

TECHNICAL DATA  
DATA SHEET 693, REV. -

## HERMETIC POWER MOSFET N-CHANNEL

(PRELIMINARY)

DESCRIPTION: 30 VOLT, 35 AMP, 0.012 OHM MOSFET IN A HERMETIC TO-254 PACKAGE.

### 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	$V_{GS}$	-	-	$\pm 15$	Volts
CONTINUOUS DRAIN CURRENT $V_{GS}=10\text{V}, T_C = 25^\circ\text{C}$ $V_{GS}=10\text{V}, T_C = 100^\circ\text{C}$	$I_D$	-	-	35 35	Amps
PULSED DRAIN CURRENT @ $T_C = 25^\circ\text{C}$	$I_{DM}$	-	-	200	Amps(pk)
OPERATING AND STORAGE TEMPERATURE	$T_{OP}/T_{STG}$	-55	-	+150	$^\circ\text{C}$
TERMAL RESISTANCE JUNCTION TO CASE	$R_{\theta JC}$	-	-	1.0	$^\circ\text{C/W}$
TOTAL DEVICE DISSIPATION @ $T_C = 25^\circ\text{C}$	$P_D$	-	-	125	Watts

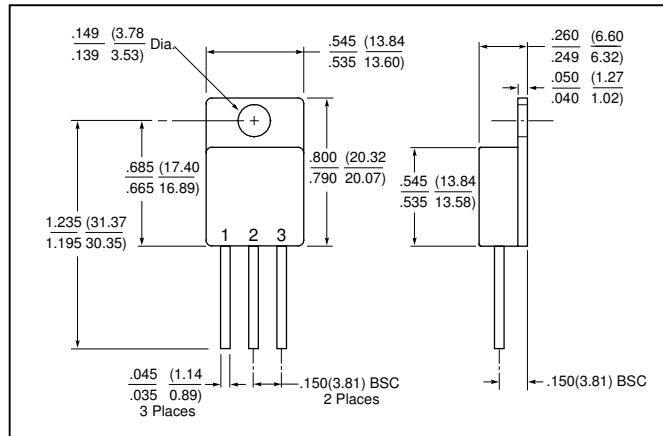
### ELECTRICAL CHARACTERISTICS

DRAIN TO SOURCE BREAKDOWN VOLTAGE $V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	$BV_{DSS}$	30	-	-	Volts
DRAIN TO SOURCE ON STATE RESISTANCE $I_D = 17.5\text{A}, V_{GS} = 5.0\text{V}@T_J = 25^\circ\text{C}$	$R_{DS(ON)}$	-	6.0	12	$\text{m}\Omega$
FORWARD TRANSCONDUCTANCE $V_{DS} = 3.0\text{Vdc}, I_{DS} = 17.5\text{A}$	$g_{fs}$	15	55	-	$\text{S}(1/\Omega)$
ZERO GATE VOLTAGE DRAIN CURRENT $V_{DS} = 30\text{Vdc}, V_{GS} = 0\text{Vdc}$ $V_{DS} = 30\text{Vdc}$ $V_{GS} = 0\text{Vdc}, T_J = 125^\circ\text{C}$	$I_{DSS}$	-	.05	10 100	$\mu\text{A}$
GATE TO BODY LEAKAGE CURRENT $V_{GS} = \pm 20\text{Vdc},$ $V_{DS} = 0\text{Vdc}$	$I_{GSS}$	-	-	+100 -100	nA
TOTAL GATE CHARGE GATE TO SOURCE CHARGE GATE TO DRAIN CHARGE $(V_{GS} = 5.0\text{Vdc},$ $V_{DS} = 24\text{Vdc},$ $I_D = 35\text{A})$	$Q_g$ $Q_{gs}$ $Q_{gd}$		61 14 33	122 28 66	nC
TURN ON DELAY TIME RISE TIME TURN OFF DELAY TIME FALL TIME $(V_{DS} = 15\text{V},$ $I_D = 35\text{A},$ $V_{GS} = 5.0\text{Vdc},$ $R_G = 4.7\Omega)$	$t_{d(ON)}$ $t_r$ $t_{d(OFF)}$ $t_f$	-	24 493 60 149	48 986 120 300	nsec
FORWARD VOLTAGE, $(I_S = 4.7\text{A}, V_{GS} = 0\text{V})$ $(I_S = 35\text{A}, V_{GS} = 0\text{Vdc}, T_J = 125^\circ\text{C})$	$V_{SD}$	-	0.97 0.87	1.1	Volts
REVERSE RECOVERY TIME REVERSE RECOVERY CHARGE $(I_S = 35\text{A}, V_{GS} = 0\text{Vdc}$ $di/dt = 100\text{A}/\mu\text{sec})$	$t_{rr}$ $Q_{rr}$	-	58 .088	-	nsec $\mu\text{C}$
INPUT CAPACITANCE OUTPUT CAPACITANCE REVERSE TRANSFER CAPACITANCE $(V_{DS} = 25\text{Vdc},$ $V_{GS} = 0\text{Vdc},$ $f = 1\text{MHz})$	$C_{iss}$ $C_{oss}$ $C_{rss}$	-	4025 1353 307	5635 1894 430	pF

\*Note: Current limited by pin diameter.

**SENSITRON**  
**DATA SHEET 693**  
**REVISION -**

**MECHANICAL DIMENSIONS: in Inches / mm**



**TO-254**

**PINOUT TABLE**

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

**TECHNICAL DATA**

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