

TECHNICAL DATA  
DATA SHEET 4011, REV -

## HERMETIC POWER MOSFET N-CHANNEL

**FEATURES:**

- 500 Volt, 0.85, Ohm, 5.5Amp MOSFET
- Isolated
- Hermetically Sealed

**MAXIMUM RATINGS**

ALL RATINGS ARE AT  $T_A = 25^\circ\text{C}$  UNLESS OTHERWISE SPECIFIED.

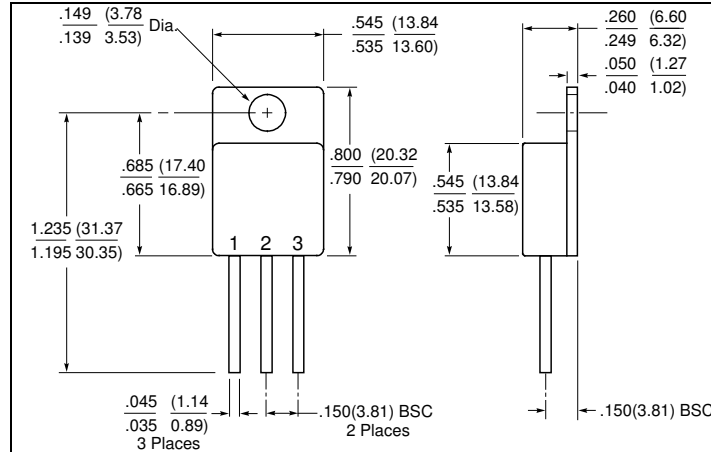
RATING	SYMBOL	MIN.	TYP.	MAX.	UNITS
GATE TO SOURCE VOLTAGE	$V_{GS}$	-	-	$\pm 20$	Volts
CONTINUOUS DRAIN CURRENT $T_C = 25^\circ\text{C}$	$I_D$	-	-	5.5	Amps
PULSED DRAIN CURRENT @ $T_C = 25^\circ\text{C}$	$I_{DM}$	-	-	22	Amps
OPERATING AND STORAGE TEMPERATURE	$T_{OP}/T_{STG}$	-55	-	+150	$^\circ\text{C}$
TERMAL RESISTANCE JUNCTION TO CASE	$R_{\theta JC}$	-	-	0.74	$^\circ\text{C}/\text{W}$
TOTAL DEVICE DISSIPATION @ $T_C = 25^\circ\text{C}$	$P_D$	-	-	150	Watts

**ELECTRICAL CHARACTERISTICS**

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNITS
DRAIN TO SOURCE BREAKDOWN VOLTAGE $V_{GS} = 0\text{V}, I_D = 1.0\text{mA}$	$BV_{DSS}$	500	-	-	Volts
DRAIN TO SOURCE ON STATE RESISTANCE $V_{GS} = 10\text{V}, I_D = 3.5\text{A}$	$R_{DS(ON)}$	-	-	0.85	$\Omega$
GATE THRESHOLD VOLTAGE $V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	$V_{GS(th)}$	2.0	-	4.0	Volts
FORWARD TRANSCONDUCTANCE $V_{DS} \geq 15\text{V}, I_D = 3.5\text{A}$	$g_{fs}$	4.7	-	-	$\text{S}(1/\Omega)$
ZERO GATE VOLTAGE DRAIN CURRENT, $T_J = 25^\circ\text{C}$ $(V_{DS} = 0.8 \times \text{Max. Rating}, V_{GS} = 0\text{V}), T_J = 125^\circ\text{C}$	$I_{DSS}$	-	-	25 250	$\mu\text{A}$
GATE TO SOURCE LEAKAGE FORWARD $V_{GS} = 20\text{V}$	$I_{GSS}$	-	-	100	nA
GATE TO SOURCE LEAKAGE REVERSE $V_{GS} = -20\text{V}$				-100	
TOTAL GATE CHARGE $V_{GS} = 10\text{V},$	$Q_g$	-	-	68.5	nC
GATE TO SOURCE CHARGE $V_{DS} = 250\text{V},$	$Q_{gs}$			12.5	
GATE TO DRAIN CHARGE $I_D = 5.5\text{A}$	$Q_{gd}$			40.5	
TURN ON DELAY TIME $V_{DD} = 250\text{V},$	$t_{d(ON)}$	-	21	-	nsec
RISE TIME $I_D = 5.5\text{A},$	$t_r$		73		
TURN OFF DELAY TIME $R_G = 9.1\Omega,$	$t_{d(OFF)}$		72		
FALL TIME $V_{GS} = 10\text{V}$	$t_f$		51		
CONTINUOUS SOURCE CURRENT	$I_S$	-	5.5	-	Amps
DIODE FORWARD VOLTAGE $T_J = 25^\circ\text{C}, I_S = 5.5\text{V}$ $V_{GS} = 0\text{V}$	$V_{SD}$	-	-	1.5	Volts
REVERSE RECOVERY TIME $T_J = 25^\circ\text{C},$ $I_S = 5.5\text{A},$ $di/dt \leq -100\text{A}/\mu\text{sec},$	$t_{rr}$	-	-	700	nsec
REVERSE RECOVERY CHARGE $V_{DD} \leq 50\text{V}$	$Q_{rr}$			8.9	$\mu\text{C}$
INPUT CAPACITANCE $V_{GS} = 0\text{V}, V_{DS} = 25\text{V},$	$C_{iss}$	-	1300	-	pF
OUTPUT CAPACITANCE $f = 1.0\text{MHz}$	$C_{oss}$		310		
REVERSE TRANSFER CAPACITANCE	$C_{rss}$		120		

**TECHNICAL DATA**  
**DATA SHEET 4011, REV -**

**MECHANICAL DIMENSIONS: in Inches / mm**



**TO-254**

**PINOUT TABLE**

DEVICE TYPE	PIN 1	PIN 2	PIN 3
MOSFET TO-254 PACKAGE	DRAIN	SOURCE	GATE

**TECHNICAL DATA**

**DISCLAIMER:**

- 1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the Sensitron Semiconductor sales department for the latest version of the datasheet(s).
- 2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.
- 3- In no event shall Sensitron Semiconductor be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). Sensitron Semiconductor assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
- 4- In no event shall Sensitron Semiconductor be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
- 5- No license is granted by the datasheet(s) under any patents or other rights of any third party or Sensitron Semiconductor.
- 6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of Sensitron Semiconductor.
- 7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations.