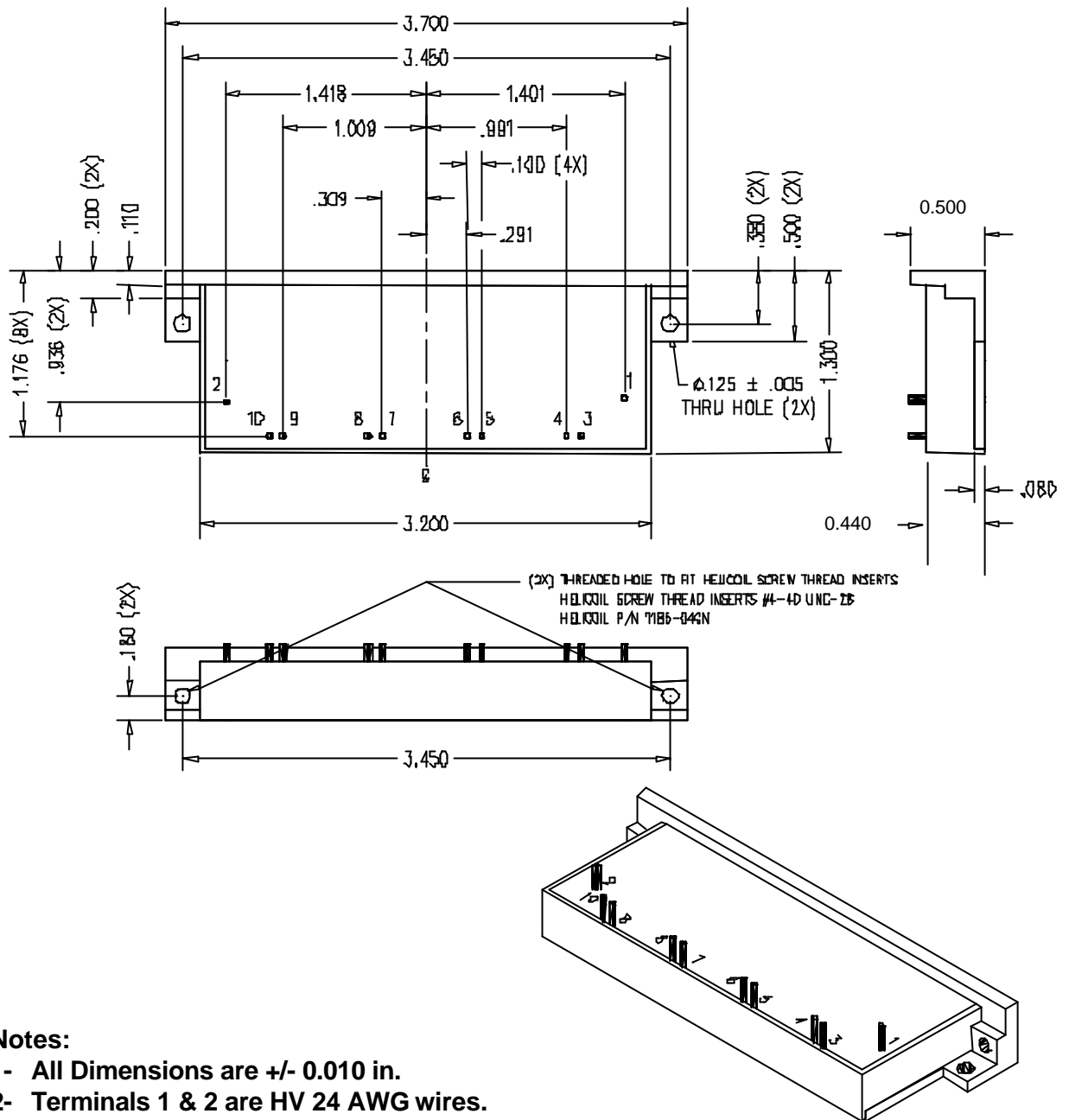
### HV TVS CHARACTERISTICS

PARAMETER	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
BD Voltage	$V_{BD}$	$I_C = 0.50\text{ mA}$	2500	2600	2700	V
Clamping Voltage	$V_{CE(CL)}$	$I_C = 2\text{ mA}$	2600	2700	2900	V

Notes,

- 1- Guaranteed by design. To be tested at room temperature only.
- 2- Collector current is limited by the rating of the 12.5  $\Omega$  power resistors. IGBT actual current rating is 15A.

**MECHANICAL DRAWING - In inches**



**Notes:**

- 1- All Dimensions are +/- 0.010 in.
- 2- Terminals 1 & 2 are HV 24 AWG wires.
- 3- Terminals 3-10 are F = 0.030" pins.