TECHNICAL DATA
DATA SHEET 686, REV. -

HERMETIC POWER MOSFET
N-CHANNEL

(PRELIMINARY)

DESCRIPTION: 30 VOLT, 20 AMP, 0.02 OHM MOSFET IN A HERMETIC TO-257 PACKAGE.

MAXIMUM RATINGS

ALL RATINGS ARE AT T_A = 25°C UNLESS OTHERWISE SPECIFIED.

RATING	SYMBOL	MIN.	TYP.	MAX.	UNITS
GATE TO SOURCE VOLTAGE	V_{GS}	-	-	±15	Volts
CONTINUOUS DRAIN CURRENT V_{GS}=10V, T_C = 25°C V_{GS}=10V, T_C = 100°C	I_D	-	-	20 20	Amps
PULSED DRAIN CURRENT @ T_C = 25°C	I_{DM}	-	-	100	Amps(pk)
OPERATING AND STORAGE TEMPERATURE	T_{OP}/T_{STG}	-55	-	+150	°C
TERMAL RESISTANCE JUNCTION TO CASE	$R_{\theta JC}$	-	-		°C/W
TOTAL DEVICE DISSIPATION @ T_C = 25°C	P_D	-	-		Watts

ELECTRICAL CHARACTERISTICS

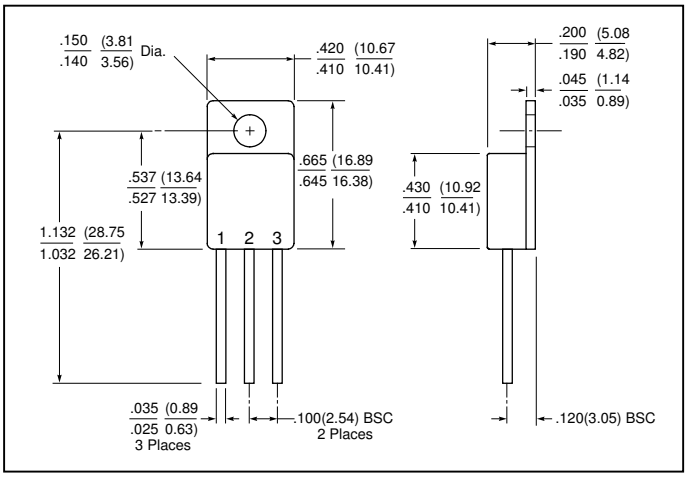
DRAIN TO SOURCE BREAKDOWN VOLTAGE V_{GS} = 0V, I_D = 250µA	BV_{DSS}	30	-	-	Volts
DRAIN TO SOURCE ON STATE RESISTANCE I_D = 10A, V_{GS} = 5.0V@T_J = 25°C	$R_{DS(ON)}$	-	6.0	20	mΩ
FORWARD TRANSCONDUCTANCE V_{DS} = 3.0Vdc, I_{DS} = 37.5A	g_{fs}	15	55	-	S(1/Ω)
ZERO GATE VOLTAGE DRAIN CURRENT V_{DS} = 30Vdc, V_{GS} = 0Vdc V_{DS} = 30Vdc V_{GS} = 0Vdc, T_J = 125°C	I_{DSS}	-	.05	 10 100	µA
GATE TO BODY LEAKAGE CURRENT V_{GS} = ±20Vdc, V_{DS} = 0Vdc	I_{GSS}	-	-	+100 -100	nA
TOTAL GATE CHARGE (V_{GS} = 5.0 Vdc, GATE TO SOURCE CHARGE V_{DS} = 24Vdc, GATE TO DRAIN CHARGE I_D = 75Adc)	Q_g Q_{gs} Q_{gd}		61 14 33	122 28 66	nC
TURN ON DELAY TIME (V_{DS} = 15V, RISE TIME I_D = 75Adc, TURN OFF DELAY TIME V_{GS} = 5.0 Vdc, FALL TIME R_G = 4.7Ω)	$t_{d(ON)}$ t_r $t_{d(ON)}$ t_f	-	24 493 60 149	48 986 120 300	nsec
FORWARD VOLTAGE, (I_S = 4.7Adc, V_{GS} = 0V) (I_S = 75Adc, V_{GS} = 0Vdc, T_J = 125°C)	V_{SD}	-	0.97 0.87	1.1	Volts
REVERSE RECOVERY TIME (I_S = 75Adc, V_{GS} = 0Vdc REVERSE RECOVERY CHARGE di/dt = 100A/µsec)	t_{rr} Q_{rr}	-	58 .088	-	nsec µC
INPUT CAPACITANCE (V_{DS} = 25 Vdc, OUTPUT CAPACITANCE V_{GS} = 0 Vdc, REVERSE TRANSFER CAPACITANCE f = 1 MHz)	C_{iss} C_{oss} C_{rss}	-	4025 1353 307	5635 1894 430	pF

*Note: Current limited by pin diameter.

SENSITRON

DATA SHEET 686
REVISION -

MECHANICAL DIMENSIONS: in Inches / mm



TO-257

PINOUT TABLE

DEVICE TYPE	PIN 1	PIN 2	PIN 3
MOSFET IN A TO-257 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.